

# **NORTH ANNA POWER STATION UNITS 1 AND 2**

**REPORT ON  
INDIVIDUAL PLANT EXAMINATION OF EXTERNAL EVENTS (IPEEE) - SEISMIC**

**PREPARED IN RESPONSE TO  
USNRC GENERIC LETTER 88-20 SUPPLEMENTS 4 AND 5**

**VIRGINIA ELECTRIC AND POWER COMPANY**

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## EXECUTIVE SUMMARY

Generic Letter (GL) 88-20 Supplement 4, "Individual Plant Examination of External Events (IPEEE) for Severe Accident Vulnerabilities" was issued by the Nuclear Regulatory Commission (NRC) in June 1991. This letter and NRC NUREG-1407, "Procedural and Submittal Guidance for the Individual Plant Examination of External Events for Severe Accident Vulnerabilities", published June 1991, requested each nuclear plant licensee to perform IPEEE. In a December 1991 letter to the NRC, Virginia Power identified the planned approach to address IPEEE. For non-seismic external events and fires, the IPEEE effort was completed and a report was submitted to the NRC in June 1994.

For the seismic event, North Anna Power Station was categorized in NUREG 1407 as a focused scope plant. As identified in Virginia Power's December 1991 letter, the Seismic Margins Method (SMM) developed by Electric Power Research Institute (EPRI) with enhancements was selected for North Anna Power Station. A completion schedule for IPEEE - Seismic was initially provided by Virginia Power in its September 1992 letter to the NRC which also noted that elements of the effort to resolve IPEEE - Seismic, notably plant walkdowns, will be integrated with the resolution of Unresolved Safety Issue (USI) A-46 identified in NRC's Supplement 1 to GL 87-02 of May 1992. Subsequently, in October 1994 these schedules were revised primarily to allow the major portion of the effort for both USI A-46 and the seismic portion of IPEEE to be performed by in-house engineers. In September 1995, the NRC issued Supplement 5 to GL 88-20. This letter gave further guidance on the basis for selection of components that needed capacity evaluation. Based on GL 88-20, Supplement 5, Virginia Power submitted a revised approach to NRC in November 1995. This approach, while still retaining the EPRI SMM methodology and treating North Anna as a focused scope plant, identified areas where screening and judgment by experienced and trained engineers would eliminate the need for performing capacity calculations for rugged components, structures, and systems; and require such evaluations only for weaker and critical components. The IPEEE - Seismic program at North Anna Power Station has been performed in accordance with the EPRI SMM methodology for a focused plant and Virginia Power's stated commitments.

At the onset of the IPEEE - Seismic effort, median centered, In-Structure Response Spectra (ISRS) were developed for a Review Level Earthquake (RLE) for the various North Anna Station buildings. The RLE was based on the NUREG/CR-0098 ground response spectrum shape, anchored at horizontal peak ground acceleration (pga) of 0.3g. Success path logic diagrams were developed which formed the basis of identifying a preferred success path and an alternate success path for safe shutdown. Components and systems were selected that perform the following four safety functions: Reactor Reactivity Control, Reactor Coolant Pressure Control, Reactor Coolant Inventory Control, and Decay Heat Removal. In addition, components from supporting systems were included. This established a Safe Shutdown Equipment List (SSEL). A relay seismic functionality review was not performed in the IPEEE- Seismic effort, consistent with the NUREG-1407 guidelines, because no low ruggedness relays were found at North Anna Power Station during the resolution of USI A-46.

The IPEEE-Seismic review consisted of plant walkdowns, analytical reviews to determine high-

confidence-of-low-probability-of-failure (HCLPF) capacities, and several enhancements (including those for US! A-46) accomplished via design change modifications. Approximately 1800 SSEL items of equipment were walked down by Seismic Review Teams (SRT) consisting of trained and experienced engineers. Walkdowns of safety significant areas at North Anna Units 1 and 2 were performed to review the potential of seismic induced fire and flood and other potential seismic vulnerabilities related to systems, structures, and components. The vast majority of these walkdowns were performed by in-house SRTs.

Several conditions requiring review were identified as a result of the walkdowns and analyses. Most of these conditions have been resolved via design modifications and additional analytical evaluations. A few issues, primarily related to seismic interactions, remain and are planned to be resolved at a later date. None of the outstanding issues is considered to be a safety concern, however, their resolution could lead to the safety enhancement of the plant.

In February 1996, a peer review was conducted to assess the implementation of the IPEEE-Seismic program at North Anna. This review included walkdown of about 20% of the items representing all classes of equipment in the SSEL. Although a few open issues were noted at the time of the review, the reviewer concluded that the SRTs involved did an excellent seismic walkdown review at North Anna.

Based on the walkdowns, analyses, and design modification efforts conducted for IPEEE -Seismic, it is concluded that the HCLPF capacities of components, systems and structures at North Anna Power Station Units 1 and 2 are at or above the RLE level, with the exception of a few components whose capacities are less than 0.3g pga, but above the plant Safe Shutdown Earthquake (SSE) level.

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## Glossary of Acronyms and Symbols

AEC	Atomic Energy Commission
ALARA	As Low As Reasonably Achievable
CDFM	Conservative Deterministic Failure Margin Approach
DBE	Design Basis Earthquake, as defined in the North Anna UFSAR (Same as Safe Shutdown Earthquake)
EDG	Emergency Diesel Generator
EPRI	Electric Power Research Institute
GERS	Generic Equipment Ruggedness Spectrum.
GIP	Generic Implementation Procedure (for the resolution of USI A-46 issue, NRC Generic Letter 87-02)
GL	Generic Letter
GRS	Ground Response Spectrum
Hz.	Hertz (cycles per second)
HCLPF	High-Confidence-of-Low-Probability of Failure ( expressed in terms of peak ground acceleration)
IEEE	Institute of Electrical and Electronics Engineers, Inc.
IPE	Individual Plant Examination
IPEEE	Individual Plant Examination of External Events
ISRS	In-Structure Response Spectrum
LOCA	Loss-of-Coolant-Accident
NAPS	North Anna Power Station
NEP	Non Exceedance Probability
NRC	Nuclear Regulatory Commission
NSSS	Nuclear Steam Supply System
OBE	Operating Basis Earthquake
pga	Peak ground acceleration
PSAR	Preliminary Safety Analysis Report
RLE	Review Level Earthquake

SCE	Seismic Capability Engineer
SEWS	Screening Evaluation Work Sheet
SMA	Seismic Margin Assessment
SMM	Seismic Margin Methodology
SOV	Solenoid Operated Valve
SQUG	Seismic Qualification Utility Group
SRT	Seismic Review Team
SSE	Safe Shutdown Earthquake (Same as Design Basis Earthquake)
SSEL	Safe Shutdown Equipment List
SSI	Soil-Structure Interaction
TRS	Test Response Spectrum
UFSAR	Updated Final Safety Analysis Report
USI	Unresolved Safety Issue
ZPA	Zero Period Acceleration

## **1. INTRODUCTION**

### **1.1 BACKGROUND**

A policy statement for systematic examination of plant-specific vulnerabilities to severe accident which could be fixed with low cost improvements was made by the NRC in August 1985. As part of the implementation of the policy, Generic Letter 88-20 was issued in November 1988. Subsequent to this, to examine external hazards and to coordinate evaluations with other ongoing external event programs, Generic Letter (GL) 88-20 Supplement 4, "Individual Plant Examination of External Events (IPEEE) for Severe Accident Vulnerabilities" was issued by the NRC in June 1991. This letter and NRC NUREG-1407, "Procedural and Submittal Guidance for the Individual Plant Examination of External Events for Severe Accident Vulnerabilities", published June 1991, requested each nuclear plant licensee to perform IPEEE. In a December 1991 letter to the NRC, Virginia Power identified the planned approach to address IPEEE. For non-seismic external events and fires, the IPEEE effort was completed and a report was submitted to the NRC in early 1994.

For the seismic event, North Anna Power Station was categorized in NUREG-1407 as a focused scope plant. As identified in Virginia Power's December 1991 letter, the Seismic Margins Method (SMM) developed by Electric Power Research Institute (EPRI) with enhancement was selected for North Anna Power Station. A completion schedule for IPEEE - Seismic was initially provided by Virginia Power in its September 1992 letter to the NRC which also noted that elements of the effort to resolve IPEEE - Seismic, notably plant walkdowns, will be integrated with the resolution of Unresolved Safety Issue (USI) A-46 identified in NRC's Supplement 1 to GL 87-02 of May 1992. Subsequently, in October 1994, and in November 1996, these schedules were revised primarily to allow the major portion of the effort for both USI A-46 and the seismic portion of IPEEE to be performed by in-house engineers. In September 1995, the NRC issued Supplement 5 to GL 88-20. This letter gave further guidance on several issues including the basis of selection of components that needed capacity evaluation. Based on GL 88-20, Supplement 5, Virginia Power submitted a revised approach to NRC in November 1995. This approach, while still retaining the EPRI SMM methodology and treating North Anna as a focused scope plant, identified areas where screening and judgment by experienced and trained engineers would eliminate the need for performing explicit capacity calculations for rugged components, structures, and systems; and require such evaluations only for weaker and critical components. The IPEEE - Seismic program at North Anna Power Station is performed in accordance with the EPRI SMM methodology for a focused scope plant and the stated commitments.

### **1.2 SCOPE**

The IPEEE - Seismic scope includes walkdown and capacity evaluation of safe-shutdown equipment which is selected based on a success path, with redundancy. The SSEL list primarily consists of 20 classes of equipment and tanks and heat exchangers for the following four functions: Reactor Reactivity Control, Reactor Coolant Pressure Control, Reactor Coolant Inventory Control, and Decay Heat Removal. In addition, equipment from supporting systems is included. NSSS

equipment is also within the scope. This selected equipment comprises the SSEL, and is required to safely shutdown the plant, i.e., bring the plant to, and maintain it in a hot shutdown condition during the first 72 hours following an earthquake. Virginia Power has chosen to include additional components capable of bringing the plant to cold shutdown. In addition to the SSEL items of equipment, the IPEEE scope includes seismic induced floods and fires, containment integrity, and evaluation of various other plant systems, structures and areas to address potential seismic vulnerabilities. Excluded from the scope is the evaluation of relay chatter, soil liquefaction and reactor internals. Relays are excluded since they have been reviewed as part of the USI A-46 effort. No low ruggedness relays were discovered at North Anna during the USI A-46 review. Therefore, per the guidelines in NUREG 1407, no further evaluation of relays is required. Soil liquefaction and reactor internals were excluded as a result of the guidance provided in GL 88-20, Supplement 5, as discussed in Virginia Power's letter to the NRC in November 1995.

### 1.3 PLANT DESCRIPTION

The North Anna Units 1 and 2 Preliminary Safety Analysis Report (PSAR) was filed with the U.S. Atomic Energy Commission (AEC) on March 21, 1969, and Docket Nos. 50-338 (Unit 1) and 50-339 (Unit 2) were assigned. On February 19, 1971, Construction Permits CPPR-77 and CPPR-78 were issued for North Anna Units 1 and 2, respectively.

North Anna Units 1 and 2 are located on a site on the southern shore of Lake Anna in Louisa County, approximately 40 miles north-west of Richmond. Lake Anna was created by impounding excess waters of the North Anna River and was developed by Virginia Power. Water from the reservoir is used as a cooling medium for surface condensers and other heat exchanger equipment at the North Anna Power Station.

North Anna Units 1 and 2 each includes a three-coolant-loop pressurized light water reactor nuclear steam supply system and turbine generator furnished by Westinghouse Electric Corporation. The balance of the plant was designed and constructed by Virginia Power with the assistance of its agent, Stone & Webster Engineering Corporation.

The nuclear steam supply system is similar in design concept to several such systems licensed by the NRC, including Virginia Power's Surry Power Station Units 1 and 2. The containments, which house the major nuclear steam supply system components are steel-lined, reinforced-concrete structures that use dry, subatmospheric operation concepts. The containments are similar in design concept to those employed in several projects reviewed by the NRC, including Virginia Power's Surry Power Station Units 1 and 2.

Each reactor unit is designed for an initial licensed core power output of 2775 MWt (this corresponds to a nuclear steam supply system rating of 2785 MWt). This core power will result in a gross electrical output of approximately 907 MWe and a net electrical output of approximately 907 MWe with a circulating water temperature of 75° F, and a net electrical output of approximately 898 MWe with a circulating water temperature of 88° F. Each reactor is expected to be capable of

achieving an ultimate core power level of 2900 MWt (this corresponds to a nuclear steam supply system rating of 2910 MWt). This core power would result in a gross electrical output of approximately 984 MWe and a net electrical output of approximately 944 MWe with a circulating water temperature of 75° F, and a net electrical output of approximately 934 MWe with a circulating water temperature of 88° F. Although the license application is for 2775 MWt (core power), all safety systems, including the containment and engineered safety features, were designed for operation at the expected ultimate power level.

Fuel was loaded in Unit 1 in December 1977, with commercial operation commencing in June 1978. Fuel was loaded in Unit 2 in April 1980, with commercial operation commencing in December 1980. In 1986, both units were uprated to a core power output of 2893 MWt (NSSS Rating of 2905 MWt) with an expected gross electrical output of 982 MWe.

#### **1.4 SEISMIC EVALUATION METHODOLOGY**

For North Anna, the EPRI Seismic Margins Methodology (SMM) with enhancements was selected for IPEEE seismic. The guidelines for implementing this methodology are provided in GL 88-20 Supplements 4 and 5, NUREG- 1407, and EPRI NP-6041, for a focused scope plant.

#### **1.5 REPORT ORGANIZATION**

The report organization of the remaining sections is described below:

Section 2 provides a description of the Review Level Earthquake (RLE) or Seismic Margin Earthquake (SME), and the In-Structure Response Spectra (IRS) for performing IPEEE-seismic evaluations at North Anna Power Station.

Section 3 provides the results of seismic review based on EPRI Seismic Margin Methodology (SMM). The identification of the equipment listed in IPEEE SSEL is based on system analysis and derived from success path and alternate path methodologies. The Safe Shutdown Equipment List (SSEL) report, the composite SSEL, and the seismic review SSELs are provided in Appendix A. The results of IPEEE walkdowns for mechanical and electrical equipment, the screening process, and the High-Confidence-of-Low-Probability of Failure (HCLPF) capacities are provided in this section. Walkdowns to evaluate the potential for seismic induced flood, fires and other IPEEE miscellaneous issues are addressed. The miscellaneous walkdown reports are included in Appendix B. The results of walkdowns for structures, block walls, raceways, HVAC ducting, piping, and containment structural integrity are also documented in this section. The evaluation for relay chatter issues, soil liquefaction concerns, nonseismic failures and human actions and finally, coordination with other programs are also discussed in this section.

Section 4 provides plant improvement performed to date as a result of IPEEE seismic walkdowns and evaluations.

Section 5 describes the results of a peer review and the resolution of reviewer's comments. The peer review report is included in Appendix C.

Section 6 provides the summary and conclusion of the program. Issues identified for future evaluation and improvement/enhancement are also provided in this section.

The resumes of the key personnel who participated in the IPEEE - Seismic program are provided in Appendix D.

## **2. REVIEW LEVEL EARTHQUAKE**

### **2.1 REVIEW LEVEL EARTHQUAKE AND GROUND RESPONSE SPECTRUM**

As identified in NUREG 1407, the earthquake anchored to a horizontal peak ground acceleration (pga) of 0.3g with Ground Response Spectrum (GRS) shape in accordance with the median rock or soil spectral shape of NUREG/CR-0098 is designated the Review Level Earthquake (RLE) for North Anna's IPEEE (seismic) evaluations. This designation is for nuclear power plant sites in central and Eastern United States (east of the Rocky mountains) and serves to meet the objective of the IPEEE. The Rock and Soil Ground Response Spectra (GRS) for RLE are shown in Figures 2-1 and 2-2 respectively.

### **2.2 IN-STRUCTURE RESPONSE SPECTRA**

The amplification of RLE motion through the structures was computed from the NUREG/CR-0098 ground spectral shape using lumped-mass models consisting of beams and stiffness matrix elements with six degrees of freedom at each node. Time history analyses were used. Structural damping values consistent with EPRI NP-6041 SL were used. New in-structure response spectrum (ISRS) were developed for the IPEEE effort based on the NUREG/CR-0098 GRS shape anchored to 0.3g pga.

Synthetic time-histories which represent the soil and rock GRS shape were developed. They were of 20 seconds duration defined at a 0.01 second interval. The three time histories for each orthogonal direction were statistically independent. Previously existing structural models and founding conditions were evaluated and refined or recreated as necessary for the development of ISRS.

For structures founded on soil, soil structure interaction (SSI) analyses were performed. In the SSI analyses, the building models were used together with the proper impedance and scattering functions. Three SSI analyses were performed, one for each of the following conditions: lower bound, best estimate, and upper bound soil properties. The resulting spectra from the SSI analyses at each nodal point were enveloped from these three cases. An exception was the Auxiliary building where the previous method of representing soil by six soil springs was used. It is noted that the ISRS (especially the peaks and zero period accelerations) using this method are conservative when compared to the ISRS for other soil founded structures which used SSI with impedance and scattering functions.

ISRS were developed for 3% and 5% equipment damping at each elevation and each direction for each structure founded on soil or rock. These ISRS were peak broadened +15% and -15% to account for uncertainties and variabilities in structural frequencies, in accordance with EPRI NP-6041 SL. Table 2-1 identifies the structures analyzed, their founding conditions, organization that developed the ISRS, and other comments as applicable.

TABLE 2-1

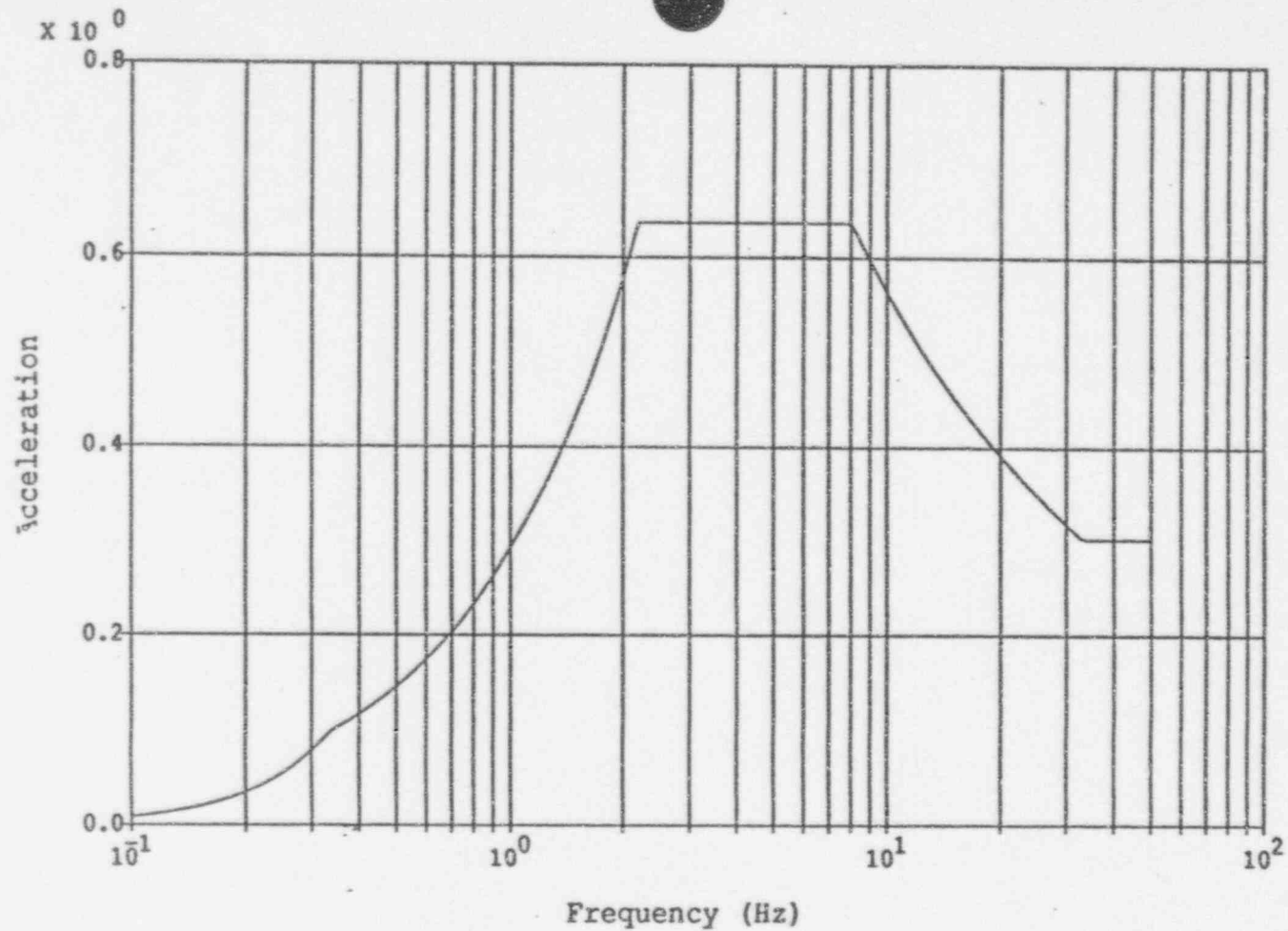
Structures for which ISRS were Developed

Structure	Founding Condition	Organization developing ISRS
Reactor Containment Internal Structure	Rock	Virginia Power
Reactor Containment External Structure	Rock	Virginia Power
Reactor Safeguards Structure	Rock	Virginia Power
Main Steam Valve House, Unit 1 (includes Quench Spray Pumphouse)	Rock	Virginia Power
Main Steam Valve House, Unit 2 (includes Quench Spray Pumphouse)	Soil	EQE International
Auxiliary Building <sup>1</sup>	Soil	Virginia Power
Service Water Pump House	Soil	EQE International
Service Water Valve House	Soil	EQE International
Service/Turbine Building <sup>2</sup>	Rock/Soil	EQE International
Auxiliary Feedwater Pumphouse	Rock	Virginia Power
Intake Structure	Soil	EQE International

<sup>1</sup> Similar to the Design Basis Analysis for DBE, spectra from synthetic time-histories anchored to 0.3g pga matched the rock GRS as defined in NUREG/CR-0098. Three translational and three rotational springs were used to represent soil.

<sup>2</sup> The building is mostly on rock, with a small portion on soil. Spectra from synthetic time-histories which were used to develop the ISRS matched the Soil GRS of NUREG/CR-0098 at 0.3g pga for this building. Deconvolution effects were found to be negligible and the building was modeled as a fixed base, surface founded structure.



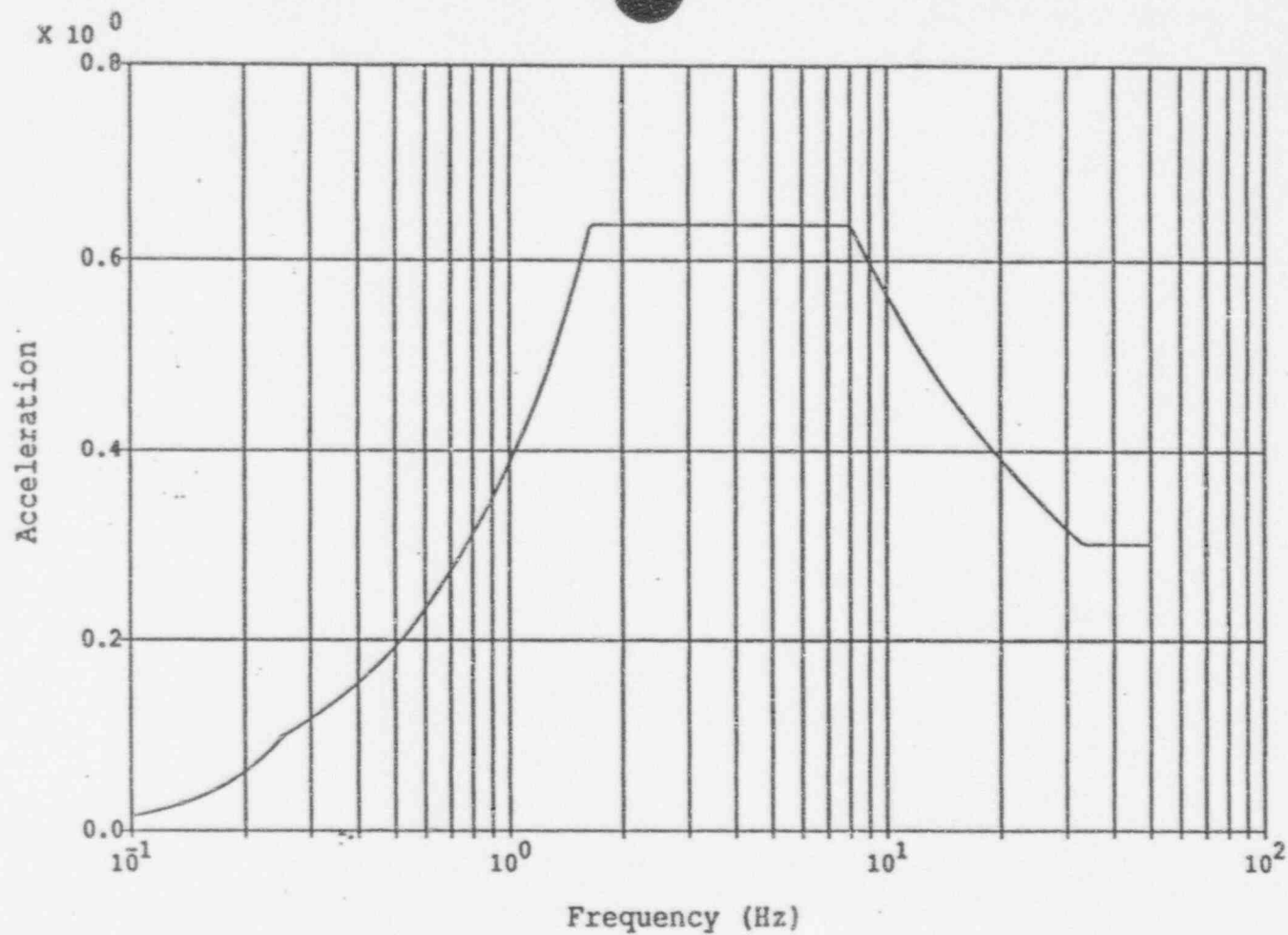


Notes:

$p_{ga} = 0.3 \text{ g}$   
 5.0 % Spec. Damping  
 Accelerations in g's

Figure 2-1

NUREG/CR-0098 Median 5% Damped Horizontal Response Spectrum - Rock



Notes:

pga = 0.3 g

5.0 % Spec. Damping

Accelerations in g's

Figure 2-2

NUREG/CR-0098 Median 5% Damped Horizontal Response Spectrum - Soil

### **3. EPRI SEISMIC MARGIN METHODOLOGY (SMM) RESULTS**

The following sections provide the results of the various aspects of the IPEEE-seismic program using the EPRI SMM methodology.

#### **3.1 SYSTEM ANALYSIS AND SUCCESS PATHS**

System evaluation to identify success paths and to select safe shutdown equipment was performed in accordance with the requirements of NUREG-1407 and EPRI report NP-6041-SL, Revision 1. A safe shutdown equipment report, MPR-1201, Revision 1, prepared by MPR Associates, Inc., contains the methodology, description and results of the system analysis and selection of the success paths and SSEL for North Anna Power Station. Since the IPEEE-seismic effort was integrated with the USI A-46 effort, the SSEL report is a combined report for both efforts. However, the report clearly identifies the criteria, methodology, and components for the IPEEE-seismic scope. It is noted that the entire USI A-46 SSEL is a subset of the IPEEE-seismic SSEL. The SSEL report, MPR-1201, Revision 1, (excluding the composite lists which have been updated, and the flow diagrams) is provided in Appendix A. Appendix A also includes the updated IPEEE composite SSEL, and the subset of this list containing components that required seismic review.

The SSEL includes 23 classes of equipment, including tanks and heat exchangers. SSEL equipment is selected for the following four functions: Reactor Reactivity Control, Reactor Coolant Pressure Control, Reactor Coolant Inventory Control, and Decay Heat Removal. In addition, systems and components required to ensure that containment can continue to perform its design function following a Seismic Margin Earthquake (SME) are included. Equipment from supporting systems was also included. Some of the more significant criteria in selecting the safe-shutdown systems were as follows:

- Safe shutdown is defined as bringing the plant to, and maintaining it in, a hot shutdown condition during the first 72 hours following an SME. Virginia Power has chosen to include additional components capable of bringing the plant to cold shutdown.
- The safe shutdown should not rely upon off-site power.
- A small (one-inch) Loss of Coolant Accident (LOCA) inside containment is postulated to occur concurrently or following an SME.
- One preferred and one alternate safe shutdown success path was chosen for seismic analysis, with one of the paths capable of accommodating a small LOCA.
- The safe-shutdown systems chosen are consistent with the normal and emergency operating procedures which are used to bring the plant to a safe-shutdown condition.

It is noted that subsequent to the preparation of the SSEL by MPR Associates, the list underwent minor revisions primarily as a result of the walkdowns by Seismic Review Teams (SRTs), but also because of additional review of systems. These revisions consisted of changes to correct the errors in the equipment class, locations, elevations etc. and also addition or deletion of a few components to/from the list. The significant revisions are identified below.

#### **P 250 Computers (1/2-EI-CB-18A,B,C)**

These cabinets were deleted from the seismic review SSEL based on a functionality review, and it was determined that the P250 computers do not need to be considered as required for safe shutdown following an SSE.

#### **Main Steam Isolation Test Valves and Service Water to Sump Isolation Valves (1-MS-SOV-101A3/B3/C3, 2-MS-201A3/B3/C3, 1-SW-SOV-110A and 2-SW-SOV-210B)**

These valves have been removed from service and are therefore deleted from the seismic review SSEL. As identified during the USI A-46 relay review, no equipment was added as a result of their removal from service.

#### **First Point Feedwater Heaters (1-FW-E-1A/1B)**

These components were deleted from the seismic review SSEL since isolation of the main feedwater flow path does not need to extend that far back into the main feedwater system. Instead, the Unit 1 feedwater regulator valves and the main regulator by-pass valves (1-FW-1478, 1488, 1498; 1-FW-1479, 1489, 1499, and the associated Solenoid Operated Valves), and the corresponding unit 2 valves were added to the SSEL.

#### **Condensate Storage Tanks (1-CN-TK-2 and 2-CN-TK-2)**

These tanks were deleted from the seismic review SSEL since they are not required for safe shutdown following an SSE. Emergency Condensate Storage Tanks (1/2-CN-TK-1), which are on the SSEL, provide the required safe shutdown function.

### **3.2 EQUIPMENT SCREENING AND CAPACITY EVALUATION**

For IPEEE-Seismic, the review of the equipment identified on the seismic review SSEL, which includes tanks and heat exchangers, was performed in accordance with EPRI NP-6041. Equipment that was reviewed is listed on the SSEL which can be found in Appendix A. For review of equipment, the approach outlined in EPRI NP-6041 is very similar to the approach developed for the resolution of USI A-46. Thus, the resolution of IPEEE-Seismic, most notably plant walkdowns, was integrated with the resolution of USI A-46.

Prior to the plant walkdowns, equipment on the IPEEE-Seismic SSEL was pre-screened if it was anticipated that the HCLPF would exceed the RLE. The purpose of the pre-screening was to enable the walkdowns to be more efficient, however, ultimately the decision as to whether components could be screened out from further review was up to the SRTs that performed the walkdowns.

It should be noted that the USI A-46 SSEL and the IPEEE-Seismic SSEL are very similar. In fact, all of the equipment of the USI A-46 SSEL is included in the IPEEE-Seismic SSEL. The additional components on the IPEEE-Seismic SSEL are the result of additional requirements such as Containment isolation. Components that were not on the USI A-46 SSEL and were preliminarily screened out, were classified as "walkby" components. "Walkby" components consisted primarily of valves and NSSS components.

Each component on the SSEL (including "walkby" components) was walked down and inspected except for a few components that were in very high radiation areas. The few components that were not walked down due to ALARA concerns were reviewed by using available drawings, installation records, and previously taken photos of the area or equipment. Each SSEL component was evaluated by a Seismic Review Team (SRT) which consisted of at least two SCEs; at least one of whom was a registered Professional Engineer. The screening evaluations performed and the details collected during the walkdowns were documented on Screening Evaluation Work Sheets (SEWS) except for the "walkby" components. It should be noted that if the SRT could not judge that the capacity of a "walkby" component exceeded the RLE or that an unusual aspect was noted, then the component was no longer classified as "walkby" and a SEWS was prepared on which details were noted for subsequent evaluation.

During the walkdowns the equipment was evaluated based on the screening criteria presented in EPRI NP-6041. The criteria are summarized in Table 2-4 of EPRI NP-6041. Since the screening guidelines presented in that table are for the capacity of the components and do not include consideration of anchorage, another important element of the walkdowns was review of the anchorage. For many components, existing documentation such as calculations and anchorage details was collected and reviewed prior to the walkdowns. If anchorage details were not available and if the capacity of the component anchorage could not be concluded to be greater than the RLE at the time of the walkdown, then the SRT prepared sketches and detailed notes of the anchorage for subsequent review.

During the walkdowns, the SRTs reviewed the potential for seismic interaction with nearby equipment, systems, or structures. All credible and significant interaction concerns were noted. If simple resolutions were possible, such as removing an adjacent unanchored component, Station personnel were informed and seismic interactions were eliminated. Typically, Work Orders were issued to correct this type of concern. Seismic concerns that could not be eliminated expeditiously were reviewed further. Several of these concerns were subsequently resolved by plant modifications. For example, a "stiff" pipe support that was adjacent to a valve operator was relocated. The details of these modifications are provided in Section 4.

SSEL equipment screened out (i.e. component HCLPF capacity concluded to be  $\geq 0.3g$ ) during the walkdown phase were assigned a HCLPF of  $\geq 0.3g$  and there was no further review of these components. After the walkdown phase, design information such as existing anchorage calculations were reviewed to determine if any of the remaining components could be screened out. Engineering judgement and USI A-46 evaluations were also utilized in this review. For components not screened out, which included the weaker and more critical components, HCLPF capacities were calculated using the Conservative Deterministic Failure Margin (CDFM) approach as outlined in EPRI NP-6041. Where appropriate, the anchorage calculations prepared for the resolution of USI A-46 were updated for IPEEE-seismic using the median centered RLE spectra to calculate the component HCLPF. Table 3.2-1 lists all mechanical and electrical equipment for which a HCLPF of less than 0.3g was calculated as well as the mode of failure. Issues requiring further evaluation identified in Section 6.1, such as seismic interaction, were excluded from the component HCLPF calculations. These issues will be resolved via modifications or further review in accordance with the schedules identified in Section 6.1.

Table 3.2-1

Summary Table of High Confidence of Low Probability  
of Failure (HCLPF) Capacities less than 0.3g

Equipment Mark Number	Equipment Description	HCLPF Capacity	Mode Of Failure
1(2)-CN-TK-1	Emergency Condensate Storage Tanks	0.16 g	Overturning moment capacity - see note below
1(2)-QS-TK-1	Refueling Water Storage Tanks	0.18 g	Overturning moment capacity
1-EP-CB-04A, B, C, D 2-EP-CB-04A, B, D	120 V Vital AC Bus	0.19 g	Anchorage
1-QS-TK-2	Refueling Water Chemical Addition Tank - Unit 1	0.19 g	Foundation Overturning
1-CH-TK-1A, B, C	Boric Acid Tanks	0.21 g	Anchorage
1-HV-AC-1, 2 2-HV-AC-8, 9	Control Room Air Conditioners	0.21 g	Anchorage
1(2)-EI-CB-21	Sequence of Events Recorders	0.22 g	Anchorage
1-EE-SW-1H, 1J 2-EE-SW-2H, 2J	4160 V Emergency Bus	0.23 g	Relay Capacity
2-QS-TK-2	Refueling Water Chemical Addition Tank - Unit 2	0.24 g	Foundation Overturning
2-EE-BKR-RTA,RTB,BYA, BYB (Cabinets 2-EI-CB- 46A,B)	Reactor Trip Breakers (Unit 2 only)	0.24 g	Anchorage
1(2)-HV-E-4A, B, C	Heating and Ventilation Chiller Units	0.27 g	Anchorage
1-BD-TV-100A,100C, 100E 2-BD-TV-200A,200C, 200F	SG Blowdown Containment Isolation Valves	0.28 g	Cast Iron Yokes
1(2)-CC-P-1A, 1B	Component Cooling Water Pumps	0.29 g	Anchorage

**Note :** The tank is unanchored, however, the tank is enclosed in a concrete missile shield which is approximately 2" away from the tank. This 2" space is filled with Rotofoam. The Rotofoam and the concrete missile shield were not considered when calculating the HCLPF.

### 3.3 NONSEISMIC FAILURE AND HUMAN ACTIONS

The issues regarding nonseismic failures and human actions were addressed in Virginia Power's submittal on "Probabilistic Risk Assessment for IPE, Final Report for NAPS Units 1 and 2", December 1992, Reference 7.16.

In regard to the nonseismic failure issue, those components and systems that were identified in the IPE report as important for core damage risk reduction, significant for risk achievement, or with high probability of failure were, in general, walked down and evaluated during the IPEEE-Seismic program. Components/systems identified as important for core damage risk reduction are, in order of significance, 1H Emergency Diesel Generator (EDG), Turbine driven Auxiliary Feedwater Pump, Loss of Unit 1 Emergency Switchgear Room (ESGR) cooling using Unit 2 ESGR chilled air, and unavailability of EDG-1J. The significant risk achievement components/failures are, in order of significance, rupture of Reactor Vessel, mechanical binding of control rods, failure of Service Water Reservoir screens, common mode failure of HHSI and LHSI systems, and faults of a 4160V or 480V bus. All the above components are part of the SSEL and have been reviewed under the IPEEE-Seismic program with the exception of reactor internals which were excluded from review in accordance with Supplement 5 of GL 88-20.

The human or operator action issue has been raised by the NRC staff during their review of some of the submittals for the USI A-46 program and the subsequent request for additional information. One of these issues was the subject regarding the circumstance, "operator actions in difficult environmental conditions". The NRC staff recognized that "... the only events that must be considered [when performing the USI A-46 Program] are the SSE and loss of offsite power. However, each licensee should consider these factors on a case by case basis and determine what, if any, other complications they do need to address." SQUG's generic response to the NRC staff is that the USI A-46 procedures provide adequate guidance to the licensees for evaluating whether operators can shutdown the plant following an earthquake, including unusual circumstances beyond those associated with normal and emergency plant operating procedures. North Anna Power Station has adequate emergency and abnormal procedures which include reliance on operator actions for safe shutdown following a seismic event. Examples include valves which require manual operation if offsite power is lost or to preclude single failure of the system, and procedural action by operators in case of possible loss of annunciator lights during strong motion of an earthquake. In addition, operator action is relied upon to reset certain contact devices or relays, such as devices in the boric acid heater circuit via a pushbutton and control room/relay room chiller restart via local pushbuttons. However, no significant increase in operator burden is expected in these cases.

### 3.4 RELAY CHATTER

An evaluation of relay chatter during the strong motion of an SSE at North Anna was performed in detail for the USI A-46 program. This evaluation included spot checking of relays for appropriate mounting during the walkdowns, and evaluation of seismic capacity and demand for essential relays.



No low ruggedness relays were discovered in the USI A-46 scope at North Anna. Therefore, since North Anna is a focused scope plant, no additional relay evaluation is required for IPEEE-seismic in accordance with NUREG-1407.

### **3.5 SOIL LIQUEFACTION**

In GL 88-20 Supplement 5, the staff concluded that the licensees of focused scope plants may eliminate the evaluation of the effects of soil related failures for IPEEE seismic. Accordingly, no soil related evaluations are included in this report.

### **3.6 SEISMICALLY INDUCED FLOOD AND FIRE AND MISCELLANEOUS ISSUES**

Plant area walkdowns were performed as part of IPEEE-seismic to review the potential for fire and flood due to a seismic event, and to address other miscellaneous issues using detailed guidance provided in EPRI NP-6041 report. Several issues, as required by NUREG 1407, were addressed via these walkdowns. Walkdowns were conducted for various areas at North Anna Power Station on September 26 & 28, 1994 (Unit 1 Inside Containment), March 29, 1995 (Unit 2 Inside Containment), and December 8, 1994 (Unit 1 & 2 Outside Containment) to address these miscellaneous IPEEE - seismic issues. Areas of the plant that contained equipment on the SSEL were walked down by the Seismic Review Teams.

The miscellaneous IPEEE - Seismic issues that were addressed during these walkdowns are:

- I. Seismic/fire interaction
- II. Seismic induced flooding
- III. HVAC ducting and supports, instrumentation tubing, and piping
- IV. Building seismic gaps, impact between structures, and building penetrations
- V. Traveling screens

A summary report of the area walkdowns listed above, including the results, is provided in Appendix B. Several of the open issues identified during the walkdowns were subsequently reviewed and have been resolved without requiring plant modifications. The remaining unresolved issues are discussed in Section 6.1. Note also, that summaries of issues in items III and IV above are further discussed in sections 3.7 and 3.8 of this report.

In addition to the issues outlined above and reviewed via walkdowns, a review was performed for NRC Information Notice 94-12. It was determined that mercury relays are present in the fire

protection control systems for the Emergency Diesel Generator (EDG) rooms. A study was performed to evaluate the operability of the EDGs following an inadvertent actuation of the CO<sub>2</sub> fire suppression system. The study concluded that the EDGs will be able to withstand a spurious release of CO<sub>2</sub> coincident with an EDG start.

### **3.7 STRUCTURES, BLOCK WALLS, RACEWAYS, HVAC DUCTING, AND PIPING**

#### **Structures**

Walkdown of structures in general indicated no seismic vulnerabilities. There were no large cutouts in floor slabs, large deflections in structural steel beams, or any significant cracks and spalling in concrete structures. There are no Seismic Class I and Seismic Class II structures adjacent to each other that could produce a potential impact in an event of Review Level Earthquake (0.3 g pga). The structures are separated with 2" rattle space in between. This rattle space is sufficient to prevent any impact of buildings during an RLE.

#### **Original Design and Analysis of Structures**

NAPS Units 1 and 2 were issued construction permits in February 1971. The station design incorporates the codes and standards that were in effect when the plant was built. The Seismic Category I structures at NAPS consists of a Reactor Containment and Containment Auxiliary Buildings, Fuel Handling Building for each unit; and the Auxiliary Building, Service Water Intake structure, Control Room, Switchgear and Relay Rooms, and Emergency Diesel generator Rooms common to both units.

Design of seismic Class I structures was based on two separate criteria, the Operating Basis Earthquake (OBE) and the Design Basis Earthquake (DBE). Acceleration response spectra for each earthquake are given for bedrock ground motion and for ground motion on soil overlying bedrock ground motion. The effect of foundation structure interaction was characterized by equivalent foundation springs attached to multi-degree-of freedom, lumped-mass models.

The response of the Containment structure and other Seismic Class I structures to the application of horizontal and vertical earthquake ground motions are established in the form of frequency response spectra for the operational and design-basis earthquake for lateral loading. The spectrum intensity for vertical loading is assigned a value of two-thirds of the horizontal intensity for both earthquake loadings. The design-basis earthquake load is .12 g for rock founded structures and .18 g for soil founded structures. According to the "Standard Format and Content of Safety Analysis Reports for Nuclear Power Plants," issued by the Atomic Energy Commission, the design-basis earthquake corresponds to the Safe Shutdown Earthquake (SSE).

The dynamic models of the Seismic Class I structures, consists of systems of generalized spring-connected lumped masses coupled to the sub-grade by springs derived from the rock or soil stiffness. The masses consist of floor, tributary walls and columns, equipment, and piping. Horizontal,

vertical, rocking, and torsional spring constants represent the subgrade. These constants were determined from consideration of the theory of elasticity relating to the rigid plates on an elastic half-space.

The Turbine Building structure adjacent to the Control Room area is designed to withstand 150-mph wind loads with roofing and siding in place. The bare steel structure, without siding and roofing, is designed to withstand 360-mph tornado wind loads without collapsing on the Control Room area. A comparison of static seismic forces with the tornado wind loadings shows that the wind loads are the controlling design loads.

In accordance with EPRI NP-6041, Table 2-4 "Summary of Equipment and Subsystems Screening Criteria for Seismic Margin Evaluation," evaluation of Category I structure is not required if the plant structure was designed for ZPA between 0.1g and 0.8g with 5% damping. NAPS falls into this category and therefore was screened out from further evaluation. Walkdowns and review of all Category I and II structures that have the potential for impacting Category I structures, systems, or components were conducted and no seismic vulnerabilities were noted. There were no large cutouts in floor slabs, large deflections in structural steel beams, or any significant cracks and spalling in concrete structures.

In conclusion, no structural seismic vulnerabilities were found that could impact the safety functions of the safe shutdown equipment.

### **Piping, Raceways, and HVAC Ducting**

Walkdown of representative piping and ducting systems in accordance with the requirements of EPRI NP -6041 were conducted. These walkdowns are documented in Appendix B. No seismic vulnerabilities were noted during the walkdown except in the Turbine building, which is addressed in Section 6.1. Where the piping had expansion joints it was adequately supported to ensure that the expansion joints will not be over stressed caused by relative displacement due to RLE load. Existing pipe stress calculations were reviewed to verify that the displacements at the expansion joints were within the allowable limits for review level earthquake loads. Adequate support flexibility exists for buried piping to accommodate relative displacement motion due to potential settlement and gaps between the soil and the structure.

Walkdown of piping systems did not indicate any inadequate piping flexibility or flexible supports. The branch piping routing and supports and the primary and secondary piping connections to equipment nozzles indicated that there was adequate flexibility in piping systems. Piping systems were found to have no mechanical friction-type connections. Possibility of impact of valve operators have been evaluated and documented. Where the impact evaluation could not be completed it has been identified as an unresolved outlier for future disposition. There are only a few of these concerns noted and it was determined that these are not safety concerns but resolution of these concerns will enhance the seismic capability of the piping systems.

The piping going through containment penetrations were reviewed to verify if there is sufficient flexibility. The containment external and internal structures are attached to the same foundation, however, these are separate super structures. All of the piping appeared to have adequate flexibility in this area.

On a sampling basis, the cable trays and conduits were walked down and there were no structural vulnerabilities noted. In addition conduits and cable trays that span the building gaps were reviewed and, in general, these appeared to have adequate flexibility to accommodate the relative building seismic motions.

The HVAC ducting appears well supported with the supports typically being seismically designed in safety related areas of the plant (i.e., Auxiliary Building, Containment Building, Main steam Valve House, Safeguards Building, etc.). Additionally in non-seismic areas such as the Turbine Building, the ducting was rod hung, however, supports were adequately spaced to prevent major failures. At some locations it is expected that the ducting will exhibit significant displacements during an earthquake. Catastrophic failure of the ducting is not thought possible, however, tearing of the sheet metal, primarily at section connections, might be expected. Leakage may occur at these locations. A review of impact of HVAC duct leakage will be performed.

### **Masonry Block Wall Evaluation**

During the IPEEE- Seismic walkdown of masonry block walls at NAPS, proximity effects of the walls with Safe Shutdown Equipment were noted, and HCLPF calculations were performed for the bounding case walls. North Anna Power Station (NAPS) has non-reinforced walls constructed of concrete blocks. These walls were previously evaluated to determine their ability to withstand the plant design basis seismic event in response to USNRC I & E Bulletin 80-11. Each wall was categorized into one of the three classes : Class I, Class II, and Class III. The failure of walls in Classes I and II could affect safety related equipment, while the failure of Class III walls will not. Only Class I and II walls were seismically analyzed as per the requirements of I & E Bulletin.

Those Class I & II walls whose failure will not affect equipment included in IPEEE were screened out of further evaluation. Conversely, Class III walls that may affect IPEEE equipment that are not safety-related were included in the IPEEE evaluation.

For the NAPS SMA, block wall High Confidence of a Low Probability of Failure (HCLPF) capacities were calculated following the Conservative Deterministic Failure Margin (CDFM) approach as identified in EPRI NP-6041 - SL , Revision 1 , document.

### **Class I and II Walls Selected for Walkdown**

A total of 56 Class I and II block walls were evaluated for the previous 80-11 program. 22 walls out of the 56 walls with factor of safety (design basis evaluation) less than 1.5 were selected for walkdown and further evaluation, if required.

### **Class III Walls Selected for Walkdown**

A walk-by of all Class III walls was performed. Those Class III walls which could impact IPEEE equipment were identified in the walkdown. Out of these, 5 walls were selected as bounding Class III walls for detailed walkdown, as shown in Table 3.7-2.

### **Results of Walkdown**

Out of 22 walls selected for walkdown, 2 were inaccessible due to high radiation, 2 had been removed, 5 were found not to affect any IPEEE equipment hence were screened out. The remaining 13 walls are listed in Table 3.7-1.

The class III walls selected for walkdown are shown in Table 3.7-2.

TABLE 3.7-1

## Class I and II Masonry Walls

Wall I.D.	Hollow/ Solid	Thickness	Height	Width	Design Basis Factor of Safety
AB-259-8A	S	12"	5'-6"	17'-6"	1.0
AB-259-12	H	8"	12'	23'	1.26
AB-291-8	S	18"	8'-03/4"	15'-6 3/4"	1.09
AB-291-9	S	18"	8'-1"	14'-8"	1.15
AB-291-18	S	18"	8'-1 3/4"	11'-0"	1.17
AB-291-18A	S	18"	8'-1 3/4"	14'- 6 3/4"	1.17
AB-291-22	S	18"	8'-1"	8' -8 3/4"	1.23
SB-254-4	H	12"	18'-9"	48'-8"	1.3
SB-254-8	H	12"	10'-3 1/2"	8'-2"	1.46
SB-271-4	H	8"	15'-3"	29'-0"	1.25
SB-271-6	H	8"	15'-3"	11'-0"	1.49
AB-244-16'	S	12"	7'-6"	5'-0"	1.34
AB-244-15'	S	12"	7'-6"	5'-0"	1.35

## Notes:

1. All the walls except for the (5) 18" thick walls are single wythe. 18" walls have 3 wythes (6" blocks).
2. The two walls which were inaccessible due to high radiation are AB-244-15 and AB-244-16. Both are identical 12" solid walls whose analytical parameters are bounded by wall AB-259-8A, which has a lower Factor of Safety based on the I & E Bulletin 80-11 calculations.

TABLE 3.7-2

Class III Masonry Walls

Wall I.D.	Thickness	Height	Width
SB-271-17	8"	10'-8"	48'-0"
SB-271-85	8"	6'-0"	6'-8"
SB-286-1	12"	18'-0"	26'-8"
SB-294-3	12"	11'-4"	28'-0"
Turbine Building Walls	8"	11'-0"	26'-0"

Wall # SB-286-1 was screened out in the field since it does not impact any IPEEE equipment. All the walls are made of hollow blocks and are single wythe.

**Block walls selected for bounding calculation**

- (1) AB-259-8A : I & E Bulletin 80-11 calculation indicated a safety factor of 1, hence this was selected for evaluation.
- (2) AB-291-8 : This wall bounds the capacity of AB-291-9, AB-291-18, AB-291-18A, and AB-291-22. These are all 18" walls of height 8.1' located around the charcoal filters.
- (3) SB-254-4 : This wall and SB-254-8 were grouped together since both are 12" thick hollow walls. SB-254-4 was selected for evaluation because of lower Factor of Safety
- (4) SB-271-4 : This wall has the lowest Factor of Safety of all the 8" thick hollow Class I and II walls which include AB-259-12, and SB-271-6.
- (5) SB-271-17 : This wall was selected as the bounding Class III block wall based on (a) Highest height/thickness ratio, and (b) Horizontal span.

The results of evaluation of the above five groups of block walls are provided in Table 3.7-3.

TABLE 3.7-3

Masonry Wall Groups

Group	Walls	Construction	Class	Bounding Wall	SMA HCLPF (g)
1	AB-259-8A AB-244-15 AB-244-16	12" solid block	I/II	AB-259-8A	> 0.3
2	AB-291-8 AB-291-9 AB-291-18 AB-291-18A AB-291-22	18" thick 3 Wythe, 6" solid block	I/II	AB-291-8	> 0.3
3	SB-254-4 SB-254-8	12" hollow block	I/II	SB-254-4	> 0.3
4	AB-259-12 SB-271-4 SB-271-6	8" hollow block	I/II	SB-271-4	> 0.3
5	SB-271-17 SB-271-85 SB-294-3 Turbine Building Walls	8" and 12"	III	SB-271-17	= .21



### 3.8 CONTAINMENT INTEGRITY

The main objective of the Containment analysis is to identify seismic vulnerabilities that involve early failure of containment functions. This includes consideration of Containment integrity, Containment isolation, and other Containment functions.

The guidance provided in NUREG -1407 states that "generally, containment penetrations are seismically rugged; a rigorous fragility analysis is needed only at review levels greater than 0.3g, but a walkdown to evaluate for unusual conditions (e. g., Spatial interactions, unique penetration configurations) is recommended. An evaluation of the backup air system of the equipment hatch and personnel lock that employ inflatable seals should be performed at all review levels. Also, some penetrations need cooling, and the possibility and consequences of a cooling loss caused by an earthquake should be considered". With regard to containment systems, NUREG -1407 indicates that "seismic failures of actuation and control systems are more likely to cause isolation system failures and should be included in the examination." The major concern deals with relay chatter, which is addressed in USI A-46 submittal. Since there were no bad actor relays that were found at North Anna, the relays are not a concern.

Based on the above guideline in NUREG -1407, the containment performance assessment is involved in screening of the following items:

- **Containment structural integrity**
- **Containment penetrations, access openings and their Seals**
- **Containment cooling systems**

#### CONTAINMENT STRUCTURAL INTEGRITY

A review of seismic capacity of Surry Power Station containment structure was performed and documented in NUREG - 1150. Containment at NAPS is similar in design and construction and has a lower ground acceleration than Surry Containment (.12 vs .15g ) and is expected to have a seismic capacity far above the review level earthquake.

##### **Hydrogen Recombiners**

The Hydrogen Recombiners were walked down and no adverse concerns were noted.

#### CONTAINMENT PENETRATIONS, ACCESS OPENINGS AND THEIR SEALS

Penetrations are used to carry piping, mechanical systems, and electrical services through the containment walls. These penetrations are classified as follows :

## 1. Piping Systems

Two basic types of penetrations are used for piping systems:

- a. **Unsleeved** - These penetrations consist of piping installed through the containment wall without a sleeve around the outside of the piping. Unsleeved penetrations are used for cold piping systems when only one pipe passes through the penetration.
- b. **Sleeved** - These penetrations have a sleeve around the outside of the piping. Sleeved penetrations are used for all closely spaced piping systems passing through one penetration and for all heated piping systems, both single and multiple. Typical piping penetrations are shown in Figure 3.8-1 (UFSAR Figure 3.8-12). No concerns were noted as a result of the walkdown.

## 2. Mechanical System Penetrations

**Fuel transfer tube enclosures** - A fuel transfer tube enclosure is provided for the fuel transfer tube, which connects the refueling canal in the containment structure and the spent-fuel pit in the fuel building. The penetration consists of a stainless steel pipe installed inside a sleeve, as shown in Figure 3.8-1. The outer pipe is welded to the containment liner, and compensates for any differential movement between the two end points and between the two pipes. The outer pipe, called the enclosure, has provisions for Freon gas leak-testing of all welds essential to the integrity of the penetration. Piping on both sides are supported to adequately protect the portion of the piping between the Containment isolation valves during seismic and small break LOCA events, in order to maintain Containment integrity.

## 3. Electrical Service Penetrations

There are approximately 120 electrical penetrations through containment. They are spaced 2 ft apart on centers, in an arrangement shown in Figures 8.8-2 and 8.8-3 (UFSAR Figures 3.8-13 and 3.8-14). Penetrations used for redundant channels are separated by at least one other penetration and, hence, are a minimum of 4 ft apart. The reactor containment side penetrations are separated from piping penetrations by a checkered plate platform. Protection against internal missiles is provided by 1) separation of redundant vital components, 2) use of missile shielding, 3) location and orientation of potential missile sources, and 4) conservative design of pressurized components that may become missile sources. The penetration area of the main Containment is separated by the crane wall, which is designed to provide missile protection for components outside the crane wall.

The electrical penetrations are shown in Figure 3.8-4 (UFSAR Figure 3.8-15), and generally consist of an 8-in, or 12-in, steel sleeve with bolted-on flanges. The penetrations are of three basic types: 1) medium voltage, 2) triax, and 3) low voltage, control, and instrumentation. The medium voltage type consists of a sleeve with a flange at each end and bushing for connections. The triax type is a canister consisting of a flange on the cable vault side through

which passes the connector for the triax cable and a moisture-resisting connector that is supported on the containment side. The remaining types are canister type, with one flange on the cable vault side through which pass conductors embedded in a resilient matrix encased in compression fittings. Tests were performed in the factory and at the site after installation to ensure complete leak tightness.

Each penetration is held in place with bolts that draw each flange against a sealing "o" ring. An electrical connector may be replaced, if necessary, without welding or cutting of the containment liner or sleeve.

Connections for pressurizing each electrical penetrations, and a pressure gauge for monitoring the degree of pressurization, are provided. During plant operation, the penetrations will normally be pressurized a few psi above atmospheric. The pressurization and pressure gauge installations assist in the early detection and repair of a leaking penetration.

Electrical penetrations meet the requirements of IEEE 317-1971, "IEEE Standard for Electrical Penetrations Assemblies in Containment Structures for Nuclear Fueled Power Generating Stations," with the exception of the installation leak test, which is performed in accordance with the requirements of 10CFR50 Appendix J.

#### 4. Access Openings and their Seals

The containment structure consists of the following access openings :

- a. **Equipment hatch** - The equipment hatch is mounted in the containment wall, as shown in Figure 3.8-5 (UFSAR Figure 3.8-16). This hatch has an inside diameter of 14 ft 6 in. It is equipped with one hatch cover mounted on the inside of the containment structure.

The hatch cover is double gasketed with a leakage test tap between the "o" rings. The enclosed space between "o" rings can be pressurized to containment design pressure to test for leakage when the access door is bolted in place.

- b. **Personnel air lock** - A personnel air lock is installed for entry into the reactor containment structure. The personnel air lock has an inside diameter of 7 ft 0 in., with hatch covers at both ends. It is installed in the containment wall as shown in Figure 3.8-5 (UFSAR Figure 3.8 -16). Each closure head is hinged and double gasketed with a leakage test tap between the "o" rings. The enclosed space between the "o" rings can be pressurized to containment design pressure for leakage through access door when it is locked in place. The personnel air lock can be independently pressurized up to containment design pressure for testing.

NUREG -1407 mentions that the hatches that use inflated seals is one potential area for concern. The seals in the containment hatches at North Anna do not use this type of seals.

- c. **Dome ventilation opening** - A dome ventilation opening for use during construction is installed at the apex of the containment structure, as shown in Figure 3.8-6 (UFSAR Figure 3.8-6). The dome ventilation opening has a hatch cover located on the outside of the containment, and is filled with concrete. The welded upper closure plate protects the opening itself from inclement weather. This opening is primarily for use during the construction period.

A walkdown of all the containment penetrations were conducted and no vulnerabilities were noted. In addition, all containment penetrations and liner are required to be inspected periodically in accordance with the newly approved ASME Section XI, Subsection IWE requirements. This requirement has been endorsed by NRC and is published in the Federal Register (61 F 41303). The first period Containment inspection in accordance with this IWE requirements is required to be completed within 5 years from the date of its publication in the Federal Register, September 1996. This periodic inspection of the Containment further ensures that the Containment integrity will be maintained.

## **CONTAINMENT COOLING SYSTEMS**

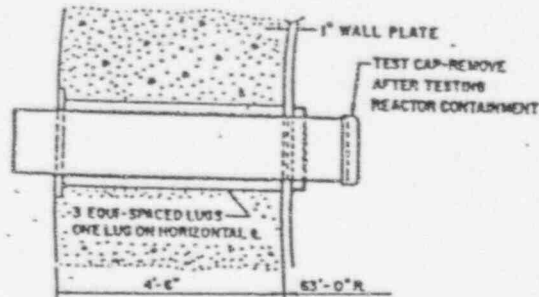
There is some concern identified in NUREG - 1407 regarding the possibility and consequences of cooling loss in penetrations caused by an earthquake that is present in some designs. North Anna Power Station does not use air or Nitrogen systems, and does not have a concern for cooling loss in the penetration cooling systems.

## **CONCLUSION**

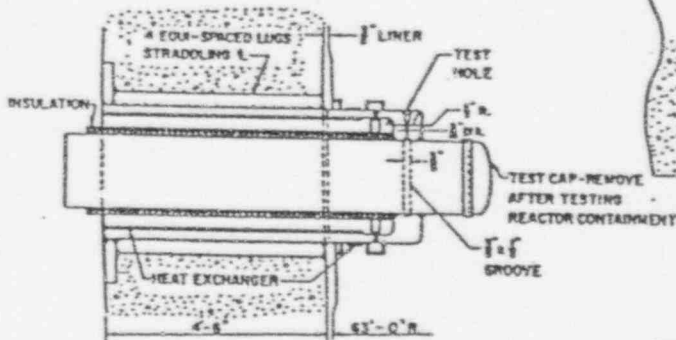
The Containment walkdown consisted of looking at and evaluating unusual conditions or configurations (e.g., spatial interactions, unique penetrations, piping and instrumentation tubing, and any other suspect areas). The Containment walkdown performed by the SRTs noted no concerns. Appendix B provides a summary report of the walkdowns.

Figure 3.8-1

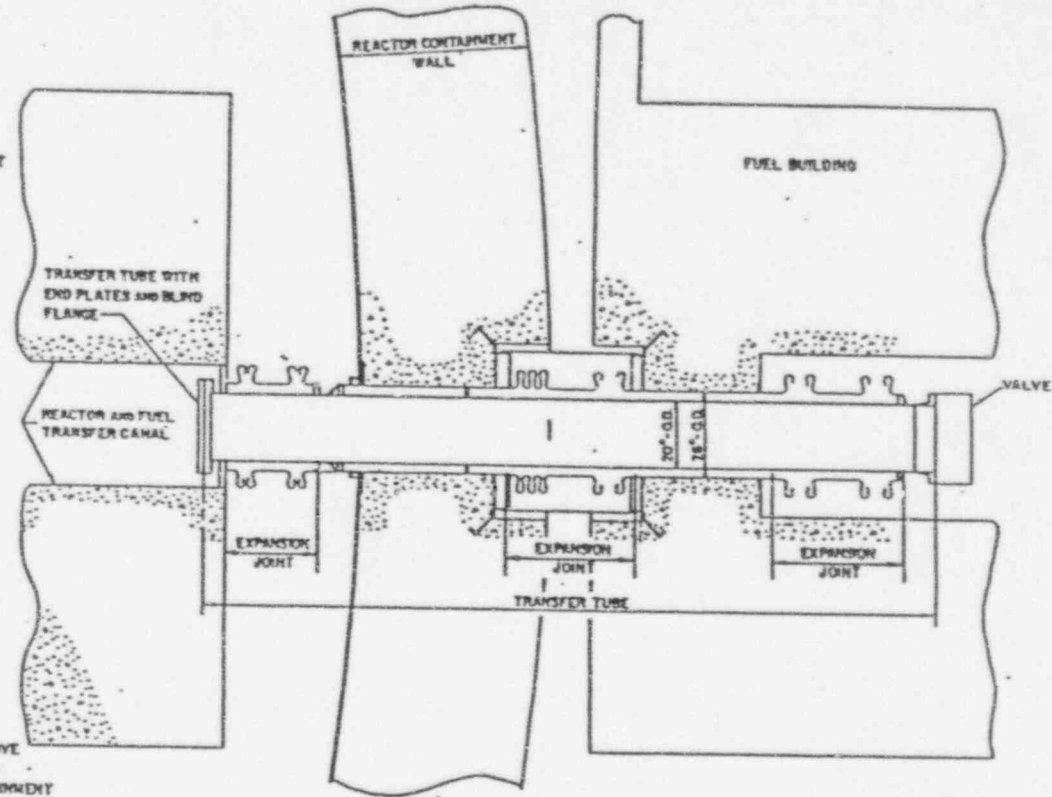
RAPS UFSAR Figure 3.8-12



TYPICAL COLD PIPE PENETRATIONS



TYPICAL HOT PIPE PENETRATION



PLAN - FUEL TRANSFER PENETRATION

MATERIAL NOTES

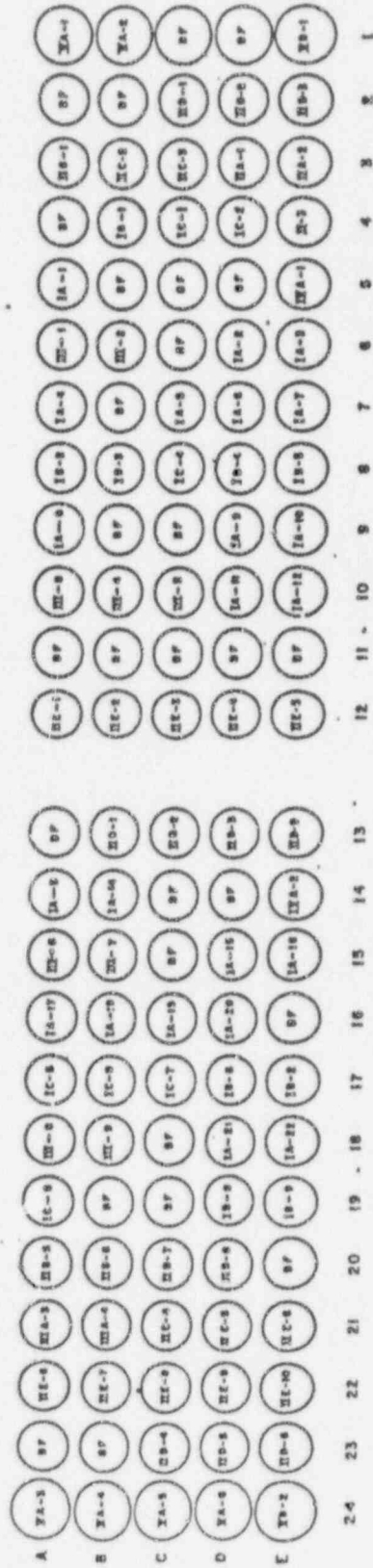
- CARBON STEEL R. - ASTM - A516 - GR60
- CARBON STEEL FORGINGS - ASTM - A350 - GR LF1
- CARBON STEEL PIPE - ASTM - A333 - GR6
- CARBON STEEL PIPE SLEEVES - ASTM - A333 - GR3 OR ASTM - A516 - GR60
- STAINLESS STEEL FORGINGS - ASTM - A 27 - F304
- STAINLESS STEEL PIPE - ASTM - A312 - TYP 304
- STAINLESS STEEL TUBING - ASTM - A269 - TYP 304
- BOLTS - ASTM - A193 - B7
- NUTS - ASTM - A194 - 2H

WELDING ELECTRODES

- CARBON STEEL TO CARBON STEEL - ASTM - E7018 OR APPROVED EQ.
- STAINLESS STEEL TO STAINLESS STEEL - ASTM - E308
- CARBON STEEL TO STAINLESS STEEL - ASTM - E309

TYPICAL PIPING PENETRATIONS

NORTH ANNA POWER STATION  
UNITS 1 AND 2

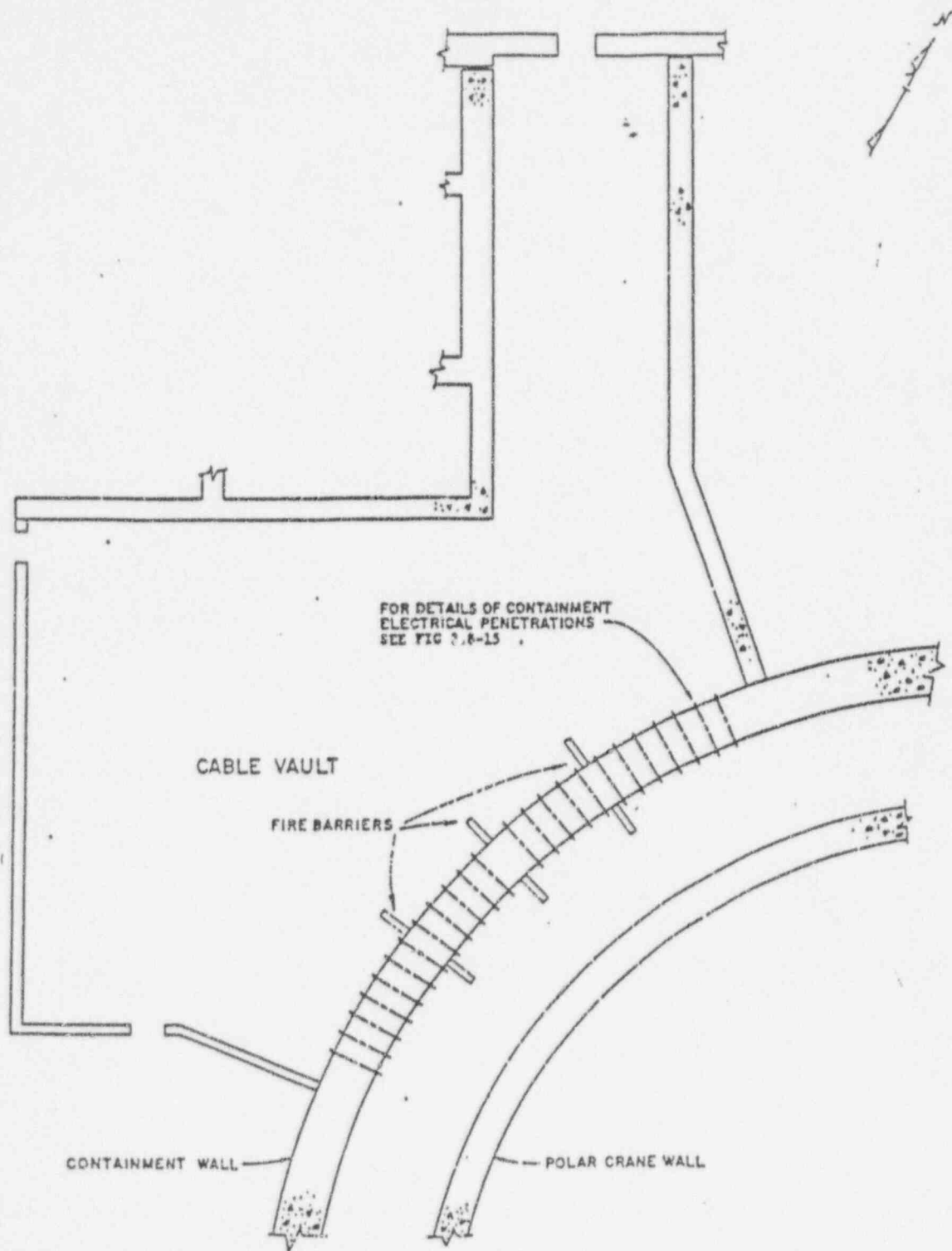


ELEVATION  
CAELE VAULT SIDE

TYPE	SERVICE
I	INSTRUMENTATION AND CONTROL - 480V
II	LOW-VOLTAGE POWER - 480V
III	NUCLEAR INSTRUMENTATION - 3000V
IV	THERMOCOUPLES
V	4 KV MOTORS

LEGEND  
A-1, A-2, A-3, ETC. = PENETRATION NUMBER  
BF = BLANK FLANGE

PHYSICAL LOCATION ASSIGNMENTS  
OF ELECTRICAL PENETRATIONS  
NORTH ANNA POWER STATION  
UNITS 1 AND 2



FOR DETAILS OF CONTAINMENT ELECTRICAL PENETRATIONS SEE FIG 3.8-15

CABLE VAULT

FIRE BARRIERS

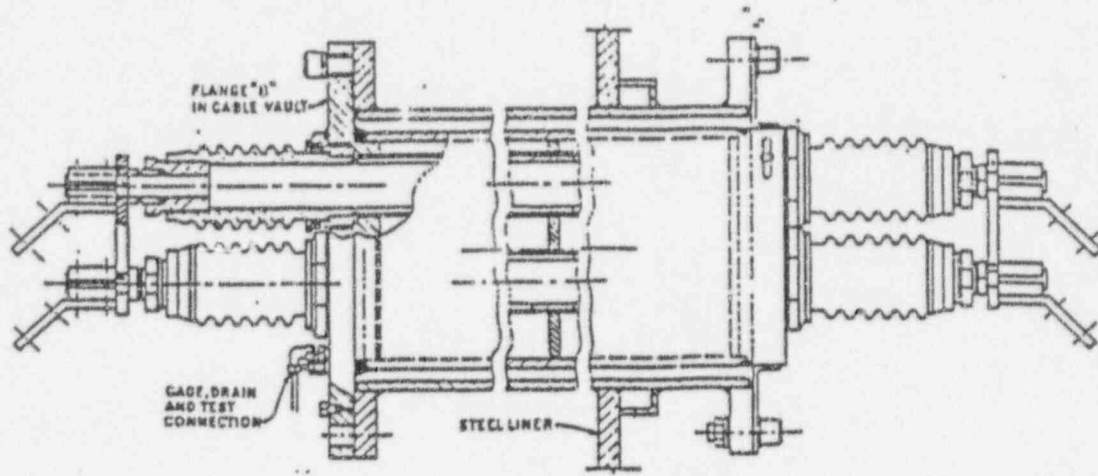
CONTAINMENT WALL

POLAR CRANE WALL

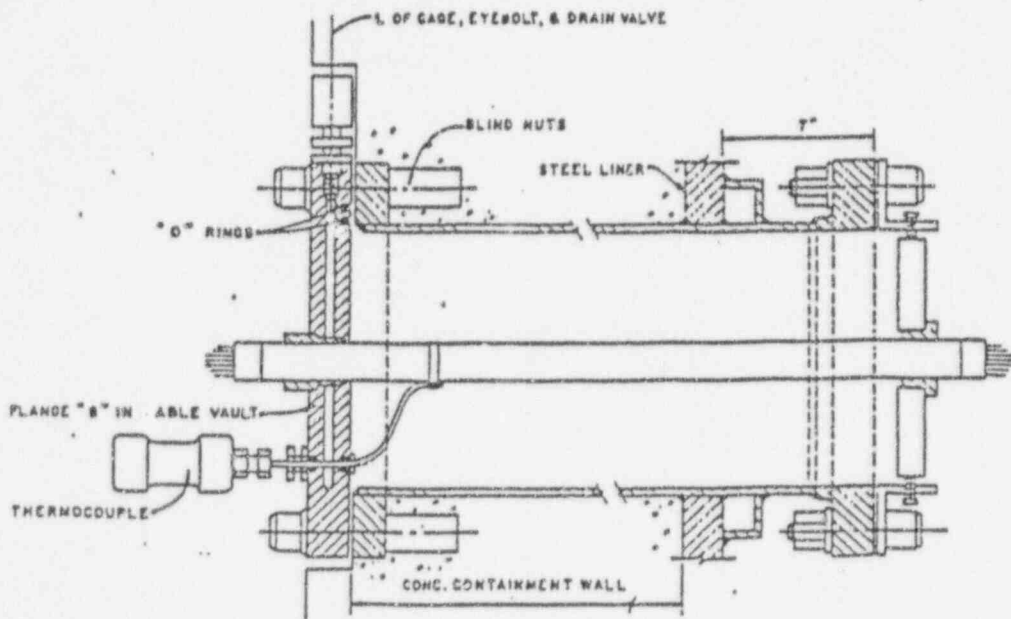
0 5 10 15  
SCALE- FEET

REACTOR CONTAINMENT ELECTRICAL PENETRATIONS AREA

NORTH ANNA POWER STATION  
UNITS 1 AND 2



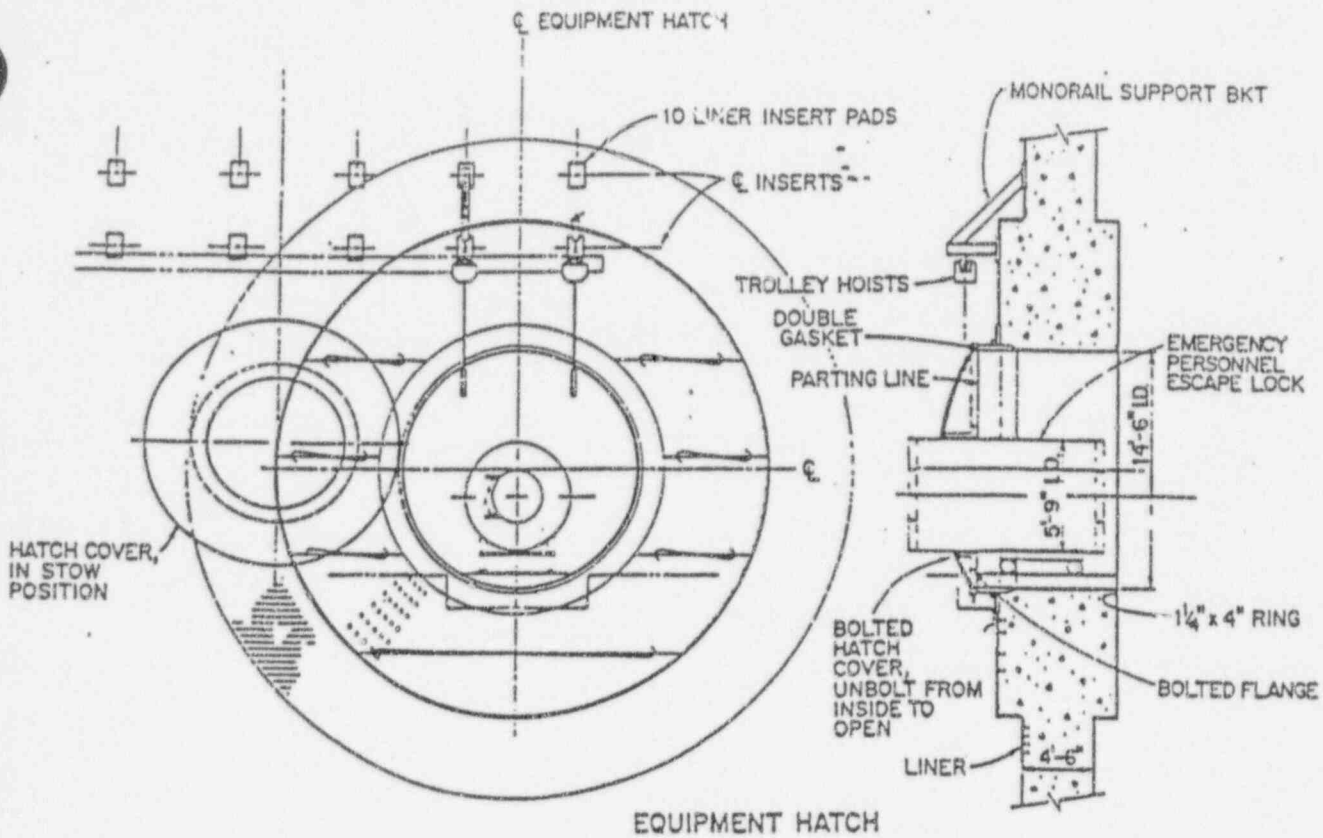
MEDIUM VOLTAGE TYPE



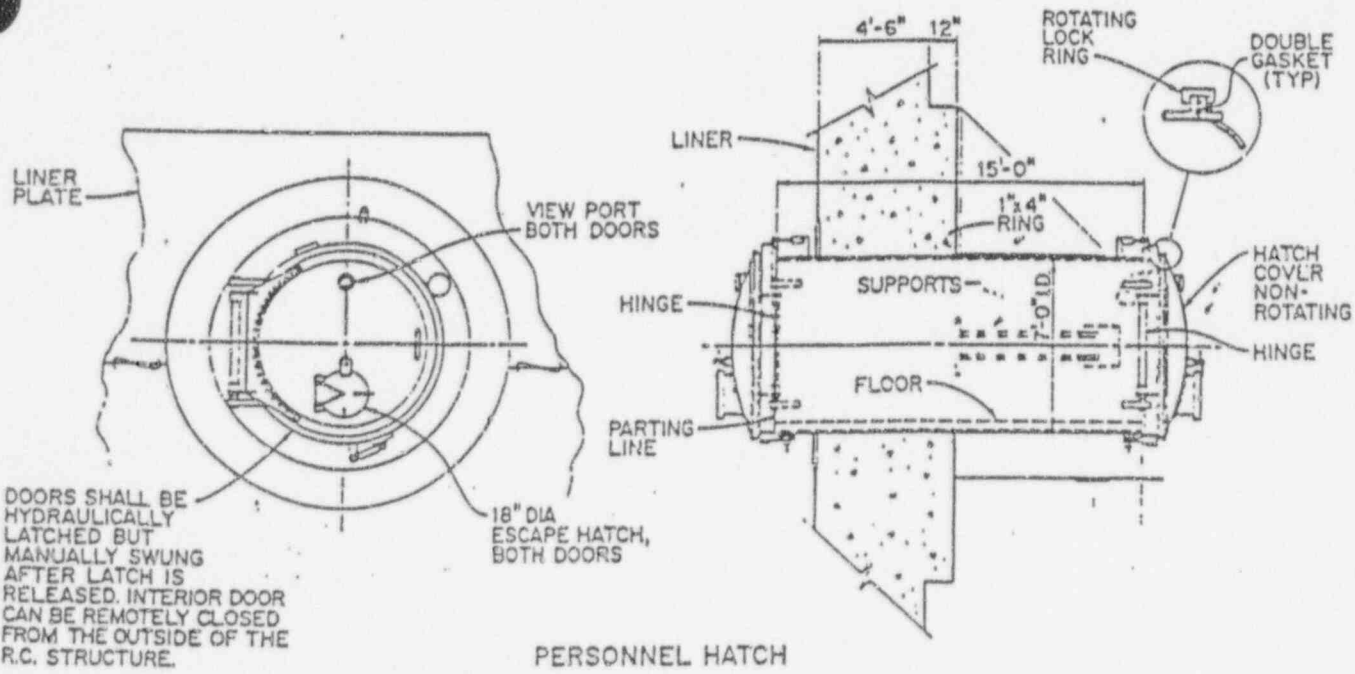
LOW VOLTAGE TYPE

ELECTRICAL PENETRATIONS  
NORTH ANNA POWER STATION  
UNITS 1 AND 2





EQUIPMENT HATCH



PERSONNEL HATCH

DOORS SHALL BE HYDRAULICALLY LATCHED BUT MANUALLY SWUNG AFTER LATCH IS RELEASED. INTERIOR DOOR CAN BE REMOTELY CLOSED FROM THE OUTSIDE OF THE R.C. STRUCTURE.

PERSONNEL AND EQUIPMENT HATCH ASSEMBLIES  
NORTH ANNA POWER STATION  
UNITS 1 AND 2



### 3.9 COORDINATION WITH OTHER PROGRAMS

The following programs are identified in NUREG-1407 and subsumed in the IPEEE:

(1) **USI A-17, "Systems Interactions in Nuclear Power Plants"**

These concerns are regarding the interaction of various systems with regard to whether actions or consequences could adversely affect the redundancy and independence of safety systems. The evaluation of system interactions related to internal events and internal floods is included in the IPE (GL 88-20). The evaluation of spatial system interaction under seismic conditions is subsumed within the USI A-46 submittal, and in this submittal.

(2) **USI A-40, "Seismic Design Criteria"**

This issue investigates selected areas of the seismic design process. The concern for the seismic capacity of safety-related above ground tanks due to SSE is included in the USI A-46 submittal, and in this submittal for the RLE.

(3) **GI-131, "Potential Seismic Interaction Involving the Movable In-Core Flux Mapping System Used in Westinghouse Plants"**

This concern was identified because portions of the in-core flux mapping system that have not been seismically analyzed are located directly above the seal table. Failure of this equipment during a seismic event could cause multiple failures at the seal table and could produce an equivalent small-break LOCA. North Anna has the Movable In-core Flux Mapping System and it is a Westinghouse Plant. A walkdown of this system was performed, and it was noted that there is a provision for restraining this system during plant operation. A station procedure IMPC-C-1-IC-07 is in place which requires that this movable system shall be restrained during the operation of the plant. The equipment is restrained with floor mounted brackets which are located on either side of the equipment. Subsequent to the walkdown, a review was performed of the restraint/anchorage and it was concluded that the HCLPF of the restraint is greater than 0.3g.

(4) **USI A-45, "Shutdown Decay Heat Removal Requirements"**

This issue has the objective of determining whether the decay heat removal function at operating plants is adequate and if beneficial improvements could be identified. The decay heat removal issue is addressed by the fact that SSEL contains the equipment necessary to maintain heat removal for a period of 72 hours.

(5) **The "Eastern U.S. Seismicity Issue" (formerly the Charleston Earthquake Issue)**

This issue is subsumed under the IPEEE-seismic program and no further evaluation is required.

#### 4. PLANT IMPROVEMENTS

As a result of the IPEEE-Seismic walkdowns, several issues/outliers not meeting EPRI NP-6041-SL caveats and/or criteria were determined. These issues were resolved by analysis and where needed, by performing modifications (including those for USI A-46) to improve the seismic capacity of components and plant. The resolved issues/outliers are grouped by Electrical/Mechanical components, Tanks and Heat Exchangers, and Supporting Components (i.e. Cable Trays and Conduits). Listed below are the resolved issues/outliers which required modifications to improve their seismic performance. Issues resolved by analyses are not included in this section.

#### 4.1 ELECTRICAL AND MECHANICAL EQUIPMENT

Issues not meeting the established screening criteria of Appendix F of EPRI NP-6041-SL were resolved. In several cases, the resolution required modification. Table 4-1 below provides the list of the resolved issues/outliers for Electrical/Mechanical components which required modifications.

**Table 4-1**

**Resolution of Issues/Outliers Resulting in Modifications**

ITEM NO.	CLASS	MARK NUMBER	DESCRIPTION OF ISSUE/OUTLIER	RESOLUTION
1	01	1-EP-MC-21,22 2-EP-MC-21,22 2-EP-MC-50,51	Motor Control Centers (MCC) contain essential relays, causing interaction between cabinets, and in some cases, with the adjacent wall	MCCs were connected to each other or to the wall, as required, by DCP 95-017
2	04	1-EE-ST-1H, 1J 1-EE-ST-1H1, 1J1 2-EE-ST-2H,2H1	Transformer mounting nuts were found loose and required tightening	Transformer mounting nuts were tightened
3	07	1-GN-PCV-125A-3, 125B-3	Loose nuts attaching PCV's to baseplates were found	Nuts tightened per station issued Work Orders
4	07	2-RC-PCV-2455C	Seismic interaction concern with adjacent structure	DCP 94-012 corrected interaction concerns
5	08B	2-RC-SOV-2455C-1,2	Seismic interaction with adjacent SOV's	Interaction resolved per DCP 94-012

Table 4-1 (Continued)

ITEM NO.	CLASS	MARK NUMBER	DESCRIPTION OF ISSUE/OUTLIER	RESOLUTION
6	08B	2-RC-SOV-2456	Seismic interaction with adjacent SOV's	SOV was replaced with Nuclear Grade ASCO and fixed to prevent interaction
7	10	2-HV-AC-9	One anchor bolt missing on 2-HV-AC-9	Missing anchor bolt installed on 2-HV-AC-9.
8	16	1-VB-1-04	Transformer was missing two bolts	Missing Bolts replaced
9	20	1(2)-EI-CB-23A,B,C 1-EI-CB-44 1(2)-EI-47A,C,E,F 1-EP-28A,B,C,E,F,G,H,J 2-EP-28A,B,E,F 1(2)-EP-48A 1(2)-EI-64A,B	All Cabinets contain essential relays and were not attached to adjacent cabinets, therefore were interaction outliers due to essential relays	All cabinets connected together by DCP 93-015-3.
10	7	1-BD-TV-100H	During the field walkdown of Steam Generator Blowdown valves inside Containment, it was noted that these valves have long operator in the horizontal direction and are heavier than the valves in the seismic data base. These valves were analyzed and it was found that the valve operator yoke ( cast iron) stress will exceed the allowable if the yoke was oriented such that the operator dead load bending stress was along the yoke weak axis. The valve operator yoke strong axis for 1-BD-TV-100H was found to be oriented at 45 degrees. The evaluation indicated that the yoke stress during a seismic event will result in low seismic capacity for this valve.	An Engineering Transmittal CEM-95-049, Rev. 0 was written to reorient the yoke such that the operator dead load bending stress is along the yoke strong axis. The valve was rotated, leading to a higher seismic capacity. The transmittal also indicated that a procedure be written to ensure that the operator yoke orientation is maintained correctly at all times.

**Table 4-1 (Continued)**

ITEM NO.	CLASS	MARK NUMBER	DESCRIPTION OF ISSUE/OUTLIER	RESOLUTION
11	23	1-ND-IIST*	Support rack for Incore Thimble guide tubes above seal table was found not welded to frame.	The issue was corrected per Work Order No. 159918.

## 4.2 TANKS AND HEAT EXCHANGERS

The tanks and heat exchangers included in the SSEL were evaluated in accordance with the guidelines of EPRI NP-6041 SL.

A total of 110 tanks and heat exchangers in the SSEL were evaluated, including the rule-of-the-box items. The evaluation of tanks and heat exchangers was performed by screening and analysis, and HCLPF values were calculated for the weaker and critical components. Modifications of the anchorage/support of three tanks - Component Cooling Surge Tank (1-CC-TK-1) - which serves as a make-up tank to Units 1 and 2, and Steam Generator Blowdown Tanks (not in the SSEL), were required. The details of these modifications are discussed below.

### **Component Cooling Surge Tank (1-CC-TK-1)**

The tank is a 7'-6" diameter x 10'-6" high cylindrical overhead steel tank supported on four W6x20 column legs at elevation 298', in the auxiliary building, Unit 1. The tank is common to Units 1 and 2. The tank was originally designed by Stone & Webster Engineering Corporation (SWEC). An evaluation of the tank support legs concluded that the existing supports did not meet the plant design basis. Further evaluation and necessary hardware modifications to the supports have been performed via Design Change Package (DCP) 96-020 to meet the design basis with ample of margin. A HCLPF calculation was performed on the tank with the modified supports and anchorage, and the capacity was found to be greater than 0.3g.

### **Steam Generator Blowdown Tanks (1/2 - BD-TK-1)**

During the field inspection of Component Cooling Surge Tank (1-CC-TK-1) which is in the SSEL, similarly supported Steam Generator Blowdown (SGBD) tanks (1 and 2 -BD-TK-1) were identified. The evaluation of Surge Tank supports had indicated that the tank supports would fail during a seismic event with tank filled with water. SGBD tanks are not safety related and they are not in the SSEL. However, the failure of these tank legs would impact the safety related systems in the collapse envelope of the tanks. The tank supports were evaluated and found that they would fail during a seismic event with the tank filled with water. The tank supports were therefore modified

to ensure the structural integrity of the supports during a seismic event. The tank support legs were modified under DCP 94-010.

### 4.3 CABLE AND CONDUIT RACEWAY SYSTEMS

In accordance with Section 5.2 of the Generic Implementation Procedure (GIP) for the resolution of USI A-46, and the IPEEE guidelines, the outliers in this group are classified as not meeting inclusion rules, seismic performance concerns, or not meeting the Limited Analytical Review process. As a result of the walkdowns of Cable tray and Conduit Raceway Systems, several issues/outliers were identified and categorized. Those which were resolved via modification are listed below.

- 1) Cable tray splice connection plates were missing in 12 cable trays at different elevations in the annulus of the Unit 1 containment. The cable trays were, however, adequately supported so that they could continue to perform their function during a seismic event. Work Requests 8458 and 8501 were issued and these splice plates have since been installed.
- 2) Vertical cable tray cover approximately 6' above floor elevation near column 13 in the Unit 1 Containment was found to be not adequately clamped. Work request 8492 to clamp the cover was issued and the cover was properly clamped.
- 3) Loose conduit support clamps were noticed - one (1) in the Unit 1 Containment and two (2) in the Unit 2 Containment. Work Requests 8465 and 8490 were issued to correct this deficiency and the clamps have been tightened.
- 4) Conduit support clamps were missing at 3 locations inside the Unit 1 containment. Work Requests 8462, 8463, and 8466 were issued to install the missing clamps and the missing clamps were installed.
- 5) Spare conduit next to conduit 1CK903XC against the loop room C wall in Unit 1 Containment was found to be broken at one place. Work Request 8467 was issued and the broken conduit was replaced.
- 6) Conduits at four locations inside the Unit 2 Containment was found to have long spans. Work requests 8495 and 8497 were issued to add additional supports to reduce the unsupported length of conduits. Additional supports have since been installed.
- 7) Seven long cantilever conduit spans in the Unit 2 Containment were noticed. Work Requests 8494 and 8497 were issued to install additional supports. The installation of new supports has been completed.
- 8) Armor cable at two locations in the Unit 2 Containment were found to have broken armor cover

at the connection to the junction box. Work Requests 8491 and 6498 were issued to correct these deficiencies. The armor cables have been repaired.

- 9) In the Unit 2 Containment, JB-3599-2 located in loop room B had some cover screws missing. Work Request 8496 was issued to install the missing screws and they were installed.

All of the above issues were reviewed to ensure that they do not compromise the structural integrity of raceway systems and do not impact any safety functions of the equipment and structures in their vicinity. The review indicated that these issues do not compromise the structural integrity of the raceway systems or impact other safety related items functions during a seismic event. These issues were, however, resolved to enhance the seismic capacity of the raceway systems.



## **5. PEER REVIEW**

A peer review was conducted for the IPEEE - Seismic program at North Anna Power Station by Structural Mechanics Consulting, Inc. The review was integrated with the USI A-46 seismic program at North Anna. The purpose of the peer review was to obtain an independent assessment of the walkdowns and analyses by audit and sampling. The review took place in February 1996, and consisted of about three days of plant walkdown followed by review of documentation. Approximately 20% of the items from the Unit 1 and Unit 2 SSELs were pre-selected by the peer reviewer and Virginia Power SCEs representing all classes of equipment. Review comments were made on generic issues and 148 specific Unit 1 and 2 components.

It is noted that at the time the peer review was conducted, the walkdowns of equipment, tanks and heat exchangers, cable and conduit raceways and other distributed systems, and of safety significant areas of the plant for the potential of seismically induced fire and flood and other potential seismic vulnerabilities related to systems and structures were essentially complete. However, the closure of open issues and anchorage and other capacity analyses was still in progress. The reviewer, while indicating that the seismic walkdowns at North Anna were performed in an excellent manner, identified a few generic and component specific open issues. The results and conclusions of the peer review are provided in Appendix C. The resume of the peer reviewer is provided in Appendix D.

Subsequent to the peer review, the open issues identified by the reviewer were resolved, with a few minor exceptions. The resolutions or the proposed resolutions of the generic and component specific open issues identified in the peer review are discussed below. It is also noted that several of the issues identified by the peer reviewer were resolved immediately following the peer review, but prior to the issue of the peer review report. Therefore, the closure of such issues is discussed by the peer reviewer in Appendix C.

### **Large Transformers:**

The 4160/480 transformers were qualified by seismic bi-axial, multi-frequency shake table testing by ITE. Thus the transformer coils not being top-braced laterally is not an issue. An analysis of the bounding case of the anchorage of all 8 transformers together with the emergency bus switchgear (which is part of the unit supplied by ITE) has been performed. The transformers are determined to be adequate for operability, however, the following issues are outstanding, as is also noted in the outlier section of this report: (a) In some of the transformers, a slight gap exists between the friction hold down clip and the base channel which holds the coils. This gap will be closed, as needed, (b) The transformer anchorage and/or load path to the adjacent cabinets will be further reviewed, and (c) Some of the nuts were found loose on the bolts which connect the heavy coils to the base channel. The nuts have been tightened for six of eight transformer units. The nuts will be inspected and tightened, if required, on the remaining two transformers.

### **Florescent Lights and fire extinguishers**

Upon further review and walkdown, all the Virginia Power SCEs agreed with the peer reviewer that covers or other attachments are not required on the florescent lights. The light tubes are not heavy enough and would not be expected to cause a hazard to SSEL components. In addition, the SCEs also concluded that fire extinguishers on hooks cannot become loose during a strong shaking. These issues are considered closed.

### **Spacers for Batteries**

A subsequent walkdown was performed by the SCEs for the batteries and it was found that there is no cell in any battery assembly at North Anna adjacent to which there are no spacers or tie rods. Thus the cells cannot impact each other. The battery manufacturer was contacted and stated that new batteries which have been seismically tested, contain only tie rods between cells but not necessarily Styrofoam spacers. Therefore, this issue is considered closed.

### **Control Room Issues**

The control room ceiling support arrangement is planned to be further reviewed as stated in section 6.1.3. The indicator lights on vertical boards were revisited by a trip to the North Anna Station Control Room on March 17, 1997 by three SCEs. Control Room operators were interviewed regarding their reliance on the annunciator lights and other vertical board indicator lights. It was stated by the operators that procedures exist, such as procedure 1-AP-6, that would allow them to shut the plant in case of failure of some of the indicator lights during a strong motion earthquake. Based on this information, this issue is considered closed.

### **Specific Component related issues**

For a few components, an anchorage calculation was not available at the time of the peer review. This was noted by the reviewer. These calculations have now been completed. Other component specific issues have been resolved or are planned to be resolved as follows:

#### **Vertical Pumps (Equipment Class 6):**

2-RS-P-2A, 2B (Outside Recirculation Spray Pumps): Anchorage and other issues have been resolved.

#### **Fluid-Operated Valves (Equipment Class 7):**

1-MS-TV-109 and 110 (Containment Isolation valves - IPEEE scope only): The previous interaction concern due to small clearances was re-evaluated by a walkdown on 3-17-97 by two SCEs and determined to be acceptable. No further action is required.

2-CC-TV-200C (Return from Cooling Coil - Cont. Isolation Valve - IPEEE scope only): A re-walkdown on 3-17-97 by two SCEs concluded that the ½" clearance is sufficient considering the support configuration. Therefore, the interaction issue is considered to be resolved.

**Air Handlers (Equipment Class 10):**

1-HV-AC-1,2; 2-HV-AC-8,9 (Control Room Air Conditioners): All caveats have been resolved. Therefore, all issues associated with these components are considered closed.

**Flow Switch (Equipment Class 18):**

1-HV-FS-1215C (Flow switch): The previous interaction concern due to small clearance was re-evaluated by a subsequent walkdown by the SCEs involved and was determined to be acceptable.

**Control Panels and Cabinets (Equipment Class 20):**

1-EI-CB-18A, B, C (P250 Computer I/O Cabinets): It was unclear to the SCEs and to the peer reviewer if the computer cards inside the cabinets are well restrained. However, an evaluation was performed to determine if these cabinets would be required for safe-shutdown. It was concluded that these cabinets can be removed from the SSEL. Thus no further evaluation of the cards is required.

1-EP-CB-28H (Service Water Logic Cabinet 1A): This cabinet contains essential relays. A clearance of 3/8" in the front and 3/16" in the back is noted with an adjacent cabinet. The cabinet was analyzed and it was concluded that the cabinet deflections during the strong motion portion of an RLE will be small so as to preclude any impact with the adjacent cabinet. Therefore, this interaction concern is resolved. In addition, an anchorage evaluation of this cabinet shows the HCLPF to be above 0.3g.

1-EI-CB-301C (EI/Control Panel): Housekeeping issues in the vicinity of this cabinet were identified in the SEWS. There are other SSEL items which have similar concerns. The Station has been notified regarding this issue and section 6.1 discusses the proposed action and schedule.

**Tank (Equipment Class 21):**

1-CC-TK-1 (Component Cooling Surge Tank): The potential interaction of a handrail with the tank was reviewed in a subsequent walkdown by the SCEs, and it was determined that the interaction is not credible.

## **6. SUMMARY AND CONCLUSIONS**

### **6.1 UNRESOLVED ISSUES AND PLAN FOR RESOLUTION**

#### **6.1.1 Seismic Induced Fire Issues**

- (a) Lube Oil Heat Exchanger (located at elevation 277' - Turbine Building), 1-LO-E-1A & 2-LO-E-1A, require anchorage check to determine if they could break loose and damage connecting piping.
- (b) Hydrogen piping associated with the Generator and Turbine Lube Oil, and Seal Oil systems were all screened out, except for the piping at elevation 277', Unit 2 side of the Turbine Building. The hydrogen piping, less than 1" diameter, coming from the Turbine Lube Oil system was anchored to the Turbine pedestal at several locations. The Turbine pedestal is an independent structure from the Turbine Building. An examination of the relative seismic motion between the Turbine Building and the Turbine pedestal and its effect on the piping is required.
- (c) Hydrogen bottles located by the roll-up door at elevation 274' (Auxiliary Building) need a set of chains at the bottom of the bottles. Supports are not bolted to concrete. A follow up evaluation and/or modification will be required. Also several hydrogen and other gas bottles located in the chemical sampling area on this elevation were not sufficiently supported and require further evaluation.

#### **6.1.2 Seismic Induced Flood Issues**

##### **Turbine Building**

Feedwater Heaters 1,2-FW-E-1A,1B,2A,2B,3A,3B,4A,4B are supported midway and at the base of the heater. An adequacy check of supports is required to ensure that there are no effects on surrounding equipment due to seismic interaction or flooding potential, such as pipe breaks at the nozzle.

##### **Tanks Located in the Yard**

Casing Cooling Tanks, located next to the Auxiliary Feedwater Pump House (AFWPH), appear to be well encased in concrete. However, the tank anchorage and potential interaction and flooding concerns need to be further reviewed.

#### **6.1.3 Miscellaneous Issues**

- (a) Several lube oil reservoir sites on motor driven pumps were loose and should be tightened. Specifically, the oil reservoirs on all the SSEL pumps should be checked to prevent pump

burn-up from oil leakage and subsequent lack of lubrication. A comprehensive plan will be developed to inspect all the plant pump lube oil reservoirs to resolve this issue.

- (b) A storage cabinet of air bottles near 1-HV-AC-5 (Turbine Building, elevation 279') was not anchored and could create potential missile concerns if the bottles fell and ruptured during a seismic event. The cabinet will be bolted to resolve this concern.
- (c) Several mechanical and electrical penetrations were walked down and the only concern identified was that a ceramic type of material was used in the assemblies for some 4160 volt electrical penetrations in the Cable Vault area at the electrical penetrations into containment. Failure of ceramic materials has been identified in the earthquake database. A review of this insulator structural adequacy during a seismic event will be performed.
- (d) The light diffuser panels in the Control Room ceiling rest on a frame of inverted tees. Diffusers that are not tied to the frame have been identified in the earthquake database, as having a potential to fall. The diffuser panels need to be further evaluated and, if required, they will be tied to the frame preferably at two sides, in areas where they could injure the operators or damage sensitive equipment.
- (e) Cable and Conduit Raceway Systems - Several conduit covers were missing in the cable vault and tunnel area and in the Service Building. In addition, cables in several locations were hanging loose from cable trays. Work Orders 30686, 30687, 30688, and 30689 have been issued to correct these deficiencies.
- (f) HVAC Ducting and Supports - HVAC ducting was rod hung in the Turbine Building. Supports were adequately spaced to prevent major failure, however, it is expected that the ducting will exhibit significant displacements during a seismic event. Failure of the ducting may be possible, by tearing of the sheet metal, primarily at section connections. Potential leakage may occur at these locations. Any impact of this leakage will be evaluated.

#### **6.1.4 Electrical and Mechanical Equipment**

A description of each outstanding unresolved issue related to electrical and mechanical equipment is summarized in Table 6.1-1. It is noted that seismic verification or qualification of the components listed in this table has been performed and the components are found to have capacities equal to or higher than the RLE, exclusive of the issues listed.

#### **6.1.5 Resolution Plan**

The issues discussed above are planned to be resolved by the end of the North Anna Unit 1 refueling outage currently scheduled to commence in April 2000.

Table 6.1-1

List of Outstanding Issues

ITEM NO.	DESCRIPTION OF OUTLIER/ISSUE	EQUIPMENT MARK NUMBER	RESOLUTION
1	Housekeeping Issue: Movable CO <sub>2</sub> fire extinguisher carts on wheels, unanchored tables, trash cans etc. are a few inches away from SSEL cabinets housing essential relays in the ESGR room and IRR room.	In the vicinity of several components	This issue is being resolved via an Engineering Transmittal No. CEM-97-0032 to the Station.
2	(a) Some of the friction clips used in transformer cabinet anchorages have a small gap with the base channel. The coils are not laterally restrained at the top, however, the transformer has been seismically tested. (b) The transformer anchorage and/or load path to the adjacent cabinets which are bolted to the transformer cabinet requires additional review. (c) The nuts for the bolts connecting the transformer coils to the base channels may need to be tightened for transformers 2-EE-ST-2J and 2-EE-ST-2J1.	1-EE-ST-1H 1-EE-ST-1H1 1-EE-ST-1J 1-EE-ST-1J1 2-EE-ST-2H 2-EE-ST-2H1 2-EE-ST-2J 2-EE-ST-2J1	Further inspection and review will be performed to verify anchorage adequacy and/or load path. The gap between friction clips and base channel will be closed via modification, as needed. To tighten the nuts, a work order has been issued to the Station.
3	Cabinets contain essential relays and have the potential of side-to-side impact with adjacent cabinets	1(2)-EI-CB-08B 1-EE-EG-01C 1-EE-EG-02C 1-EE-EG-03C 1-EE-EG-04C	The cabinets will be bolted with adjacent cabinets to prevent potential impact
4	A clamp support on an adjacent unistrut is close to the flow switch and has a potential for interaction	1-HV-FS-1215B	Engineering transmittal CEM-97-0012, and Work order no 008954 have been written to move the clamp assembly about 1" away

Table 6.1-1 (Continued)

List of Outstanding Issues

ITEM NO.	DESCRIPTION OF OUTLIER/ISSUE	EQUIPMENT MARK NUMBER	RESOLUTION
5	A space heater is suspended on long rod hangers over the battery chargers and near the batteries in the EDG room. Swaying of the heater during a seismic event may break the connecting steam/condensate line and spray the batteries.	1-EG-B-01A 1-EG-B-03C 2-EG-02B 2-EG-B-04D	The requirement for the space heater in the EDG room will be reviewed, and if required the heaters will be laterally restrained to the adjacent concrete walls
6	Potential interaction exists between valve operator limit switch support bracket and platform support beam. The valve has cast iron yoke	2-FW-FCV-2479	Further review of the operator displacement is planned. If required, the existing support beam will be notched to clear the interference
7	Pressure gage/regulator assembly which is mounted to valve operator is approximately 5/8" away from post for adjacent handrail	2-RH-FCV-2605	Further review of the operator displacement is planned. If required, the hand rail will be moved away from the valve operator
8	Interaction concern of valves with adjacent commodities	1-CC-TV (SOV)-102D 1-CC-TV (SOV)-105A 1-CC-TV (SOV)-105C	Further review of valve displacement is planned. If required, adjacent commodities will be relocated to eliminate the potential interaction
9	Valve hand-wheel is about 1/4" from an adjacent pipe	2-SI-MOV-2836	Further review is planned. If required, the handwheel will be replaced or removed

Table 6.1-1 (Continued)

List of Outstanding Issues

ITEM NO.	DESCRIPTION OF OUTLIER/ISSUE	EQUIPMENT MARK NUMBER	RESOLUTION
10	Valve operator cantilever length exceeds limits of Appendix F of EPRI NP-6041-SL	1-RC-PCV-1455C, 1456 2-RC-PCV-2455C, 2456	Further review of the valve/yoke is planned.



## 6.2 SUMMARY OF RESULTS

Virginia Electric and Power Company has completed an Individual Plant Examination of North Anna Power Station Units 1 and 2 for identifying vulnerabilities, if any, due to a Seismic Margin Earthquake, which is one of the severe external events identified in GL 88-20, Supplement 4. Individual Plant Examination for other external events and fires was completed previously and a report was submitted to the NRC in April 1994.

As discussed in the preceding sections, seismic walkdowns and other effort for IPEEE-seismic were integrated with the USI A-46 program for cost effectiveness. The seismic walkdowns were performed primarily by in-house trained and experienced engineers, and in some cases, they were augmented by senior industry consultants. The lessons learned and insights gained from the walkdowns by in-house engineers are expected to be of significant benefit to plant safety on issues such as future maintenance, system and component modification, and seismic verification of new and replacement equipment.

Seismic walkdowns and evaluations were completed for approximately 1800 components identified in the seismic review SSEL, Appendix A. Those issues/deficiencies which were found during the walkdowns as potential operability concerns, were resolved immediately in accordance with the Station procedures. Most of the other issues leading to plant improvement were also resolved expeditiously, to the extent of available resources.

Several modifications in the plant were completed for the combined IPEEE-seismic/USI A-46 program. To date, issues for 58 items of electrical and mechanical equipment, including three tanks, have been resolved via field modifications. In addition, several minor deficiencies for cable and conduit raceways were resolved, as indicated in Section 4.3. The remaining unresolved issues consist of seismic induced fire/flood evaluations, housekeeping issues, control room ceiling review, a few minor modification needed for cable trays, and issues identified for further evaluation and enhancement for 32 mechanical and electrical components as indicated in Section 6.1. These issues are planned to be resolved by the end of the North Anna Unit 1 refueling outage currently scheduled to commence in April 2000.

No weak links were identified during the walkdown and evaluations related to containment isolation/integrity, structures, block walls, and distribution systems that include piping, cable tray raceways, and air ducting, although some issues require further evaluation. Relay chatter for essential relays was evaluated in the USI A-46 program and no low ruggedness relays were found. Therefore, no additional relay evaluation is required for IPEEE-seismic per NUREG-1407. Soil liquefaction analysis is not included in accordance with GL 88-20, Supplement 5.

Based on the evaluations, modifications and improvements discussed in this report, the plant HCLPF capacity is 0.16g. This is due to the overturning moment capacity of Emergency Condensate Storage tanks, 1(2)-CN-TK-1. A summary of the HCLPF capacities for those components that have capacities less than 0.3g is provided in Table 3.2-1, Section 3.

## 7. REFERENCES

- 7.1 USNRC, Generic Letter (GL) 88-20, Supplement 4, "Individual Plant Examination of External Events (IPEEE) for Severe Accident Vulnerabilities, 10CFR 50.54", June 28, 1991.
- 7.2 USNRC, "Procedural and Submittal Guidance for the Individual Plant Examination of External Events (IPEEE) for Severe Accident Vulnerabilities", NUREG-1407, June 1991.
- 7.3 Electrical Power Research Institute (EPRI), "A Methodology for Assessment of Nuclear Power Plant Seismic Margin, Revision 1 ", EPRI NP-6041, August 1991.
- 7.4 Virginia Electric and Power Company (VEPCO) Letter to USNRC, "Surry Power Station (SPS) Units 1 and 2, North Anna Power Station (NAPS) Units 1 and 2, Response to Generic Letter 88-20 Supplement 4, Individual Plant Examination of External Events for Severe Accident Vulnerabilities", December 20, 1991 - Responded to Reference 7.1.
- 7.5 USNRC Letter to VEPCO, "North Anna Units 1 and 2 - Review of Response to GL 88-20, Supplement 4 on IPEEE, (TAC NOS. M83647 and M83648)", June 26, 1992 - Responded to Reference 7.4.
- 7.6 VEPCO Letter to USNRC, "SPS Units 1 and 2, NAPS Units 1 and 2, Schedule for GL 88-20 Supplement 4, IPEEE, for Severe Accident Vulnerabilities", September 18, 1992 - Responded to Reference 7.5.
- 7.7 USNRC's Letter to VEPCO, "SPS Units 1 and 2, Review of Response to GL 88-20, Supplement 4, IPEEE (TAC NOS. M83681 and M83682)", August 18, 1993 - Responded to Reference 7.6.
- 7.8 USNRC, Information Notice 94-32: Revised Seismic Hazard Estimates (NUREG-1488, "Revised Livermore Seismic Hazard Estimates for 69 Sites East of the Rocky Mountains", April 29, 1994.
- 7.9 VEPCO letter to USNRC, "SPS Units 1 and 2, NAPS Units 1 and 2, Supplemental Response to Generic Letter 87-02, Status and Schedules for USI A-46, Supplement 1 to GL 87-02 and IPEEE (Seismic), GL 88-20, Supplement 4", October 11, 1994.
- 7.10 USNRC, Federal Register Vol.60, No.19, "Proposed Generic Communication Supplement 5 to GL 88-20, IPEEE for Severe Accident Vulnerabilities", January 30, 1995.
- 7.11 VEPCO Letter to USNRC, "Proposed Generic Communication, Supplement 5 to GL88-20, IPEEE for Severe Accident Vulnerabilities, February 27, 1995. - Responded to Reference 7.10.
- 7.12 USNRC, GL 88-20, Supplement 5, "IPEEE for Severe Accident Vulnerabilities", September

8, 1995.

- 7.13 VEPCO Letter to USNRC, "SPS Units 1 and 2, NAPS Units 1 and 2, Response to GL 88-20, Supplement 5, Revised Procedures for Performing IPEEE(Seismic), November 3, 1995 - (Response to Reference 7.12.)
- 7.14 VEPCO Letter to USNRC, "SPS Units 1 and 2, NAPS 1 and 2, Schedule for Summary Reports for A-46, Supplement to GL 87-02 and for IPEEE Seismic, Supplement to GL 88-20", November 20, 1996.
- 7.15 VEPCO Letter to USNRC, "NAPS Units 1 and 2, IPEEE Non-Seismic External Events and Fires, June 28, 1994 - (Response to Reference 7.1.)
- 7.16 VEPCO Letter to USNRC, "NAPS Units 1 and 2, Response to GL 88-20, Supplement 1, IPE for Severe Accident Vulnerabilities", December 14, 1992.
- 7.17 SQUG Memorandum, "Proposed SQUG Response to NRC Evaluation of Generic Issues in RAIs" March 11, 1997.
- 7.18 SQUG Letter to the NRC, "Generic Issues Included in NRC's Requests for Additional Information", April 18, 1997.

## 7. REFERENCES

- 7.1 USNRC, Generic Letter (GL) 88-20, Supplement 4, "Individual Plant Examination of External Events (IPEEE) for Severe Accident Vulnerabilities, 10CFR 50.54", June 28, 1991.
- 7.2 USNRC, "Procedural and Submittal Guidance for the Individual Plant Examination of External Events (IPEEE) for Severe Accident Vulnerabilities", NUREG-1407, June 1991.
- 7.3 Electrical Power Research Institute (EPRI), "A Methodology for Assessment of Nuclear Power Plant Seismic Margin, Revision 1", EPRI NP-6041, August 1991.
- 7.4 Virginia Electric and Power Company (VEPCO) Letter to USNRC, "Surry Power Station (SPS) Units 1 and 2, North Anna Power Station (NAPS) Units 1 and 2, Response to Generic Letter 88-20 Supplement 4, Individual Plant Examination of External Events for Severe Accident Vulnerabilities", December 20, 1991 - Responded to Reference 7.1.
- 7.5 USNRC Letter to VEPCO, "North Anna Units 1 and 2 - Review of Response to GL 88-20, Supplement 4 on IPEEE, (TAC NOS. M83647 and M83648)", June 26, 1992 - Responded to Reference 7.4.
- 7.6 VEPCO Letter to USNRC, "SPS Units 1 and 2, NAPS Units 1 and 2, Schedule for GL 88-20 Supplement 4, IPEEE, for Severe Accident Vulnerabilities", September 18, 1992 - Responded to Reference 7.5.
- 7.7 USNRC's Letter to VEPCO, "SPS Units 1 and 2, Review of Response to GL 88-20, Supplement 4, IPEEE (TAC NOS. M83681 and M83682)", August 18, 1993 - Responded to Reference 7.6.
- 7.8 USNRC, Information Notice 94-32: Revised Seismic Hazard Estimates (NUREG-1488, "Revised Livermore Seismic Hazard Estimates for 69 Sites East of the Rocky Mountains", April 29, 1994.
- 7.9 VEPCO letter to USNRC, "SPS Units 1 and 2, NAPS Units 1 and 2, Supplemental Response to Generic Letter 87-02, Status and Schedules for USI A-46, Supplement 1 to GL 87-02 and IPEEE (Seismic), GL 88-20, Supplement 4", October 11, 1994.
- 7.10 USNRC, Federal Register Vol.60, No.19, "Proposed Generic Communication Supplement 5 to GL 88-20, IPEEE for Severe Accident Vulnerabilities", January 30, 1995.
- 7.11 VEPCO Letter to USNRC, "Proposed Generic Communication, Supplement 5 to GL88-20, IPEEE for Severe Accident Vulnerabilities, February 27, 1995. - Responded to Reference 7.10.
- 7.12 USNRC, GL 88-20, Supplement 5, "IPEEE for Severe Accident Vulnerabilities", September

8, 1995.

- 7.13 VEPCO Letter to USNRC, "SPS Units 1 and 2, NAPS Units 1 and 2, Response to GL 88-20, Supplement 5, Revised Procedures for Performing IPEEE(Seismic), November 3, 1995 - (Response to Reference 7.12.)
- 7.14 VEPCO Letter to USNRC, "SPS Units 1 and 2, NAPS 1 and 2, Schedule for Summary Reports for A-46, Supplement to GL 87-02 and for IPEEE Seismic, Supplement to GL 88-20", November 20, 1996.
- 7.15 VEPCO Letter to USNRC, "NAPS Units 1 and 2, IPEEE Non-Seismic External Events and Fires, June 28, 1994 - (Response to Reference 7.1.)
- 7.16 VEPCO Letter to USNRC, "NAPS Units 1 and 2, Response to GL 88-20, Supplement 1, IPE for Severe Accident Vulnerabilities", December 14, 1992.
- 7.17 SQUG Memorandum, "Proposed SQUG Response to NRC Evaluation of Generic Issues in RAIs" March 11, 1997.
- 7.18 SQUG Letter to the NRC, "Generic Issues Included in NRC's Requests for Additional Information", April 18, 1997.

## APPENDIX A

### **Safe Shutdown Equipment List (SSEL) Report, Composite SSEL, and Seismic Review SSEL**

This Appendix contains the SSEL Report, MPR-1201, Revision 1, prepared by MPR Associates, Inc. As discussed in Section 3.1, the composite SSEL and the seismic review SSEL in report MPR-1201 were revised as a result of the walkdowns and further review. Therefore, the current versions of these sections are provided.

**SAFE SHUTDOWN EQUIPMENT LIST (SSEL) REPORT**

North Anna Power Station ,  
USI A-46 and IPEEE  
Safe Shutdown Equipment

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MPR-1201  
Revision 1

Volume 1 of 3

March 1993

Principal Contributors

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## REVISION SUMMARY

MPR-1201

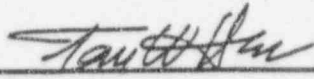
North Anna Power Station  
Identification of Safe Shutdown Equipment  
for USI A-46 and IPEEE

Revision No.	Date	Reason for Change
A	October 1990	Initial draft for Virginia Power review (Unit 2 Decay Heat Removal SSEL only)
B	April 1991	Added SSELs for all Units 1 and 2 safe shutdown functions
0	December 1991	Incorporated comments from: 1. April 12, 1991 review meeting 2. Preliminary walkdowns 3. Simulator results and Operations Department comments 4. Updated P&ID revision reconciliation 5. Relay evaluation effort
1	March 1993	Incorporated comments from VA Power Operations review (comments forwarded via VA Power letter dated November 24, 1992). Added missing data as necessary to complete SSELs for USI A-46. Documented selection of safe shutdown equipment for seismic IPEEE.

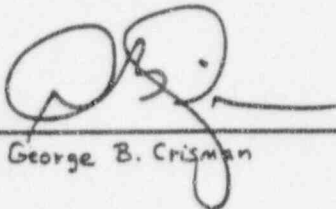
SAFE SHUTDOWN EQUIPMENT LIST  
NORTH ANNA POWER STATION UNITS 1 AND 2

REVISION 1

MARCH 1993

APPROVED:  8/9/94 Virginia Power Engineering  
Date

APPROVED: David B Roth 8/9/94 Virginia Power Engineering  
Date

APPROVED:  8/16/94 Virginia Power Operations\*  
George B. Crisman Date

\*Operations approval applies only to the USI A-46 portions of this report.

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## INDEX OF ACRONYMS AND ABBREVIATIONS

AC	- Alternating Current
AC RM	- Air Conditioning Room
ACCUM	- Accumulator
AFW	- Auxiliary Feedwater
AFPH	- Auxiliary Feedwater Pump House
AS	- Auxiliary Steam System
AUX	- Auxiliary Building
BAST	- Boric Acid Storage Tank
BATP	- Boric Acid Transfer Pump
BD	- Steam Generator Blowdown System*
BIT	- Boron Injection Tank
BP	- Bypass Switch
BRS	- Boron Recovery System
BY	- Batteries
CC	- Component Cooling Water System*
CCP	- Centrifugal Charging Pump
CCW	- Component Cooling Water
CH	- Chemical and Volume Control System*
CN	- Condensate System*
CONTMT	- Containment
CP	- Condensate Polishers
CCW	- Component Cooling Water
CPCW	- Charging Pump Cooling Water System
CR	- Control Room
CR	- Control Rod Drive Systems*
CSD	- Cold Shutdown
CST	- Condensate Storage Tank
CV	- Atmospheric Cleanup System*
CVCS	- Chemical and Volume Control System
DA	- Aerated Drain System*
DG	- Gaseous Drain System
ECST	- Emergency Condensate Storage Tank
EDG	- Emergency Diesel Generator
EE	- Electrical Equipment*
EG	- Emergency Generator*

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\*SSEL system designation

## INDEX OF ACRONYMS AND ABBREVIATIONS (Cont)

EI	- Electrical Instrumentation*
E/P	- Electropneumatic
EP	- Electrical Panels
FCV	- Flow Control Valve
FO	- Fuel Oil
FOPH	- Fuel Oil Pump House
FW	- Feedwater System
GIP	- Generic Implementation Procedure
GN	- Primary Plant Gas Supply System*
HC	- Hydrogen Recombiner System
HCV	- Hand Control Valve
HRS	- High Radiation Sampling System*
HV	- Heating and Ventilation System
HVAC	- Heating, Ventilation, and Air Conditioning
HX	- Heat Exchanger
IA	- Instrument Air System*
INST	- Instrument
ISOL	- Isolation
IPEEE	- Individual Plant Examination of External Events
JB	- Junction Box
LHSI	- Low Head Safety Injection
LM	- Leakage Monitoring System*
LO	- Lube Oil
LOCA	- Loss of Coolant Accident
MCC	- Motor Control Center
MDAFWP	- Motor Driven Auxiliary Feedwater Pump
MOV	- Motor Operated Valve
MSVH	- Main Steam Valve House
MS	- Main Steam System*
MSIV	- Main Steam Isolation Valve
NAPS	- North Anna Power Station
NCRODP	- Nuclear Control Room Operator Development Program
ND	- In-Core Instrumentation System*
NS	- Neutron Shield*
P&ID	- Piping and Instrumentation Diagram
PCV	- Pressure Control Valve
PDTT	- Pressurizer Drain and Transfer Tank
PORV	- Power Operated Relief Valve

## INDEX OF ACRONYMS AND ABBREVIATIONS (Cont)

PRA	- Probabilistic Risk Assessment
PRT	- Pressurizer Relief Tank
PZR	- Pressurizer
QS	- Quench Spray System*
QSPH	- Quench Spray Pump House
RC	- Reactor Coolant System*
RCP	- Reactor Coolant Pump
RCS	- Reactor Coolant System
RH	- Residual Heat Removal System*
RHR	- Residual Heat Removal System
RM	- Radiation Monitoring System*
RPS	- Reactor Protection System
RR	- Relay Room
RS	- Recirculation Spray System*
RVLIS	- Reactor Vessel Level Indication System
RWST	- Refueling Water Storage Tank
SFGD	- Safeguards Building
SG	- Steam Generator
SI	- Safety Injection System*
SMA	- Seismic Margins Assessment
SME	- Seismic Margin Earthquake
SOV	- Solenoid Operated Valve
SQUG	- Seismic Qualification Utility Group
SS	- Sampling System*
SSE	- Safe Shutdown Earthquake
SSEL	- Safe Shutdown Equipment List
SV	- Steam Vent System
SW	- Service Water System*
$T_c$	- $T_{cold}$ , cold leg temperature
$T_h$	- $T_{hot}$ , hot leg temperature
TDAFWP	- Turbine Driven Auxiliary Feedwater Pump
TEMP	- Temperature
TRANS	- Transformer
USI	- Unresolved Safety Issue
VB	- Vital Bus
VCT	- Volume Control Tank
VG	- Gaseous Vent System*



INDEX OF ACRONYMS AND ABBREVIATIONS (Cont)

- VIMS - Virginia Power's Video Information System on Plant  
Systems/Components
- WR - Wide Range
- XMTR - Transmitter

## Section 1

**GENERAL DESCRIPTION****1.1 PURPOSE**

This section provides the regulatory background and general methodology for identifying equipment to be evaluated in order to resolve USI A-46 "Seismic Qualification of Equipment in Operating Plants" and to complete the seismic portion of the Individual Plant Examination of External Events for Severe Accident Vulnerabilities.

**1.2 BACKGROUND****1.2.1 Unresolved Safety Issue (USI) A-46**

USI A-46 was initiated by the NRC in 1980 to confirm the seismic adequacy of essential equipment in older operating plants. In response to this USI, the Seismic Qualification Utility Group (SQUG) was formed and, working with USNRC representatives, developed a practical and cost-effective experience-based approach for verifying the seismic adequacy of equipment in nuclear plants. This methodology is defined in the SQUG Generic Implementation Procedure (GIP) for Seismic Verification of Nuclear Plant Equipment. This method was approved by NRC Safety Evaluation Report (SER) in May 1992. This NRC SER requested utility commitments to perform the seismic evaluations prescribed by the GIP and to complete these reviews in a three-year period.

**1.2.2 Individual Plant Examination of External Events (IPEEE)**

The need for evaluation of a nuclear plant's capability to withstand external events is a product of the NRC's severe accident policy. As a follow-on program to the Individual Plant Examination (a program to evaluate the capability of plants to withstand internal accidents) the IPEEE covers seismic, fire, and flooding hazards to the plant. The seismic IPEEE may be performed by a seismic probabilistic risk assessment (PRA) or by a seismic margins assessment (SMA) in accordance with guidance provided by the NRC in NUREG-1407, Procedural and Submittal Guidance for the Individual Plant Examination of External Events for Severe Accident Vulnerabilities. Virginia Power has elected to use the SMA methodology for North Anna Power Station.

The SMA is based in large part on the experience-based seismic evaluation approach developed by SQUG and defined in the GIP. However, the seismic IPEEE includes some equipment in addition to safe shutdown equipment required by USI A-46, (namely, NSSS, containment isolation, and certain LOCA mitigation equipment). For most plants, the earthquake review level is higher for IPEEE than the licensing basis SSE. The

IPEEE is required by Generic Letter 88-20, Supplement 4, which requires completion of the review in three years and which encourages integration of the A-46 and IPEEE seismic reviews and walkdowns in order to minimize duplication of effort and impact on the plants. NUREG 1407 also encourages coordinating A-46 and Seismic IPEEE activities.

### 1.3 REPORT ORGANIZATION

Because of the advantage of coordinating equipment selection results for A-46 and IPEEE, a single report has been prepared to describe the Safe Shutdown Equipment Lists (SSELs) for both A-46 and IPEEE. The report consists of 5 parts as follows:

- Section 1 (this section) provides a general description of the equipment identification process.
- Section 2 provides a specific description of the process for identifying equipment for resolution of USI A-46.
- Section 3 provides a specific description of the process for identifying equipment for seismic IPEEE.
- A series of appendices contain the equipment lists for each safe shutdown and support function for both USI A-46 and seismic IPEEE and explanatory information on what equipment has been included in these lists.
- PC Diskettes containing SSELs for both USI A-46 and IPEEE for use with the SSEM database program. The use of these diskettes is discussed further in Section 1.4.

### 1.4 GENERAL METHODOLOGY

#### 1.4.1 Previous Actions

In December 1991, MPR submitted a preliminary North Anna Power Station (NAPS) safe shutdown equipment selection report to Virginia Power for resolving USI A-46. The submittal was identified as preliminary because:

- The NRC had not issued a final Safety Evaluation Report (SER) for Revision 2 of the GIP.
- Some information required to complete the SSEL had not been provided.
- The NAPS Operations Department review of the SSEL had not been completed.

Subsequent to the submittal of the preliminary report, the NRC issued an SSER for GIP Revision 2, the NAPS Operations Department completed a review of the preliminary SSEL and progress on Virginia Power's Passport database system provided a new resource for completing SSEL information fields.

#### **1.4.2 Summary of Current Actions**

The SSEL preparation effort described in this report consisted of finalizing the Preliminary SSEL submitted in December 1991 to:

- Reflect NRC comments in the SER on GIP Revision 2.
- Reflect NAPS Operations Department Comments on the Preliminary SSEL for A-46.
- Complete missing information fields in the preliminary SSEL for A-46.
- Incorporate equipment items necessary to satisfy seismic IPEEE requirements.

The final SSEL resulting from this effort has been prepared as a composite list that contains equipment satisfying both USI A-46 and seismic IPEEE requirements. Separate SSELS have been compiled for Unit 1 and for Unit 2 with equipment in shared systems being included in the Unit 1 SSEL. In addition to several representative sorts of the SSEL provided in hard copy form in the Appendices to this report, the SSEL is also provided on PC Diskettes for use with the SQUG developed SSEM database program.

#### **1.4.3 The SSEL Database**

The database provides SSELS which contain the data fields described in the GIP and in Appendix A of this report. Further, the database is capable of identifying safe shutdown equipment which requires:

- A seismic evaluation for USI A-46
- A seismic evaluation for Seismic IPEEE
- A relay evaluation for USI A-46
- A relay evaluation for seismic IPEEE (if required)

At present, the results of the preliminary NAPS relay evaluation for USI A-46 are sufficient to satisfy seismic IPEEE relay evaluation requirements in NUREG 1407. If this conclusion should change as the USI A-46 relay evaluation is finalized, then the

SSEL can be used to identify the additional seismic IPEEE equipment which should receive a relay evaluation.

The SSEL distinguishes components required for seismic IPEEE but not by USI A-46 by an "I" in the notes column. All items in the SSEL are required for IPEEE. Only those items without an "I" in the notes column apply to USI A-46.

The following paragraphs describe the general procedures used to develop a final SSEL applicable to both USI A-46 and seismic IPEEE from the preliminary SSEL applicable only to USI A-46.

#### 1.4.4 Finalize the USI A-46 SSEL

This step involved revising the preliminary SSEL to reflect NAPS Operations Department comments and the completion of data fields, particularly those involving equipment locations, using Virginia Power's PASSPORT equipment database. The resolution of Operations Department comments was discussed with Virginia Power engineers at a series of visits by MPR engineers (documented in references listed in Appendix M).

#### 1.4.5 Preparing the Seismic IPEEE SSEL

The initial step in this process involved developing the success path logic diagrams and identifying the systems and functions required by EPRI NP-6041 and NUREG 1407. The systems selected were reviewed by Virginia Power engineers at a meeting with MPR engineers (documented in references listed in Appendix M). The selected systems were then traced on system diagrams to identify equipment items for inclusion in the seismic IPEEE SSEL.

Each item of equipment required to satisfy seismic IPEEE requirements was compared against the equipment in the USI A-46 SSEL. This comparison led to several possible actions as follows:

If the equipment item was in the USI A-46 SSEL and if the required equipment function was the same for both USI A-46 and seismic IPEEE applications then the USI A-46 SSEL was not changed.

If the equipment was in the USI A-46 SSEL but the equipment functioned differently in the USI A-46 application than in the seismic IPEEE application, then the USI A-46 SSEL was revised as follows:

- A second entry of the equipment item was made, retaining the equipment line number and equipment identifier entries unchanged but revising other fields as necessary to reflect the seismic IPEEE function.

- An "T" was inserted in the Notes column (Column 11) for this new equipment SSEL entry. An example of this type of SSEL revision might be a motor operated valve that is normally open and in the USI A-46 application for safe shutdown remains open. In accordance with the GIP, such an equipment item would be listed for a relay evaluation but not a seismic evaluation. On the other hand, if the seismic IPEEE application requires the valve to be closed, the valve would be listed for both a seismic evaluation and a relay evaluation in accordance with EPRI NP-6041 requirements.

If an equipment item selected for seismic IPEEE was not in the USI A-46 SSEL but is in a system for which other USI A-46 items are listed, then the seismic IPEEE equipment item is typically inserted in the portion of the USI A-46 SSEL containing other equipment in that system. The seismic IPEEE equipment item entry is designated by an "T" in the Notes data field.

If an equipment item selected for seismic IPEEE was not in the USI A-46 SSEL and the system application or function is unique to seismic IPEEE, then the equipment item is assigned a 7000 series line number. Such equipment entries are also designated by an "T" in the Notes data field.

The process described above results in the evolution of the SSEL from a USI A-46 only database to a composite database including both USI A-46 and seismic IPEEE equipment. Using the capability in the SSEM program, a USI A-46 SSEL can be compiled by sorting those equipment items which do not contain the letter "T" in the Notes data field. A seismic IPEEE SSEL includes all equipment entries in the SSEL.

## Section 2

**IDENTIFICATION OF SAFE SHUTDOWN  
EQUIPMENT FOR USI A-46****2.1 PURPOSE**

The purpose of this section is to document the selection of North Anna Power Station (NAPS) equipment needed to achieve and maintain a safe shutdown condition following a Safe Shutdown Earthquake (SSE) as required to resolve Unresolved Safety Issue (USI) A-46.

The equipment identified is that required to bring the plant to a safe shutdown condition following an SSE and maintain it in a safe shutdown condition during the first seventy-two hours following the SSE.

**2.2 METHODOLOGY**

The safe shutdown equipment identified in this report was selected based on the rules and requirements of Section 3, "Identification of Safe Shutdown Equipment," and the guidelines of Appendix A, "Procedure for Identification of Safe Shutdown Equipment" of the Generic Implementation Procedure (GIP) for Seismic Verification of Nuclear Plant Equipment<sup>1</sup>.

Four functions should be accomplished to achieve and maintain a safe shutdown condition following an SSE. These functions are: (1) reactor reactivity control, (2) reactor coolant pressure control, (3) reactor coolant inventory control, and (4) decay heat removal. The systems best suited to perform these safe shutdown functions at North Anna Power Station are identified in this report. The supporting systems necessary to operate the safe shutdown equipment are identified as well.

Some of the more significant GIP criteria and assumptions used in selecting the safe shutdown systems are as follows:

- Safe shutdown is defined as bringing the plant to, and maintaining it in, a hot shutdown condition during the first 72 hours following an SSE. However, for this analysis, Virginia Power has chosen to include additional equipment capable of bringing the plant to cold shutdown.

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<sup>1</sup> SQUG document, "Generic Implementation Procedure (GIP) for Seismic Verification of Nuclear Plant Equipment," June 1991, Corrected Revision 2 and NRC comments on the GIP documented in Supplemental Safety Evaluation Report No. 2, May 22, 1992.

- The safe shutdown equipment should not rely upon off-site power. All identified equipment needing electrical power should be powered by the diesel generators or station batteries.
- Redundancy should be provided for each item of equipment whose failure to perform its active function would prevent accomplishment of any of the four safe shutdown functions. This is so that out-of-service equipment or a single, active failure of any item of equipment does not preclude the fulfillment of the safe shutdown function.
- The safe shutdown systems chosen should be of minimal complexity and effort to operate.
- The safe shutdown systems chosen should be consistent with the normal and emergency operating procedures which are used to bring the plant to a safe shutdown condition.
- With the exception of loss of off-site power, no accidents or extraordinary events are postulated to occur concurrently with or sequentially to the safe shutdown earthquake.
- Operator action is permitted, if necessary, to accomplish the safe shutdown function provided that sufficient manpower and time are available and proper procedures are in place.

Selection of safe shutdown equipment has also been based on avoiding reliance on instrument air and service air systems to the maximum practical extent. Although not a GIP requirement, selecting flowpaths not dependent on the availability of instrument or service air was judged to result in a higher level of confidence in acceptable operation of safe shutdown equipment following an earthquake.

A Safe Shutdown Equipment List (SSEL) was made for each of the four functions identified above for safe shutdown. SSELs were also developed for supporting systems and for electrical systems, for a total of six SSELs for each unit. These SSELs are contained in Appendices B through G. They were then compiled into one composite list, the composite Safe Shutdown Equipment List, contained in Appendix I. An attempt has been made to avoid duplicate equipment entries in Appendices B through G. For example, many Chemical and Volume Control System components are required for boration (reactivity control) and for reactor plant makeup (inventory control). Such components are listed only once and are listed in the reactivity control function.

A separate SSEL for each safe shutdown function was generated for each unit. Equipment and systems shared by Units 1 and 2 are listed with the Unit 1 SSELs (e.g., service water system).



### 2.3 SAFE SHUTDOWN SYSTEMS

The purpose of this section is to describe the approach to achieve and maintain safe shutdown conditions following a postulated safe shutdown earthquake. Specifically, this section describes what systems are selected for controlling the following four functions during shutdown:

- Reactor reactivity control,
- Reactor coolant pressure control,
- Reactor coolant inventory control, and
- Decay heat removal.

The approach selected for shutting down the plant following an SSE starts with a turbine trip and reactor trip as a consequence of the postulated loss-of-offsite power. Initial reactivity control is achieved by insertion of the control rods. Long-term reactivity is controlled by boration of the reactor coolant system to cold shutdown levels using the Chemical and Volume Control System (CVCS). The CVCS is also used to control reactor coolant inventory. Pressure control is achieved and maintained through the pressurizer by controlling the pressurizer heaters or activating the power operated relief valve (PORV). Initial decay heat removal is accomplished by bleeding steam from a steam generator(s) to atmosphere through one (or more) PORVs. Steam generator water inventory is maintained by the Auxiliary Feedwater System using water first from the Emergency Condensate Storage Tank (8 hours) and then from the Condensate Storage Tank. When the pressure and temperature of the RCS are less than 450 psig and 350°F, respectively, the Residual Heat Removal System is initiated and continues the decay heat removal function.

The safe shutdown alternatives for each function for a pressurized water reactor are shown in the schematics of Figures 2-1 through 2-4. These schematics, adapted from the GIP, are highlighted to show those safe shutdown alternatives selected for North Anna Power Station Units 1 and 2.

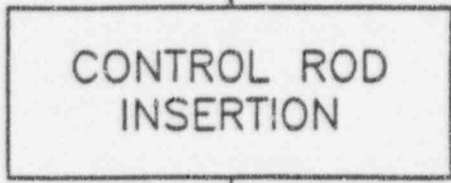
The USI A-46 requirements would be met by maintaining the plant in the hot shutdown condition by bleeding only enough steam from the steam generators to offset decay heat generation. However, Virginia Power has elected to cool the reactor plant by bleeding more steam than necessary to offset decay heat and then transferring the decay heat removal function to the Residual Heat Removal (RHR) system. Consequently, the safe shutdown equipment lists developed in this report are sufficient to place the plant in a cold shutdown condition.

A more detailed discussion of the systems involved in achieving each of the four safe shutdown functions is contained in Appendices B through E which provide the SSELs for the four safe shutdown functions.

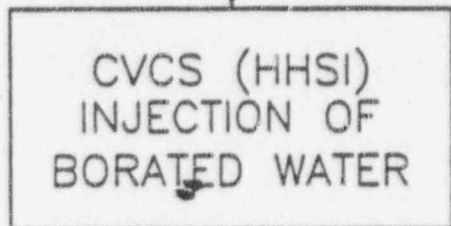
The flow paths for the safe shutdown systems are highlighted in pink on marked-up schematic drawings in Appendix N. Each item of equipment whose mark number is highlighted appears in a safe shutdown equipment list (SSEL).

REACTOR REACTIVITY  
CONTROL (PWR)

INITIAL AND CONTINUED CONTROL



LONG-TERM CONTROL DURING  
COOLDOWN OF REACTOR COOLANT

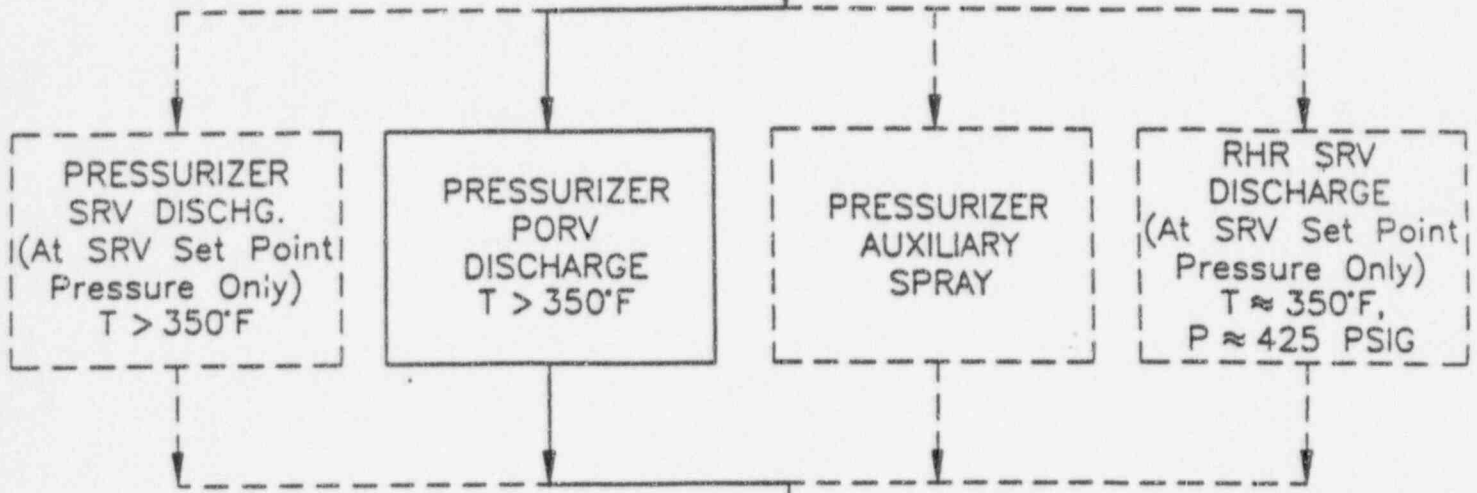


SAFE SHUTDOWN ALTERNATIVES FOR  
REACTOR REACTIVITY CONTROL FUNCTION  
NORTH ANNA POWER STATION UNITS 1 AND 2

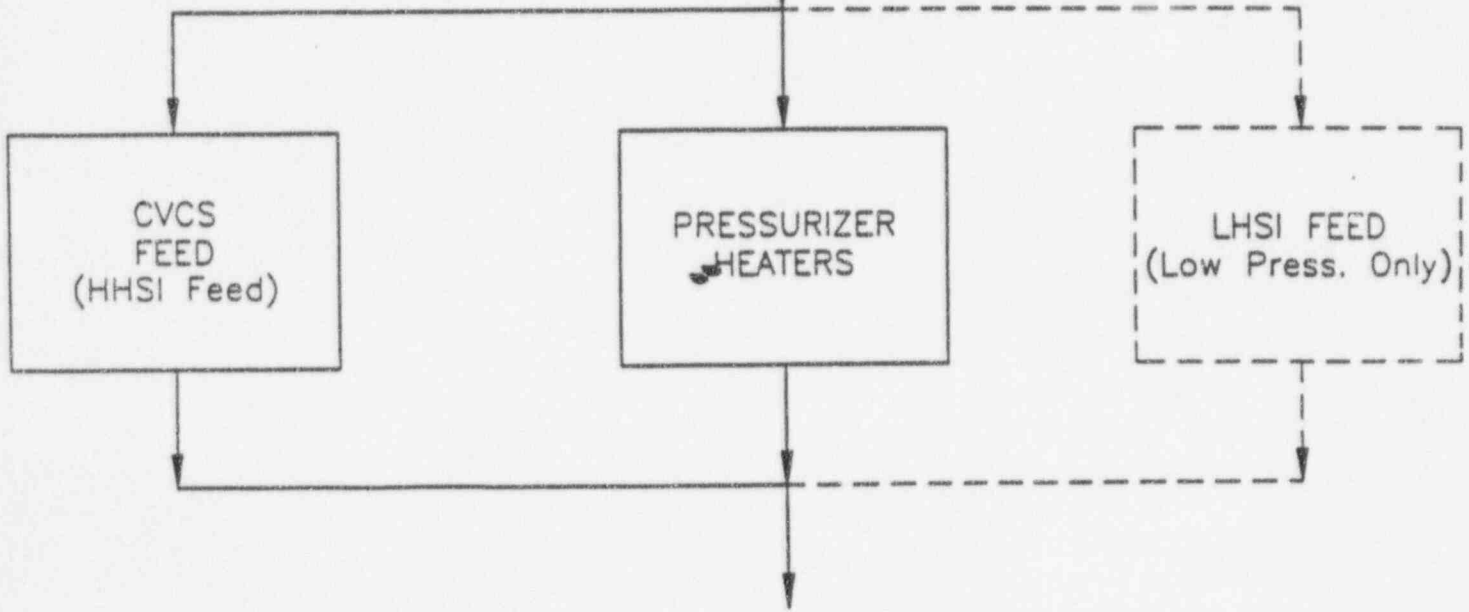
FIGURE 2-1

REACTOR COOLANT  
PRESSURE CONTROL (PWR)

DECREASE PRESSURE



INCREASE PRESSURE



SAFE SHUTDOWN ALTERNATIVES FOR  
REACTOR COOLANT PRESSURE CONTROL FUNCTION  
NORTH ANNA POWER STATION UNITS 1 AND 2

FIGURE 2-2

# REACTOR COOLANT INVENTORY CONTROL (PWR)

FEED INTO SYSTEM

CVCS  
FEED  
(HHSI Feed)

LHSI FEED  
(Low Press.  
Only)

ITEMS TO CONTROL TO  
MINIMIZE DISCHARGE FROM SYSTEM

REACTOR COOLANT  
PUMP SEAL  
LEAKOFF

PRESSURIZER  
PORV  
DISCHARGE

OTHER  
VENTS AND  
DRAINS

NORMAL AND  
EXCESS LETDOWN  
PATHS

PRESSURIZER  
SRV DISCHG.  
(At SRV Set Point  
Pressure Only)

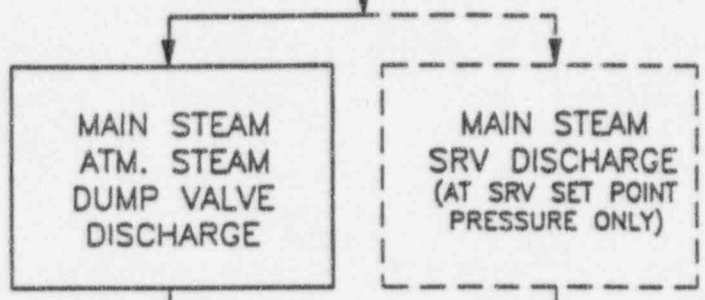
SAFE SHUTDOWN ALTERNATIVES FOR  
REACTOR COOLANT INVENTORY CONTROL FUNCTION  
NORTH ANNA POWER STATION UNITS 1 AND 2

FIGURE 2-3

# DECAY HEAT REMOVAL (PWR)

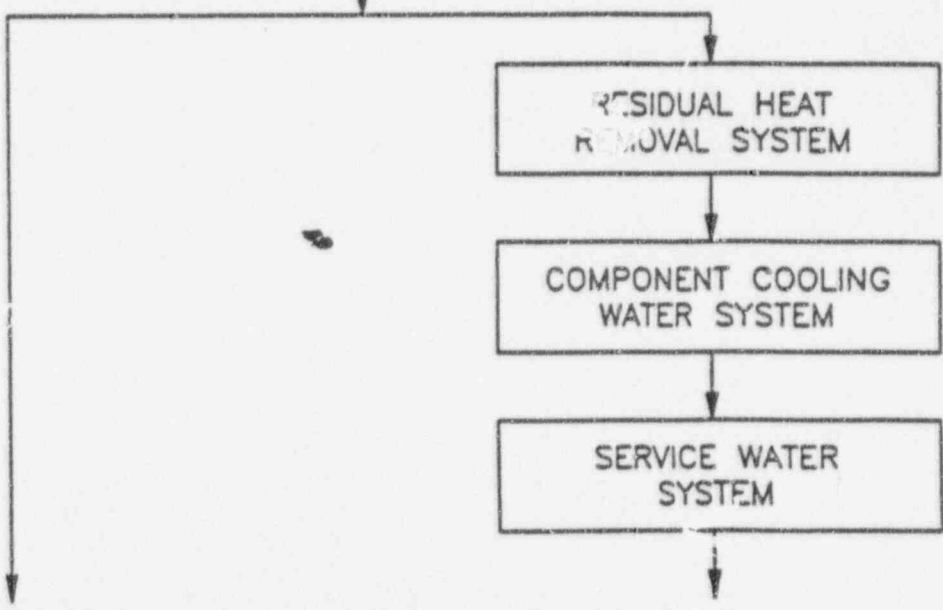
HIGH PRESSURE OPERATION

STEAM GENERATOR COOLING



AUX. FEEDWATER FEED TO STEAM GEN.

LOW PRESSURE OPERATION



SAFE SHUTDOWN ALTERNATIVES FOR  
DECAY HEAT REMOVAL FUNCTION  
NORTH ANNA POWER STATION UNITS 1 AND 2

FIGURE 2-4

## Section 3

**IDENTIFICATION OF SAFE SHUTDOWN  
EQUIPMENT FOR IPEEE****3.1 PURPOSE**

The purpose of this section is to document the selection of North Anna Power Station (NAPS) systems and equipment needed to achieve and maintain a safe shutdown condition in accordance with the Nuclear Regulatory Commission's (NRC) Individual Plant Examination of External Events (IPEEE) program.

The equipment identified in this report is that required to bring the plant to a safe shutdown condition and maintain it in that condition during the first 72 hours following a Seismic Margin Earthquake (SME).

Per Virginia Power's request, additional equipment beyond that required by IPEEE is also identified in this report to bring the reactor plants to cold shutdown condition.

**3.2 METHODOLOGY**

The success paths, safe shutdown systems, and safe shutdown equipment identified in this section were selected using the Seismic Margins Method of EPRI NP-6041. The Seismic Margins Method is one of the seismic analysis methods permitted by NUREG-1407, "Procedura' and Submittal Guidance for the Individual Plant Examination of External Events (IPEEE) for Severe Accident Vulnerabilities." This method has been used successfully in a trial application of the seismic margin method at Catawba Nuclear Power Station which, like North Anna Power Station, is a Westinghouse PWR. The analysis performed at Catawba is documented in EPRI NP-6359, "Seismic Margin Assessment of the Catawba Nuclear Station," Volumes 1 and 2, April 1989.

Four functions should be accomplished to achieve and maintain a safe shutdown condition following a Seismic Margin Earthquake (SME). These functions are: (1) reactor reactivity control, (2) reactor coolant pressure control, (3) reactor coolant inventory control, and (4) decay heat removal. The frontline systems best suited to perform these safe shutdown functions at North Anna Power Station are identified in this report. In addition, as required by NUREG-1407, the systems and components required to ensure that containment can continue to perform its design function following an SME are identified in this report. The supporting systems and monitoring equipment that are necessary to operate the frontline safe shutdown systems and containment systems/components are identified as well.

EPRI NP-6041 requires that one preferred and one alternate safe shutdown success path be chosen for seismic analysis, and that one of the paths be capable of accommodating a small LOCA. The Catawba Analysis identified the following success paths:

- Steam generator cooling via auxiliary feedwater with subsequent closed loop decay heat removal via the residual heat removal system (the preferred path for no LOCA).
- Feed and bleed with subsequent open loop recirculation using the residual heat removal system (a small LOCA can be accommodated in this mode).

These paths were reviewed for applicability at North Anna Power Station based on operational and design considerations; specifically, NAPS systems designs, procedures, operator training, system complexity, reliance on off-site power, and available instrumentation and indicators. The paths were adapted based on these considerations, and are discussed in more detail in Section 3.3.

Some of the more significant criteria and assumptions used in selecting the success paths, safe shutdown systems, and containment systems/components are as follows:

- Safe shutdown is defined as bringing the plant to, and maintaining it in, a hot or cold shutdown condition during the first 72 hours following an SME. For this analysis, Virginia Power has chosen to bring the plant to cold shutdown.
- The safe shutdown equipment should not rely upon off-site power. All identified equipment needing electrical power should be powered by the diesel generators or station batteries.
- Non-seismic caused component or system unavailability is not explicitly addressed in EPRI NP-6041. However, safe shutdown systems having multiple or redundant trains have been preferentially selected in developing the safe shutdown equipment list.
- The safe shutdown systems chosen should be consistent with the normal and emergency operating procedures which are used to bring the plant to a safe shutdown condition.
- Operator action is permitted, if necessary, to accomplish the safe shutdown function provided that sufficient manpower and time are available and proper procedures are in place.
- A small (one-inch) LOCA inside containment is assumed.

Selection of safe shutdown equipment has also been based on avoiding reliance on instrument air and service air systems to the maximum practical extent. Although not an



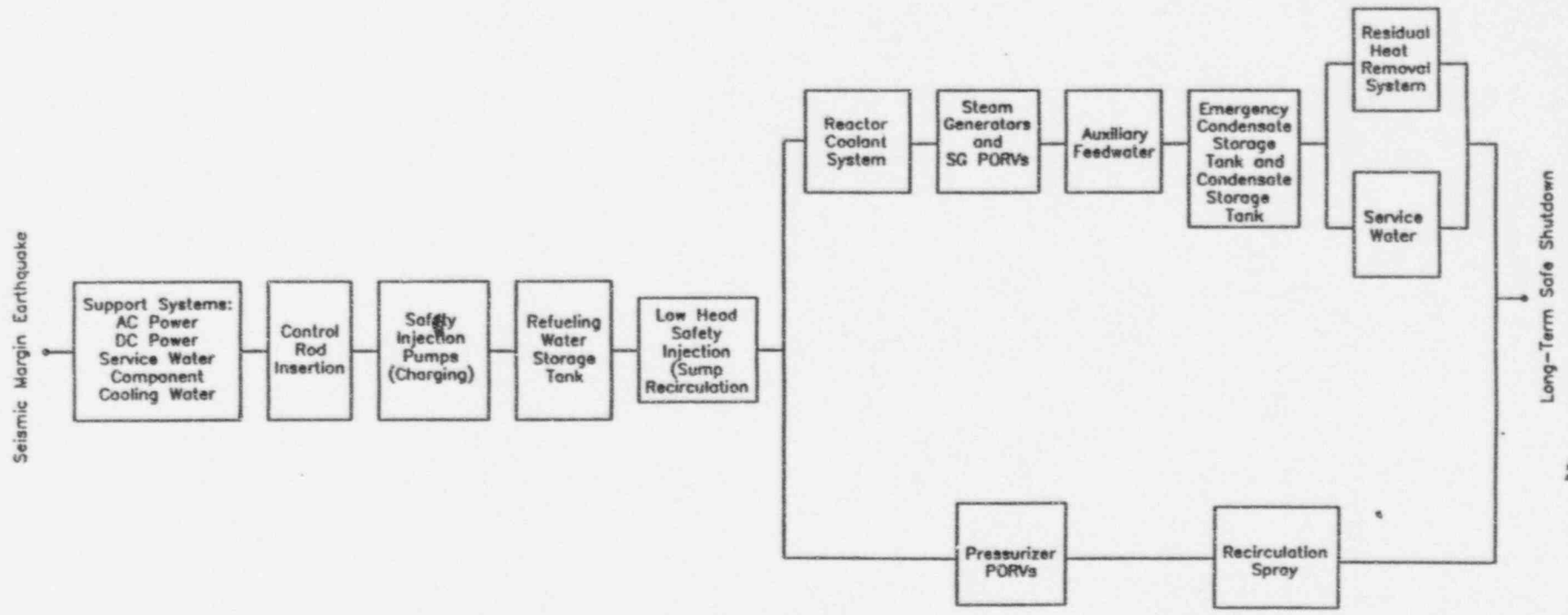


Figure 3-2. Success Path Logic Diagram, North Anna Power Station, Small Break Loss of Coolant Accident

EPRI NP-6041 requirement, selecting flowpaths not dependent on the availability of instrument or service air was judged to result in a higher level of confidence in acceptable operation of safe shutdown equipment following an earthquake.

A Safe Shutdown Equipment List (SSEL) was made for each of the four functions identified above for safe shutdown. SSELS were also developed for containment systems, supporting systems, and electrical systems, for a total of seven SSELS for each unit. These SSELS are contained in Appendices B through H. An attempt has been made to avoid duplicate equipment entries in Appendices B through H. For example, many Chemical and Volume Control System components are required for boration (reactivity control) and for reactor plant makeup (inventory control). Such components are listed only once and are listed in the reactivity control function.

A separate SSEL for each safe shutdown function was generated for each unit. Equipment and systems shared by Units 1 and 2 are listed with the Unit 1 SSELS (e.g., service water system).

### 3.3 SUCCESS PATHS, SAFE SHUTDOWN SYSTEMS, AND SAFE SHUTDOWN EQUIPMENT

The following four functions must be controlled after a Seismic Margin Earthquake to achieve safe shutdown:

- Reactor reactivity,
- Reactor coolant pressure,
- Reactor coolant inventory control, and
- Decay heat removal

The systems required to control these functions are shown in Figures 3-1 and 3-2 (Success Path Logic Diagrams) for an intact reactor coolant system pressure boundary and for a small (one-inch) Loss of Coolant Accident (LOCA) respectively. Each diagram shows the preferred path and an alternate path to safe shutdown. The safe shutdown success paths were chosen based on the requirements in NUREG 1407 and EPRI NP-6041, insights developed from the pilot application of the seismic margins method to the Catawba plant as described in EPRI NP-6359, and previous work performed to develop NAPS safe shutdown equipment lists for USI A-46. Descriptions of the preferred and alternate success paths are included later in this section.

A more detailed discussion of the systems involved in achieving each of the four safe shutdown functions is contained in Appendices B through E which provide the SSELS for the four safe shutdown functions.

The flow paths for the safe shutdown systems are highlighted on marked-up schematic drawings in Appendix N. Each item of equipment whose mark number is highlighted appears in a safe shutdown equipment list (SSEL). Items shown in pink are required for USI A-46 and seismic IPEEE; items shown in blue are required for seismic IPEEE only.

The NUREG-1407 requirements could be met by maintaining the plant in a hot shutdown condition; however, Virginia Power has elected to cool the reactor plant to cold shutdown. Consequently, the safe shutdown systems and equipment selected are sufficient to place the plant in a cold shutdown condition.

### **3.3.1 Intact Reactor Coolant Pressure Boundary Success Paths (Figure 3-1)**

**3.3.1.1 Preferred Success Path (Upper Path on Figure 3-1).** Plant shutdown starts with a turbine trip and a reactor trip as a result of the postulated loss-of-offsite power. Initial reactivity control is achieved by insertion of the control rods. Long-term reactivity is controlled by boration of the reactor coolant system to cold shutdown levels using the Chemical and Volume Control System (CVCS). The CVCS is also used to control reactor coolant inventory. Pressure control is achieved and maintained through the pressurizer by controlling the pressurizer heaters or activating the power operated relief valves (PORVs). Initial decay heat removal is accomplished by bleeding steam from the steam generator(s) to atmosphere through one (or more) PORVs. Steam generator feedwater inventory is maintained by the Auxiliary Feedwater System using water first from the Emergency Condensate Storage Tank (8 hours) and then from the Condensate Storage Tank. When the pressure and temperature of the RCS are less than 450 psig and 350°F, respectively, the Residual Heat Removal System is initiated and continues the decay heat removal function.

Electrical power, component cooling water, and service water systems are also included in this success path as support systems.

**3.3.1.2 Alternate Success Path (Lower Path on Figure 3-1).** Plant shutdown starts with a turbine trip and a reactor trip as a result of the postulated loss-of-offsite power. Initial reactivity control is achieved by insertion of the control rods. Decay heat is removed by bleeding steam or coolant from the pressurizer PORVs to the Pressurizer Relief Tank. A rupture disk on the Pressurizer Relief Tank will burst and the PORV discharge will flow to containment. Decay heat is removed from containment by the Recirculation Spray System. This success path requires electrical power, service water and component cooling water as support systems. The reactor coolant inventory lost through the pressurizer PORVs is made up by the safety injection system. Borated makeup water from the Safety Injection System also controls long term reactivity.

This success path is not preferred when the reactor coolant system pressure boundary is intact because it results in avoidable discharges of reactor coolant into containment thus causing unnecessary containment contamination.

### 3.3.2 Seismic Induced One-Inch Pipe Break Success Paths (Figure 3-2)

**3.3.2.1 Preferred Success Path (Upper Path on Figure 3-2).** Plant shutdown starts with a turbine trip and a reactor trip as a result of the postulated loss of off site power. Initial reactivity control is achieved by insertion of the control rods. The reactor coolant inventory lost through the postulated one inch pipe break is initially made up by the Safety Injection System from the Refueling Water Storage Tank (RWST). When the RWST is depleted, inventory is maintained through sump recirculation using the Low Head Safety Injection Pumps. Borated makeup water from the Safety Injection System also controls long term reactivity. Initial decay heat removal is accomplished by bleeding steam from the steam generator(s) to atmosphere through one (or more) PORVs. Steam generator feedwater inventory is maintained by the Auxiliary Feedwater System using water first from the Emergency Condensate Storage Tank (8 hours) and then from the Condensate Storage Tank. When the pressure and temperature of the RCS are less than 450 psig and 350°F, respectively, the Residual Heat Removal System is initiated and continues the decay heat removal function.

Electrical power, component cooling water and service water systems are included in this success path as support systems.

**3.3.2.2 Alternate Success Path (Lower Path on Figure 3-2).** Plant shutdown starts with a turbine trip and a reactor trip as a result of the postulated loss of offsite power. Initial reactivity control is achieved by insertion of the control rods. The reactor coolant inventory lost through the postulated one inch break is made up by the Safety Injection System. Borated water from the Safety Injection System also controls long term reactivity. If the coolant leak rate is insufficient to transport decay heat from the Reactor Coolant System to containment, the flow of reactor coolant to containment is increased by opening a pressurizer PORV. Decay heat is removed from containment by the Recirculation Spray System.

This success path requires electrical power, service water and component cooling water as support systems.

This success path is not preferred because it involves intentionally increasing the flow rate of reactor coolant to the containment to transport decay heat. In addition, it involves operation of the Recirculation Spray Systems which would contaminate equipment in containment.

## 3.4 CONTAINMENT

NUREG 1407 states that each licensee should develop a plan to assess containment performance during a seismic event to identify vulnerabilities that involve early failure of containment functions. NUREG 1407 lists containment integrity, containment isolation, prevention of bypass functions, and some specific systems depending on containment

design. NUREG 1407 also states that the internal events IPE should be used to determine the scope of systems for the examination.

Based on the guidance provided in NUREG 1407, the following actions were taken to identify the systems and functions that determine the equipment to be included in a containment SSEL (note that the SSEL nomenclature has been retained although the containment function is not restricted to safe shutdown scenarios):

- Review of NAPS containment systems as described in the FSAR and in systems training modules.
- Review of NUREG 1150, "Severe Accident Risks, An Assessment for Five U.S. Nuclear Power Plants," to identify characteristics affecting containment performance in severe accident scenarios. NUREG 1150 was used because an assessment of severe accident risk was not available for NAPS.

The review described above resulted in the following systems/functions being identified as providing the basis for a containment SSEL:

- Isolation of containment piping penetrations
- Quench and Recirculation Spray Systems
- Hydrogen Recombiners

## APPENDIX A

### **Safe Shutdown Equipment List (SSEL) Report, Composite SSEL, and Seismic Review SSEL**

This Appendix contains the SSEL Report, MPR-1201, Revision 1, prepared by MPR Associates, Inc. As discussed in Section 3.1, the composite SSEL and the seismic review SSEL in report MPR-1201 were revised as a result of the walkdowns and further review. Therefore, the current versions of these sections are provided.

## Appendix A

## DESCRIPTION OF SAFE SHUTDOWN EQUIPMENT LISTS

The purpose of this section is to describe the format of the safe shutdown equipment lists (SSELs) contained in the Appendices to this report. Safe Shutdown Equipment Lists in Appendices B through K of this report list safe shutdown equipment for resolution of both USI A-46 and seismic IPEEE. Since the format requirements for SSELs in the GIP are more specific and more rigorous than those in NUREG-1407 and EPRI NP-6041, all SSEL items are listed using the GIP format.

There is at least one record for each item of equipment included in each SSEL. This section describes the information included in each field in the SSEL.

<u>Entry</u>	<u>Description of Contents</u>
1. <u>Line No.</u>	This column contains a four digit record number. The furthestmost left digit corresponds to the SSEL number. The remaining digits comprise a sequential number which identifies the equipment along the flow path.
2. <u>Train</u>	This column contains one of the following "train" numbers which serves to group components required to complete the path for the safe shutdown function: <ul style="list-style-type: none"> <li>1 = Train 1; can be considered the primary train. Required by the GIP.</li> <li>2 = Train 2; can be considered the secondary, or redundant, train. Required by the GIP for active equipment. The notation "1, 2" has been used to denote equipment items that are not redundant.</li> <li>3 and up = Train numbers greater than 2 are not required by the GIP, but are functionally equivalent to Trains 1 or 2.</li> </ul>
3. <u>Equipment Class</u>	This column contains a number between 0 and 23. The number corresponds to the equipment class which relates an equipment item to the seismic experience data base. An R in this column indicates the item is a rugged piece of equipment for which no verification is required to

resolve USI A-46. Equipment classes 0-22 are common to USI A-46 and seismic IPEEE. These classes are defined in Chapter 3 of the GIP. Equipment Class 23 has been used for NSSS equipment and applies only to seismic IPEEE.

4. Mark Number

This column contains a NAPS component number, the plant-specific unique identifier as contained in the drawing used to prepare the SSEL.

For several of the items identified for safe shutdown, a component number could not readily be assigned from or found on the P&IDs or electrical drawings. Therefore, a unique identifier was assigned for each such item. Such component numbers are marked with an asterisk (\*).
5. System/  
Equipment  
Description

This column contains an abbreviation for the system in which the item of equipment is a part. A slash (/) separates the system designation from a description of the equipment. See the Index of Acronyms and Abbreviations found in the front matter for the meaning of the abbreviations used for the systems.
6. Drawing No./  
Rev./Zone

This column typically contains the P&ID or electrical drawing number (and sheet) which identifies the equipment described by the database record. When included, the zone where the equipment is identified on the drawing is indicated with a letter (row) and a number (column).
7. Building

This column identifies the building where the equipment is located. See the Index of Acronyms and Abbreviations for the meaning of the abbreviations.
8. Floor Elevation

This column contains the elevation of the building floor from which the equipment can be seen.
9. Room or  
Row/Column

This entry identifies the room or nearest building row/column intersection where the equipment is located. For equipment inside containment, an azimuthal designator from 1.0 through 18.0 is used. In some cases a note is specified in this column. The notes are listed in Appendix L and give a detailed location of the item.



10. Sort This field assists in manipulating the database. This field contains any one of the following four options:
- (-)--No seismic or relay review needed,
  - "S"--seismic review only,
  - "R"--relay review only,
  - "S R"--seismic and relay review needed.
11. Notes This column may contain a number which identifies a note (applicable to the equipment) found in Appendix L. An "T" entered in this column indicates that the line applies only to IPEEE concerns and does not apply to USI A-46. An "A" in this column indicates that the line applies to A-46 and intact plant IPEEE scenarios. All lines with an "A" in the Notes column will have a corresponding line (with the same line no.) with an "T" in the Notes column.
12. Normal State This entry identifies the normal state of the equipment during normal operation of the plant (e.g., open, closed, or op/cl for valves; running or off for pumps; on or off for electrically powered instrumentation and controls, etc.).
13. Desired State This entry identifies the desired state of the equipment required for the safe shutdown function.
14. Power Req'd? This entry identifies whether electrical control or operating power is needed to achieve or maintain the desired state of the equipment. A "Yes" in this entry indicates that power must either be maintained or provided to the equipment to have it operate as desired.
15. Supporting System Drawing No./Revision This column contains the electrical drawing or instrument loop drawing which identifies the operating and control power sources and the corresponding drawing revision used in developing the SSEL. The column is for convenience in preparing the SSEL and has not been used for every item.

16. Required Interconnections and Supporting Components

This column includes the supporting equipment (by equipment mark number) or, in very few cases, the supporting instrument loop (F-flow, T-temperature, P-pressure, etc.) needed by the equipment described in this data base record for it to perform its safe shutdown function. Since each supporting or associated component has a separate data base record, this column is for convenience in preparing the SSEL and has not been used for every item.

## Appendix B

## REACTIVITY CONTROL FUNCTION

This appendix identifies the safe shutdown equipment required to control reactivity in the reactor core. Initial reactivity control results from control rod insertion (SCRAM) initiated by either an automatic Reactor Protection System trip or from an operator-initiated manual trip. Boric acid addition is then used to compensate for xenon decay and plant cooldown.

When the unit is at power, the quantity of boric acid retained in the refueling water storage tank (RWST) or the boric acid storage tank (BAST) exceeds the quantity required to compensate for xenon decay and subsequent reactor cooldown. The availability of sufficient boron is required by plant technical specifications.

Boration to cold shutdown conditions will be provided by the Chemical and Volume Control System (CVCS) from the BAST.

When the unit is shut down, two separate and independent flow paths can be used for reactor coolant makeup and boration: the seal injection lines to the seals of the reactor coolant pumps (RCP), and the normal charging line to the loop 2 cold leg. The equipment of the CVCS required to operate to achieve the system safety function is listed in the SSEL.

For plant shutdown, charging and boration will be accomplished by operating a minimum of one charging pump per unit. The pump for the affected unit will take its suction from the BAST and inject borated water to the loop 2 cold leg or the RCP seal injection lines into the RCS.

By procedure, boration is required to cold shutdown (CSD) boron concentration before cooldown commences. By accounting for xenon concentration, cold shutdown reactivity is initially achieved by control rod insertion. This permits boration to proceed in parallel with cooldown and avoids the need for discharge from the RCS to the Boron Recovery System (BRS) via the CVCS. Taking credit for xenon in the cold shutdown reactivity determination requires that boration be completed within 24 hours of reactor shutdown to offset the natural decay of xenon. This time restriction can be readily satisfied by the proposed safe shutdown actions.

Monitoring the reactor coolant temperature, the reactor coolant boron concentration, and the control rod position is an acceptable alternative to monitoring neutron flux for the reactivity control safe shutdown function. Loss of instrument air will cause a partial

loss of sampling capability; however, sufficient sampling will still be possible from the RCS hot leg, cold leg and RHR system.

Power range, intermediate range, and source range nuclear instruments and the sampling system (for boron concentration) are used to monitor the reactivity control function. GIP does not require neutron detectors to be listed in the SSEL for USI A-46, however, these items are included for seismic IPEEE.

The flowpaths used for the reactivity control function are highlighted on the flow diagrams in Appendix N and safe shutdown equipment items in these flowpaths are listed on the SSEL provided in this Appendix. All items listed in the Reactivity Control SSEL have line numbers from 1001 to 1999.

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Fir. Elev.	LOCATION Rm. or Row/Col.	OP. ST. (Normal)	Desired	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
1005	1	21	1-CH-E-3	CH/REGENERATIVE HEAT EXCHANGER	11715-FN-09581/14/ES	CONTHT	241'	11	S	--	N/A	N/A	MO	VIMS27221-27223 27227-27230 11715-FN-001C	N/A
1048	1	21	1-CH-TK-2	CH/VOLUME CONTROL TANK (VCT)	11715-FN-09581/21/C6	AUX	275'	9.5/J	S	--	N/A	N/A	MO	N/A	1-CH-L1-1115;1-CH-L1-1112
1049	1	18	1-CH-L1-1115	CH/VCT LEVEL	11715-FN-09581/21/D5	AUX	280'	9.5/J	S	--	ON	ON	YES	11715-CH-012/6	N/A
1050	1	20	1-CH-L1-1115	CH/VCT LEVEL	11715-CH-012/6	S8	277'	CR	S	R	36	ON	ON	N/A	1-EI-CB-03
1051	1	18	1-CH-L1-1112	CH/VCT LEVEL	11715-FN-09581/21/D5	AUX	275'	9.5/J	S	--	ON	ON	YES	11715-CH-011/9	N/A
1052	1	20	1-CH-L1-1112	CH/VCT LEVEL	11715-CH-011/9	S8	277'	CR	S	R	36	ON	ON	N/A	1-EI-CB-03
1053	1	08A	1-CH-MOV-1115C	CH/VCT OUTLET TO CHARGING PUMPS	11715-FN-09581/21/C6	AUX	278'	9/J	R	--	OPEN	OPEN	MO	N/A	1-CH-L1-1112
1054	1	08A	1-CH-MOV-1115E	CH/VCT OUTLET TO CHARGING PUMPS	11715-FN-09581/21/C6	AUX	278'	9/J	R	--	OPEN	OPEN	MO	N/A	1-CH-L1-1112
1055	1	08A	1-CH-MOV-1267A	CH/CHARGING PUMP A INLET ISOL	11715-FN-09582/24/C3	AUX	253'	8.2/J	R	--	OPEN	OPEN	MO	N/A	N/A
1056	2	08A	1-CH-MOV-1269A	CH/CHARGING PUMP B INLET ISOL	11715-FN-09582/24/C3	AUX	253'	8.5/J	R	--	OPEN	OPEN	MO	N/A	N/A
1057	3	08A	1-CH-MOV-1270A	CH/CHARGING PUMP C INLET ISOL	11715-FN-09582/24/C7	AUX	253'	8.6/J	R	--	OPEN	OPEN	MO	N/A	N/A
1058	1	08A	1-SI-MOV-1863A	SI/HSI HRD TO CCPs	11715-FN-09642/23/C3	AUX	244'	7.6/J	R	A	CLOSED	CLOSED	MO	N/A	N/A
1059	1	08A	1-SI-MOV-1863A	SI/HSI HRD TO CCPs	11715-FN-09642/23/C3	AUX	244'	7.6/J	S	R	1	CLOSED	OPEN	N/A	1-EP-AC-19
1060	2	08A	1-SI-MOV-1863B	SI/HSI TO CHARGING PUMP A SUCTION X CONN	11715-FN-09582/24/D8	SFGD	244'	7.6/J	S	R	1,32	CLOSED	OPEN	N/A	1-EP-AC-21
1061	2	08A	1-SI-MOV-1863B	SI/HSI TO CHARGING PUMP A SUCTION X CONN	11715-FN-09582/24/D8	SFGD	244'	7.6/J	R	A,32	CLOSED	CLOSED	MO	N/A	1-EP-AC-21
1062	1	05	1-CH-P-1A	CH/CENTRIFUGAL CHARGING PUMP A; (CCP A)	11715-FN-09582/24/C4	AUX	245'	9.5/J	S	R	--	ON	ON	YES	N/A
1063	2	05	1-CH-P-1B	CH/CENTRIFUGAL CHARGING PUMP B; (CCP B)	11715-FN-09582/24/C6	AUX	245'	9.5/J	S	R	--	ON	ON	YES	N/A
1064	3	05	1-CH-P-1C	CH/CENTRIFUGAL CHARGING PUMP C; (CCP C)	11715-FN-09582/24/C8	AUX	245'	9.5/J	S	R	--	ON	ON	YES	N/A
1065	1	06A	1-CH-MOV-1275A	CH/CCP A TO SEAL WATER INJ. HEADER	11715-FN-09582/24/D3	AUX	257'	8.2/J	R	--	OPEN	OPEN	MO	N/A	N/A

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAVID W. JACOBS / ENGINEER  
  
 MARCH 11, 1993

DAVID J. WERDER / ENGINEER  
  
 MARCH 11, 1993

NORTH AREA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
REACTIVITY CONTROL FUNCTION  
(Sorted by Line Number)

Data Base File Name/Date/Time: MA1\_SSEL.DBF / 03/11/93 / 09:33:18  
Sort Criteria: Line Number  
Filter Criteria: (Line Number < 2000)  
Program File Name & Version: SSEL V0.0

LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Req. No./Rev./Zone	Building	Fir. Elev.	EQUIPMENT LOCATION	Sort Notes	Normal	Desired	REQ'D	DWG. NO./REV.	SUPPORTING COMPONENTS	REQ'D INTERCONNECTIONS
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
1085	1	088	1-CH-SOV-1310	11715-CH-089/3	COMMIT	222'	11.5	R	--	VENT	NO	11715-FR-0010	N/A	
1086	1	08A	1-SI-MOV-1867A	11715-FM-096A3/22/04	AUX	244'	7/3	R	--	CLOSED	CLOSED	NO	N/A	
1087	1	08A	1-SI-MOV-1867B	11715-FM-096A3/22/04	AUX	244'	7/3	R	--	CLOSED	CLOSED	NO	N/A	
1087A	1	21	1-SI-TR-2	11715-FM-096A3/22/05	AUX	244'	NOTE 10	S	23	N/A	NO	N/A	N/A	
1087H	1	08A	1-SI-MOV-1867C	11715-FM-096A3/22/E7	AUX	244'	6/3	R	--	CLOSED	CLOSED	NO	N/A	
1087I	2	08A	1-SI-MOV-1867D	11715-FM-096A3/22/07	AUX	244'	6/3	R	--	CLOSED	CLOSED	NO	N/A	
1088	1	08A	1-SI-MOV-1869B	11715-FM-096A3/22/AB	AUX	244'	6/3	R	A	CLOSED	CLOSED	NO	N/A	
1088	1	08A	1-SI-MOV-1869B	11715-FM-096A3/22/AB	AUX	244'	6/3	R	A	CLOSED	CLOSED	NO	N/A	
1089	1	08A	1-SI-MOV-1869B	11715-FM-096A3/22/AB	AUX	244'	6/3	S	R	1	CLOSED	OPEN	YES	N/A
1090	1	08A	1-CH-MOV-1370	11715-FM-095C2/13/F4	AUX	259'	9/L	R	--	OPEN	OPEN	NO	N/A	
1091	1	07	1-CH-MOV-1186	11715-FM-095C2/13/F4	AUX	245'	8.5/L	--	--	OPEN	OPEN	NO	11715-CH-068/1	
1092	1	18	1-CH-E/P-1186	11715-CH-068/1	AUX	245'	8.5/L	R	--	ON	ON	YES	N/A	
1093	1	20	1-CH-RIC-1186	11715-CH-068/1	SB	277'	CR	R	--	ON	ON	YES	N/A	
1094	2	R	1-CH-293	11715-FM-095C2/13/E3	AUX	244'	9/L	--	15	CLOSED	OPEN	NO	N/A	
1095	2	R	1-SI-77	11715-096A3/22/F7	AUX	244'	--	--	A	CLOSED	CLOSED	NO	N/A	
1095	2	R	1-SI-77	11715-096A3/22/F7	AUX	244'	--	--	1,15	CLOSED	OPEN	NO	N/A	
1097	2	R	1-CH-302	11715-FM-095C2/13/C3	AUX	252'	9.5/M	--	15	CLOSED	OPEN	NO	N/A	
1098	2	R	1-CH-306	11715-FM-095C2/13/C3	AUX	252'	9.5/M	--	15	CLOSED	OPEN	NO	N/A	
1099	1, 2	18	1-CH-FT-1124	11715-FM-095C2/13/C3	AUX	248'	8.5/MJ	S	R	20	ON	ON	YES	11715-CH-058/4
1100	1, 2	20	1-CH-FI-1124A	11715-CH-058/4	SB	277'	CR	S	R	20, 36	ON	ON	YES	N/A
1101	1, 2	18	1-CH-FT-1127	11715-FM-095C2/13/B3	AUX	248'	8.5/MJ	S	R	20	ON	ON	YES	11715-CH-059/4
1102	1, 2	20	1-CH-FI-1127A	11715-CH-059/4	SB	277'	CR	S	R	20, 36	ON	ON	YES	N/A

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAVID W. JACOBS / ENGINEER

*David W. Jacobs*  
Signature

MARCH 11, 1993

DAVID J. WEDDER / ENGINEER

*David J. Wedder*  
Signature

MARCH 11, 1993

NORTH ANNA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
REACTIVITY CONTROL FUNCTION  
(Sorted by Line Number)

Data Base File Name/Date/Time: NA1\_SSEL.DBF / 03/11/93 / 09:33:18  
Sort Criteria: Line Number  
Filter Criteria: (Line Number < 2000)  
Program File Name & Version: SSEM v0.0

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	OP. ST.	Normal	Desired	POWER REQ'D?	SUPPORTING SYS. DMG. NO./REV.	SYS. & SUPPORTING COMPONENTS		
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	
1103	1, 2	18	1-CH-FT-1130	CH/RCP SEAL WATER INJECTION FLOW	11715-FH-095C2/13/A3	AUX	248'	8.5/HJ	S R	20	ON	ON	YES	11715-CH-060/5	N/A
1104	1, 2	20	1-CH-FI-1130A	CH/RCP SEAL WATER INJECTION FLOW	11715-CH-060/5	SB	277'	CR	S R	20, 36	ON	ON	YES	N/A	1-EI-CB-03
1105	1, 2	07	1-CH-HCV-1303A	CH/SEAL LEAKOFF ISOL RCP-1	11715-FH-095C2/13/E8	CONTMT	219'	18.5	--	21	OPEN	OPEH	NO	11715-CH-065/3; 11715-FK-001E	N/A
1106	1, 2	07	1-CH-HCV-1303B	CH/SEAL LEAKOFF ISOL RCP-2	11715-FH-095C2/13/E6	CONTMT	219'	11.5	--	21	OPEN	OPEH	NO	11715-CH-066/3; 11715-FK-001D	N/A
1107	1, 2	07	1-CH-HCV-1303C	CH/SEAL LEAKOFF ISOL RCP-3	11715-FH-095C2/13/E5	CONTMT	219'	7	--	21	OPEN	OPEH	NO	11715-CH-067/3; 11715-FK-001D	N/A
1108	1, 2	08B	1-CH-SOV-1303A	CH/SEAL WATER LEAKOFF PILOT	11715-CH-065/3	CONTMT	218'	18.5	R	21,36	VENT	VENT	NO	11715-FK-001E	1-CH-HCV-1303A
1109	1, 2	08B	1-CH-SOV-1303B	CH/SEAL WATER LEAKOFF PILOT	11715-CH-066/3	CONTMT	219'	11.5	R	21,36	VENT	VENT	NO	11715-FK-001D	1-CH-HCV-1303B
1110	1, 2	08B	1-CH-SOV-1303C	CH/SEAL WATER LEAKOFF PILOT	11715-CH-067/3	CONTMT	219'	7	R	21,36	VENT	VENT	NO	11715-FK-001D	1-CH-HCV-1303C
1117	2	07	1-CH-HCV-1307	CH/SEAL BYPASS OUTLET ISOL	11715-FH-095C2/13/E4	CONTMT	255' A	8.5	--	--	CLOSED	CLOSED	NO	11715-CH-074/4; 11715-FK-001D	1-CH-SOV-1307
1118	2	08B	1-CH-SOV-1307	CH/SEAL BYPASS OUTLET ISOL PILOT	11715-CH-074/4	CONTMT	255' A	8.5	R	36	VENT	VENT	NO	11715-FK-001D	1-CH-HCV-1307
1119	1, 2	08A	1-CH-MOV-1380	CH/SEAL WATER RETURN ISOL	11715-FH-095C2/13/F4	CONTMT	241'	8	R	A,21	OPEN	OPEN	NO	VIMS26641,26846	N/A
1119	1	08A	1-CH-MOV-1380	CH/RCP SEALWATER RETURN CONTMT ISOL	11715-FH-095C2/13/F4	CONTMT	241'	8	S R	I	OPEN	CLOSED	YES	N/A	1-EP-MC-20
1132	1, 2	08A	1-CH-MOV-1381	CH/RCP SEAL WATER INJECTION TO SEAL WATER HX	11715-FH-095B1/21/C8	AUX	244'	7/J	R	A,21	OPEN	OPEN	NO	N/A	N/A
1132	2	08A	1-CH-MOV-1381	CH/RCP SEAL RETURN CONTMT ISOL	11715-FH-095B1/21/C8	AUX	244'	7/J	S R	I	OPEN	CLOSED	YES	N/A	1-EP-MC-22
1134	2	R	1-CH-209	CH/RCP SEAL WATER FILTER BYPASS	11715-FH-095B1/21/B8	AUX	244'	9/J	--	15	CLOSED	OPEH	NO	N/A	N/A
1135	1	08A	1-SI-MOV-1836	SI/CCP TO COLD LEGS 1, 2, 3	11715-FH-096A3/22/C8	AUX	244'	6/J	R	A,21	CLOSED	CLOSED	NO	N/A	N/A
1135	1	08A	1-SI-MOV-1836	SI/CCP TO COLD LEGS 1, 2, 3	11715-FH-096A3/22/C8	AUX	244'	6/J	S R	I,21	CLOSED	OPEN	YES	N/A	1-EP-MC-22
1136	1	08A	1-SI-MOV-1869A	SI/CCP TO HOT LEGS 1, 2, 3	11715-FH-096A3/22/C8	AUX	244'	6/J	R	A,21	CLOSED	CLOSED	NO	N/A	N/A
1136	1	08A	1-SI-MOV-1869A	SI/CCP TO HOT LEGS 1, 2, 3	11715-FH-096A3/22/C8	AUX	244'	6/J	S R	I,21	CLOSED	OPEN	YES	N/A	1-EP-MC-19

CERTIFICATION:

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DANN W. JACOBS / ENGINEER

*D. W. Jacobs*  
Signature

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

*D. J. Werder*  
Signature

MARCH 11, 1993

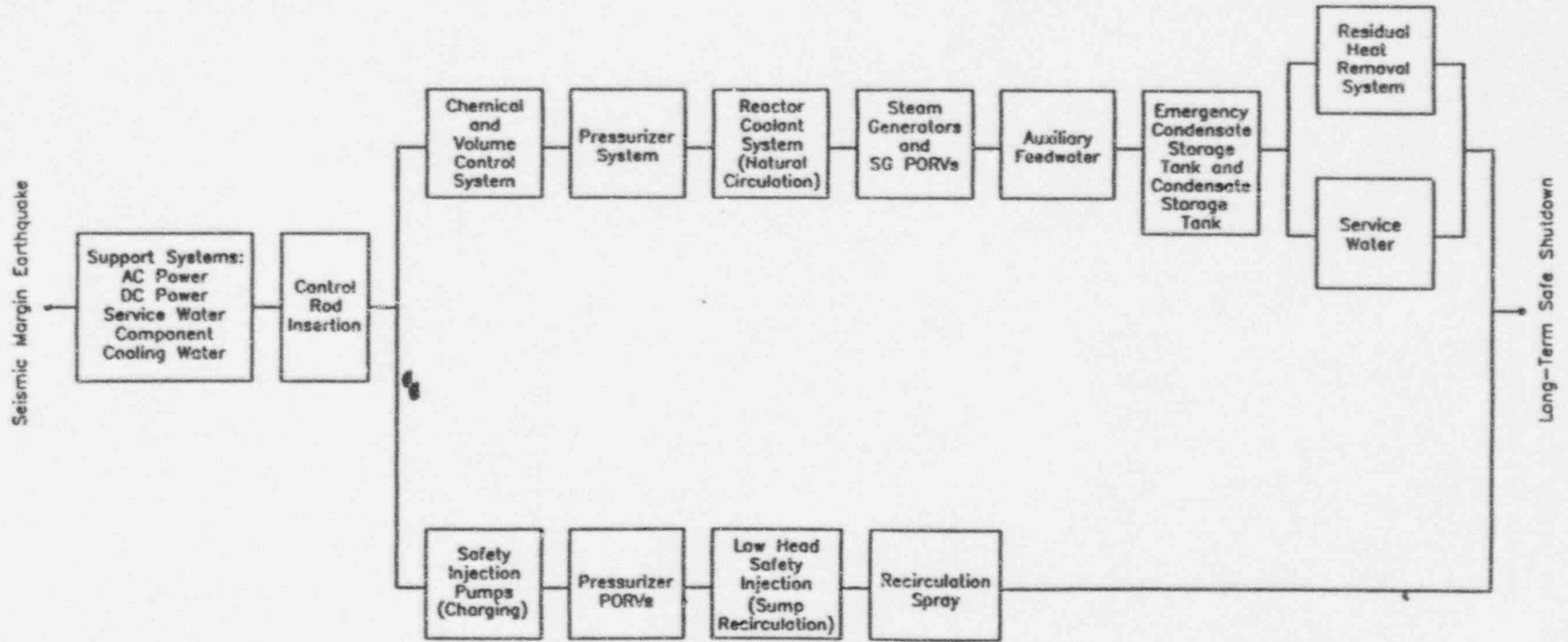


Figure 3-1. Success Path Logic Diagram, North Anna Power Station, Intact Reactor Coolant System Pressure Boundary



NORTH ANNA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
REACTIVITY CONTROL FUNCTION  
(Sorted by Line Number)

Data Base File Name/Date/Time: MA1\_SSEL.DBF / 03/11/93 / 09:33:18  
Sort Criteria: Line Number  
Filter Criteria: (Line Numbers < 2000)  
Program File Name & Version: SSEL v0.0

LINE NO.	EQUIP TRNAM CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	Equipment Flr. Eiv.	LOCATION Ea. or Row/Col.	Sort	Notes	Normal	Desired	REQ'D INTERCONNECTIONS			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
1140	1	21	1-CH-TK-1A	CH/BORIC ACID STORAGE TANK A (BAST)	11715-FM-095A1/22/E3	AUX	274'	8.5/G	S	--	N/A	N/A	NO	N/A	1-CH-LT-1106/1161; 1-CH-TIC-1107/1162
1141	2	21	1-CH-TK-1B	CH/BORIC ACID STORAGE TANK B (BAST)	11715-FM-095A1/22/E5	AUX	274'	9/G	S	--	N/A	N/A	NO	N/A	1-CH-LT-1108/1163; 1-CH-TIC-1109/1164
1142	1	18	1-CH-LT-1106	CH/BAST A LEVEL	11715-FM-095A1/22/E2	AUX	289'	8.5/G	S	R	--	ON	YES	11715-CH-046/3	N/A
1143	1	18	1-CH-LT-1161	CH/BAST A LEVEL	11715-FM-095A1/22/E4	AUX	289'	9.4/N	S	R	--	ON	YES	11715-CH-042/3	N/A
1144	2	18	1-CH-LT-1108	CH/BAST B LEVEL	11715-FM-095A1/22/E4	AUX	289'	9/G	S	R	--	ON	YES	11715-CH-047/4	N/A
1145	1	18	1-CH-TIC-1107	CH/BAST A TEMPERATURE	11715-FM-095A1/22/E4	AUX	274'	8.5/N	S	R	--	ON	YES	11715-CH-044/3	N/A
1146	1	18	1-CH-TIC-1162	CH/BAST A TEMPERATURE	11715-FM-095A1/22/E3	AUX	274'	9.1/N	S	R	--	ON	YES	11715-CH-045/2	N/A
1147	2	18	1-CH-TIC-1109	CH/BAST B TEMPERATURE	11715-FM-095A1/22/E5	AUX	274'	9.1/GR	S	R	--	ON	YES	11715-CH-041/6	N/A
1148	1	9	1-CH-H-6A	CH/BAST A STRIP HEATER	11715-FM-095A1/22/E3	AUX	259'	7/J	S	R	--	ON	YES	11715-CH-044/3	N/A
1149	1	0	1-CH-H-6B	CH/BAST A STRIP HEATER	11715-FM-095A1/22/E3	AUX	262'	7/J	S	R	--	ON	YES	11715-CH-045/2	N/A
1150	2	0	1-CH-H-7A	CH/BAST B STRIP HEATER	11715-FM-095A1/22/E5	AUX	260'	11.2/J	S	R	--	ON	YES	11715-CH-041/6	N/A
1151	2	0	1-CH-H-7B	CH/BAST B STRIP HEATER	11715-FM-095A1/22/E5	AUX	260'	7/J	S	R	--	ON	YES	11715-CH-043/3	N/A
1158	1	20	1-CH-LI-1106	CH/BAST A LEVEL	11715-CH-046/3	SB	277'	CR	S	R	--	ON	YES	N/A	N/A
1159	1	20	1-CH-LI-1161	CH/BAST A LEVEL	11715-CH-042/3	SB	277'	CR	S	R	--	ON	YES	N/A	N/A
1160	2	20	1-CH-LI-1108	CH/BAST B LEVEL	11715-CH-047/4	SB	277'	CR	S	R	--	ON	YES	N/A	N/A
1161	1	05	1-CH-P-2A	CH/BORIC ACID TRANSFER PUMP (BATP)	11715-FM-095A1/22/B4	AUX	261'	9.5/NJ	S	R	--	ON	YES	N/A	N/A
1162	2	05	1-CH-P-2B	CH/BORIC ACID TRANSFER PUMP (BATP)	11715-FM-095A1/22/B5	AUX	261'	9.5/NJ	S	R	--	OFF	YES	N/A	N/A
1164	1, 2	R	1-CH-85	CH/BORIC ACID FILTER BYPASS	11715-FM-095A1/22/C8	AUX	259'	9/N	--	15	CLOSED	OPEN	NO	N/A	N/A
1164A	2	R	1-CH-111	CH/BATP SUCTION ALIGNMENT VALVE	11715-FM-095A1/22/A5	AUX	261'	9.3/NJ	--	15	CLOSED	OP/CL	NO	N/A	N/A
1164B	1	R	1-CH-80	CH/BATP SUCTION ALIGNMENT VALVE	11715-FM-095A1/22/A4	AUX	261'	9.5/NJ	--	15	CLOSED	OP/CL	NO	N/A	N/A
1164C	2	R	1-CH-87	CH/BATP DISCH ALIGNMENT VALVE	11715-FM-095A1/22/C4	AUX	261'	9.5/NJ	--	15	CLOSED	OP/CL	NO	N/A	N/A
1167	2	R	1-SI-303	SI/BATP TO BIT ISOL	11715-FM-095A3/22/E6	AUX	244'	--	--	15	OPEN	CLOSED	NO	N/A	N/A

CERTIFICATION:

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DAVID W. JACOBS / ENGINEER MARCH 11, 1993

DAVID J. WERDER / ENGINEER MARCH 11, 1993

*David W. Jacobs*  
*David J. Werder*  
Signature

NORTH ANNA UNIT 3  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
REACTIVITY CONTROL FUNCTION  
(Sorted by Line Number)

Data Base File Name/Date/Time: NA1\_SSEL.DBF / 03/11/93 / 09:33:18  
Sort Criteria: Line Number  
Filter Criteria: (Line Number < 2000)  
Program File Name & Version: SSEL v0.0

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr./Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. ST. Normal	Desired	POWER REQD?	SUPPORTING SYS. DNG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
1168	2	18	1-CH-FT-1113	CH/BAST TO VCT FLOW	11715-FM-09581/21/B4	AUX	278'	8.5/J	S R	--	ON	ON	YES	N/A	N/A
1169	2	07	1-CH-FCV-1113A	CH/BAST TO VCT CONTROL	11715-FM-09581/21/C3	AUX	278'	8.5/J	--	A,3	OPEN	OPEN	YES	11715-CH-017/11	1-CH-SOV-1113A1;1-CH-SOV-1113A2
1169	2	07	1-CH-FCV-1113A	CH/BAST TO VCT CONTROL	11715-FM-09581/21/C3	AUX	278'	8.5/J	S	1,3	OPEN	CLOSED	NO	11715-CH-017/11	1-CH-SOV-1113A1 1-CH-SOV-1113A2
1171	2	08B	1-CH-SOV-1113A1	CH/BAST TO VCT CONTROL PILOT	11715-CH-017/11	AUX	278'	8.5/J	R	A	AIR	AIR	YES	11715-CH-017/11	1-EP-CB-26A
1171	2	08B	1-CH-SOV-1113A1	CH/BAST TO VCT CONTROL PILOT	11715-CH-017/11	AUX	278'	8.5/J	S R	I	AIR	VENT	NO	11715-CH-017/11	1-EP-CB-26A
1172	2	08B	1-CH-SOV-1113A2	CH/BAST TO VCT CONTROL PILOT	11715-CH-017/11	AUX	278'	8.5/J	R	A	AIR	AIR	YES	11715-CH-017/11	1-EP-CB-26A
1172	2	08B	1-CH-SOV-1113A2	CH/BAST TO VCT CONTROL PILOT	11715-CH-017/11	AUX	278'	8.5/J	S R	I	AIR	VENT	NO	11715-CH-017/11	1-EP-CB-26A
1176	2	R	1-CH-241	CH/MANUAL EMERGENCY BORATE VALVE	11715-FM-09581/21/B4	AUX	274'	8.6/J	--	15	CLOSED	OPEN	NO	N/A	N/A
1177	1	18	1-CH-FT-1110	CH/BAST TO VCT FLOW	11715-FM-09581/21/B4	AUX	280'	8.5/JK	S R	--	ON	ON	YES	11715-CH-015/4	N/A
1178	1	20	1-CH-FI-1110	CH/BAST TO VCT FLOW	11715-CH-015/4	SB	277'	CR	S R	--	ON	ON	YES	N/A	N/A
1179	1	08A	1-CH-MOV-1350	CH/EMERGENCY BORATE VALVE	11715-FM-09581/21/B5	AUX	276'	8.5/J	S R	--	CLOSED	OPEN	YES	N/A	N/A
1191	2	07	1-RC-HCY-1557A	RC/RC XS LETDOWN ISOL	11715-FM-093A1/19/E7	CONTMT	242'	1 A	--	28	CLOSED	CLOSED	NO	11715-RC-051/4 VIMS27749-27750 11715-FK-1E	1-RC-SOV-1557A
1192	2	08B	1-RC-SOV-1557A	RC/RC XS LETDOWN ISOL PILOT	11715-RC-051/4	CONTMT	245'	13 A	R	--	VENT	VENT	NO	VIMS27749-27750 11715-FK-001E	N/A
1193	2	07	1-RC-HCY-1557B	RC/RC XS LETDOWN ISOL	11715-FM-093A2/19/F7	CONTMT	243'	13 B	--	28	CLOSED	CLOSED	NO	11715-RC-052/4 VIMS28208-28211 11715-FK-1D	1-RC-SOV-1557B
1194	2	08B	1-RC-SOV-1557B	RC/RC XS LETDOWN ISOL PILOT	11715-RC-052/4	CONTMT	243'	13 B	R	--	VENT	VENT	NO	VIMS28208-28211 11715-FK-001D	N/A
1195	2	07	1-RC-HCY-1557C	RC/RC XS LETDOWN ISOL	11715-FM-093A3/22/F3	CONTMT	243'	7.5 C	--	28	CLOSED	CLOSED	NO	11715-RC-053/4 VIMS28616-28618 11715-FK-001D	1-RC-SOV-1557C
1196	2	08B	1-RC-SOV-1557C	RC/RC XS LETDOWN ISOL PILOT	11715-RC-053/4	CONTMT	243'	7.5 C	R	--	VENT	VENT	NO	VIMS28616-28618 11715-FK-001D	N/A

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DANN W. JACOBS / ENGINEER

*D. Jacobs*  
Signature

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

*D. Werder*  
Signature

MARCH 11, 1993

LINE NO.	ENJIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Ftr. Elev.	LOCATION Rm. or Row/Col.	SORT MOVES	Normal	Desired	REQ'D INTERCONNECTIONS			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
1063	2	08A	1-CH-MOV-1275B	CH/CCP B TO SEAL WATER HX HEADER	11715-FH-09582/24/05	AUX	257'	8-6/J	R	--	OPEN	NO	N/A	N/A
1064	3	08A	1-CH-MOV-1275C	CH/CCP C TO SEAL WATER HX HEADER	11715-FH-09582/24/07	AUX	257'	8-6/J	R	--	OPEN	NO	N/A	N/A
1065	1	08A	1-CH-MOV-1286A	CH/CCP A TO BIT & REGEN HX	11715-FH-09582/24/24	AUX	257'	8-2/J	R	--	OPEN	NO	N/A	N/A
1066	2	08A	1-CH-MOV-1266B	CH/CCP B TO BIT & REGEN HX	11715-FH-09582/24/26	AUX	257'	8-6/J	R	--	OPEN	NO	N/A	N/A
1067	3	08A	1-CH-MOV-1266C	CH/CCP C TO BIT & REGEN HX	11715-FH-09582/24/28	AUX	257'	8-6/J	R	--	OPEN	NO	N/A	N/A
1068	1	08A	1-CH-MOV-1287A	CH/CCP A TO LOOP FILL	11715-FH-09582/24/24	AUX	257'	8-2/J	R	--	OPEN	NO	N/A	N/A
1069	2	08A	1-CH-MOV-1287B	CH/CCP B TO LOOP FILL	11715-FH-09582/24/28	AUX	257'	8-6/J	R	--	OPEN	NO	N/A	N/A
1070	3	08A	1-CH-MOV-1287C	CH/CCP C TO LOOP FILL	11715-FH-09582/24/28	AUX	257'	8-6/J	R	--	OPEN	NO	N/A	N/A
1072	1, 2	08A	1-CH-MOV-1373	CH/CCP HEADER TO SEAL WATER HX	11715-FH-09581/21/08	AUX	250'	9/L	R	--	OPEN	NO	N/A	N/A
1073	1, 2	21	1-CH-E-1	CH/SEAL WATER HEAT EXCHANGER	11715-FH-09581/21/06	AUX	245'	12/H	S	--	N/A	N/A	11715-CH-001/7	COMPONENT COOLING WATER
1074	1	08A	1-CH-MOV-12039B	CH/CCP's TO REGEN HX	11715-FH-095C1/14/03	AUX	245'	7/K	R	--	OPEN	NO	N/A	N/A
1075	1	07	1-CH-FCV-1122	CH/CHARGING FLOW TO REGEN HX	11715-FH-095C1/14/04	AUX	245'	12/H	R	--	OPEN	NO	11715-CH-001/7	1-CH-E/P-1122;1-CH-FT-1122
1076	1	18	1-CH-E/P-1122	CH/CHARGING FLOW TO REGEN HX	11715-CH-001/7	AUX	245'	12/H	R	--	ON	YES	N/A	N/A
1077	1	18	1-CH-FT-1122	CH/CHARGING FLOW TO REGEN HX	11715-FH-095C1/14/04	AUX	245'	12/H	S	R	--	ON	YES	11715-CH-001/7
1078	1	20	1-CH-FT-1122A	CH/CHARGING FLOW TO REGEN HX	11715-CH-001/7	SB	277'	CR	S	R	36	ON	YES	N/A
1079	1	20	1-CH-FC-1122C	CH/CHARGING FLOW TO REGEN HX	11715-CH-001/7	SB	277'	CR	S	R	--	ON	YES	N/A
1080	2	R	1-CH-289	CH/CHARGING FLOW TO REGEN HX BYPASS	11715-FH-095C1/14/04	AUX	244'	6/H	--	15	CLOSED	OPEN	NO	N/A
1081	1	08A	1-CH-MOV-1289A	CH/CHARGING FLOW TO REGEN HX	11715-FH-095C1/14/04	AUX	244'	6/H	R	--	OPEN	NO	N/A	N/A
1082	1	19	1-CH-TE-1123	CH/REGEN HX OUTLET CHARGING TEMP	11715-FH-095C1/14/05	CONTINT	244'-4"	11	S	R	--	N/A	N/A	11715-CH-002/4 VIMS 27172 11715-CH-002
1083	1	20	1-CH-T1-1123	CH/REGEN HX OUTLET CHARGING TEMP	11715-CH-002/4	SB	277'	CR	S	R	36	N/A	N/A	1-EI-CB-03
1084	1	07	1-CH-HCV-1310	CH/CHARGING TO LOOP 2 ISOL	11715-FH-095C1/14/06	CONTINT	222'	11.5	--	--	OPEN	OPEN	NO	11715-FK-001D 1-CH-SOV-1310

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAWN W. JACOBS / ENGINEER  
 Signature: *Dawn W. Jacobs*  
 MARCH 11, 1993

DAVID J. WEDDER / ENGINEER  
 Signature: *David J. Wedder*  
 MARCH 11, 1993

NORTH AREA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
REACTIVITY CONTROL FUNCTION  
(Sorted by Line Number)

Data Base File Name/Date/Time: NAI\_SSEL.DBF / 03/11/93 / 09:33:18  
Sort Criteria: Line Number  
Filter Criteria: (Line Number < 2000)  
Program File Name & Version: SSEL v0.0

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr./Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. Dwg. No./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
1197	2	07	1-CH-HCV-1201	CH/EXCESS LETDOWN HX ISOL	11715-FM-095C1/14/C6	CONTMT	236'	6	--	28	CLOSED	CLOSED	NO	11715-CH-079/3 11715-FK-001D	1-CH-SOV-1201
1198	2	08B	1-CH-SOV-1201	CH/EXCESS LETDOWN HX ISOL PILOT	11715-CH-079/3	CONTMT	236'	6	R	--	VENT	VENT	NO	11715-FK-001D	N/A
1199	2	21	1-CH-F-4	CH/EXCESS LETDOWN HEAT EXCHANGER	11715-FM-095C1/14/C7	CONTMT	234'	5	S	23	N/A	N/A	NO	11715-FM-1D	N/A
1200	2	07	1-CH-HCV-1137	CH/EXCESS LETDOWN HX ISOL	11715-FM-095C1/14/C7	CONTMT	233'	6	--	28	CLOSED	CLOSED	NO	11715-CH-077/3 11715-FK-001A	1-CH-E/P-HCV-1137
1201	2	18	1-CH-E/P-HCV-1137	CH/EXCESS LETDOWN HX ISOL E/P	11715-CH-077/3	CONTMT	217'	5.5	R	--	ON	ON	YES	11715-FK-01A/14 11715-FK-001A	RACK 1-100
1206	2	07	1-CH-HCV-1389	CH/EXCESS LETDOWN FLOW DIRECTING	11715-FM-095C1/14/C6	CONTMT	234'	6	--	--	VCT	VCT	NO	11715-CH-075/3; 11715-FK-01D/11	N/A
1207	2	08B	1-CH-SOV-1389	CH/EXCESS LETDOWN FLOW DIRECTING PILOT	11715-CH-075/3	CONTMT	234'	6	R	--	VENT	VENT	NO	11715-FK-01D/11	N/A
1212	1, 2	21	1-SS-E-10	SS/PZR LIQUID SPACE SAMPLE COOLER	11715-FM-089D1/16/E4	TB	254'	8/B	S	23	N/A	N/A	NO	N/A	COMPONENT COOLING WATER
1223	1, 2	08B	1-SS-TV-108D	SS/HOT LEG SAMPLE ISOL	11715-FM-089D1/16/D8	CONTMT	253'	13 B	S R	--	CLOSED	OPEN	YES	11715-SS-018/4 VIMS 28479, 28416, 28436	N/A
1224	1, 2	08B	1-SS-TV-106A	SS/HOT LEG SAMPLE HEADER ISOL	11715-FM-089D1/16/E6	CONTMT	253' A	8.5	S R	A,40	CLOSED	OP/CL	YES	11715-SS-011/6; 11715-FK-001D	N/A
1224	1	08B	1-SS-TV-106A	SS/HOT LEG SAMPLE HEADER ISOL	11715-FM-089D1/16/E6	CONTMT	253' A	8.5	R	1,40	CLOSED	CLOSED	NO	11715-SS-011/6; 11715-FK-001D	N/A
1225	1, 2	08B	1-SS-TV-106B	SS/HOT LEG SAMPLE ISOL	11715-FM-089D1/16/E6	AUX	247'	7/K	S R	A,40	CLOSED	OP/CL	YES	11715-SS-012/3	N/A
1225	2	08B	1-SS-TV-106B	SS/HOT LEG SAMPLE ISOL	11715-FM-089D1/16/E6	AUX	247'	7/K	R	1,40	CLOSED	CLOSED	NO	11715-SS-012/3	N/A
1226	1, 2	07	1-HRS-TV-1625	HRS/HOT LEG SAMPLE COOLER INLET ISOL	11715-FM-089D1/16/E6	AUX	259'	7.6/K	S	24	CLOSED	OPEN	NO	11715-HRS-016/3	1-HRS-SOV-1625
1227	1, 2	08B	1-HRS-SOV-1625	HRS/HOT LEG SAMPLE COOLER INLET ISOL PILOT	11715-FM-089D1/16/E6	AUX	259'	7.6/K	S R	24	VENT	AIR	YES	11715-HRS-016/3	INST AIR
1230	1, 2	21	1-SS-E-4	HRS/HOT LEG SAMPLE COOLER	11715-FM-089D1/16/D5	AUX	274'	9/K	S	--	N/A	N/A	NO	N/A	COMPONENT COOLING WATER

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DANN W. JACOBS / ENGINEER

*D.W. Jacobs*  
Signature

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

*D.J. Werder*  
Signature

MARCH 11, 1993

NORTH ANNA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
REACTIVITY CONTROL FUNCTION  
(Sorted by Line Number)

Data Base File Name/Date/Time: NA1\_SSEL.DBF / 03/11/93 / 09:33:18  
Sort Criteria: Line Number  
Filter Criteria: (Line Number < '2000')  
Program File Name & Version: SSEL v0.0

LINE NO.	EQUIP TRAM CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. ST. Normal	ST. Desired	POWER REQ'D	SUPPORTING SYS. IMG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	
1231	1, 2	08B	1-SS-TV-109A	SS/COLD LEG SAMPLE ISOL	11715-FM-089D1/16/D8	CONTMT	243' CA	1.5	A	S R	--	CLOSED	OPEN	NO	11715-SS-019/3 N/A VIMS 27864 11715-FK-001E	
1236	1, 2	08B	1-SS-TV-102A	SS/COLD LEG SAMPLE HEADER ISOL	11715-FM-089D1/16/D6	CONTMT	253' A	8.5		S R	A,40	CLOSED	OP/CL	YES	11715-SS-005/5; N/A 11715-FK-001D	
1236	1	08B	1-SS-TV-102A	SS/COLD LEG SAMPLE HEADER ISOL	11715-FM-089D1/16/D6	CONTMT	253' A	8.5		R	1,40	CLOSED	CLOSED	NO	11715-SS-005/5; N/A 11715-FK-001D	
1237	1, 2	08B	1-SS-TV-102B	SS/RC COLD LEG SAMPLE ISOL	11715-FM-089D1/16/D6	AUX	245'	7/K		S R	A,40	CLOSED	OP/CL	YES	11715-SS-006/3 N/A	
1237	2	08B	1-SS-TV-102B	SS/RC COLD LEG SAMPLE ISOL	11715-FM-089D1/16/D6	AUX	245'	7/K		R	1,40	CLOSED	CLOSED	NO	11715-SS-006/3 N/A	
1240	1, 2	07	1-HRS-TV-1623	HRS/RC COLD LEG SAMPLE COOLER ISOL	11715-FM-089D1/16/D4	AUX	259'	7.6/K		S	24	CLOSED	OPEN	NO	11715-HRS-014/3 1-HRS-SOV-1623	
1241	1, 2	08B	1-HRS-SOV-1623	HRS/RC COLD LEG SAMPLE COOLER ISOL PILOT	11715-FM-089D1/16/D5	AUX	259'	7.6/K		S R	24	VENT	AIR	YES	11715-HRS-014/3 INST AIR	
1242	1, 2	21	1-SS-E-12	SS/RC COLD LEG SAMPLE COOLER	11715-FM-089D1/16/E4	AUX	274'	9/K		S	--	N/A	N/A	NO	N/A	COMPONENT COOLING WATER
1250	1	02	1-CR-52-RTA*	CR*/REACTOR TRIP BREAKER A	11715-1.27-402A	SB	294'			S R	--	CLOSED	OP*N	YES	N/A	N/A
1251	2	02	1-CR-52-RTB*	CR*/REACTOR TRIP BREAKER B	11715-1.27-402A	SB	294'			S R	--	CLOSED	OPEN	YES	N/A	N/A
1252	1	02	1-CR-52-BYA*	CR*/REACTOR TRIP BREAKER BYPASS A	11715-1.27-402A	SB	294'			S R	--	CLOSED	OPEN	YES	N/A	N/A
1253	2	02	1-CR-52-BYB*	CR*/REACTOR TRIP BREAKER BYPASS B	11715-1.27-402A	SB	294'			S R	--	CLOSED	OPEN	YES	N/A	N/A
1260	1, 2	23	1-RC-R-1	RC/REACTOR VESSEL	11715-FM-001G/12/C3	CONTMT	256'	--		S	1,14	N/A	N/A	NO	N/A	N/A
1261	1, 2	23	1-RC-FA*	RC/FUEL ASSEMBLIES	11715-5.13	SERIES	CONTMT	242'	--	S	1,14	N/A	N/A	NO	N/A	N/A
1262	1, 2	23	1-RC-LRI*	RC/LOWER REACTOR INTERNALS	11715-5.11	SERIES	CONTMT	231'	--	S	1,14	N/A	N/A	NO	N/A	N/A
1263	1, 2	23	1-RC-URI*	RC/UPPER REACTOR INTERNALS	11715-5.11	SERIES	CONTMT	262'	--	S	1,14	N/A	N/A	NO	N/A	N/A
1264	1, 2	23	1-CR-CRD*	CR*/CONTROL ROD DRIVE MECHANISMS	WESTING 618J795 & 618J796	CONTMT	271'	--		S	1,14, 10	N/A	N/A	NO	N/A	N/A
1268	1, 2	23	1-RC-ES-1	RC/NEUTRON SHIELD TANK	11715-FM-079B5/11	CONTMT	242'	--		S	1,14	N/A	N/A	NO	N/A	N/A
1269	1, 2	23	1-RC-MD1*	RC/NEUTRON DETECTOR	11715-FM-079B5/11	CONTMT	242'	--		S	1,14, 13	N/A	N/A	YES	N/A	N/A

CERTIFICATION:

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DAWN W. JACOB / ENGINEER

*DW Jacob*  
Signature

MARCH 11, 1993

DAVID J. MERDER / ENGINEER

*DJ Merder*  
Signature

MARCH 11, 1993

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 REACTIVITY CONTROL FUNCTION  
 (Sorted by Line Number)

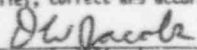
Data Base File Name/Date/Time: NA1\_SSEL.DBF / 03/11/93 / 09:33:18  
 Sort Criteria: Line Number  
 Filter Criteria: (Line Number < 2000)  
 Program File Name & Version: SSEL v0.0

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr./Elv.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. ST. Norms?	ST. Desired	POWER REQ'D?	SUPPORTING SYS. ENG. NO./REV.	SYS. & SUPPORTING COMPONENTS	REQ'D INTERCONNECTIONS
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
1270	1, 2 23	1-RC-ND2*	RC/NEUTRON DETECTOR	11715-FM-07985/11	CONTMT	242'	--	S	1,14,13	N/A	N/A	YES	N/A		N/A
1271	1, 2 23	1-RC-ND3*	RC/NEUTRON DETECTOR	11715-FM-07985/11	CONTMT	242'	--	S	1,14,13	N/A	N/A	YES	N/A		N/A
1272	1, 2 23	1-RC-ND4*	RC/NEUTRON DETECTOR	11715-FM-07985/11	CONTMT	242'	--	S	1,14,13	N/A	N/A	YES	N/A		N/A
1273	1, 2 23	1-RC-ND5*	RC/NEUTRON DETECTOR	11715-FM-07985/11	CONTMT	242'	--	S	1,14,13	N/A	N/A	YES	N/A		N/A
1274	1, 2 23	1-RC-ND6*	RC/NEUTRON DETECTOR	11715-FM-07985/11	CONTMT	242'	--	S	1,14,13	N/A	N/A	YES	N/A		N/A
1275	1, 2 23	1-RC-ND7*	RC/NEUTRON DETECTOR	11715-FM-07985/11	CONTMT	242'	--	S	1,14,13	N/A	N/A	YES	N/A		N/A
1276	1, 2 23	1-RC-ND8*	RC/NEUTRON DETECTOR	11715-FM-07985/11	CONTMT	242'	--	S	1,14,13	N/A	N/A	YES	N/A		N/A
1280	1, 2 23	1-ND-110U*	ND*/INCORE INST DRIVE UNIT	11715-1.26 SERIES	CONTMT	263'	4	S	1,14,4,44	N/A	N/A	NO	N/A		N/A
1281	1, 2 23	1-ND-1110S*	ND*/INCORE INST 5-PATH TRANSFER	11715-1.26 SERIES	CONTMT	263'	4	S	1,14,4,44	N/A	N/A	NO	N/A		N/A
1282	1, 2 23	1-ND-11110*	ND*/INCORE INST 10-PATH TRANSFER	11715-1.26 SERIES	CONTMT	263'	4	S	1,14,4,44	N/A	N/A	NO	N/A		N/A
1283	1, 2 23	1-ND-111S*	ND*/INCORE INST SEAL TABLE	11715-1.26 SERIES	CONTMT	263'	4	S	1,14,4,44	N/A	N/A	NO	N/A		N/A
1284	1, 2 23	1-ND-11GT*	ND*/INCORE INST GUIDE TUBES	11715-1.26 SERIES	CONTMT	217'	4	S	1,14,4,44	N/A	N/A	NO	N/A		N/A

CERTIFICATION:


The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAWN W. JACOBS / ENGINEER

  
 \_\_\_\_\_  
 Signature

MARCH 11, 1993

DAVID J. BERDER / ENGINEER

  
 \_\_\_\_\_  
 Signature

MARCH 11, 1993

NORTH ARMA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 REACTIVITY CONTROL FUNCTION  
 (Sorted by Line Number)

Data Base File Name/Date/Time: NA2\_SSEL.DBF / 03/11/93 / 09:30:38  
 Sort Criteria: Line Number  
 Filter Criteria: (Line Numbers: 2000)  
 Program File Name & Version: SSC1 v0.0

LINE NO.	EQUIP TRASH CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dep. No./Rev./Zone	Building	EQUIPMENT LOCATION	SOBT	NOTES	Normal	Desired	REQ'D	POWER SUPPORTING SYS.	REQ'D	INTERCONNECTIONS		
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)		
1005	1	21	2-CH-E-3	CH/REGENERATIVE HEAT EXCHANGER	12050-FH-09581/20/CS	COMT4	245' PC	6	S	--	N/A	N/A	RD	12050-FH-1C 12050-FH-1G	N/A	
1049	1	21	2-CH-TK-2	CH/VOLUME CONTROL TANK (VCT)	12050-FH-09581/22/CS	AUX	275'	9.1/J	S	--	N/A	N/A	RD	N/A	2-CH-LT-2115; 2-CH-LT-2112	
1050	1	18	2-CH-LT-2115	CH/VCT LEVEL	12050-FH-09581/22/CS	AUX	275'	9.1/J	S	R	--	ON	ON	YES	12050-CH-012/4	N/A
1051	1	20	2-CH-LT-2115	CH/VCT LEVEL	12050-CH-012/4	SB	277'	CR	S	R	--	ON	ON	YES	N/A	N/A
1052	1	18	2-CH-LT-2112	CH/VCT LEVEL	12050-FH-09581/22/CS	AUX	275'	9.1/J	S	R	--	ON	ON	YES	12050-CH-011/8	N/A
1053	1	20	2-CH-LT-2112	CH/VCT LEVEL	12050-CH-011/8	SB	277'	CR	S	R	--	ON	ON	YES	N/A	N/A
1054	1	R	2-CH-419	CH/VCT LEVEL ISOL	12050-FH-09581/22/CS	AUX	275'	9.1/J	--	15	CLOSED	OPEN	RD	N/A	N/A	
1055	1	R	2-CH-422	CH/VCT LEVEL ISOL	12050-FH-09581/22/CS	AUX	275'	9.1/J	--	15	CLOSED	OPEN	RD	N/A	N/A	
1056	1	R	2-CH-425	CH/VCT LEVEL ISOL	12050-FH-09581/22/CS	AUX	275'	9.1/J	--	15	CLOSED	OPEN	RD	N/A	N/A	
1057	1	R	2-CH-428	CH/VCT LEVEL ISOL	12050-FH-09581/22/CS	AUX	275'	9.1/J	--	15	CLOSED	OPEN	RD	N/A	N/A	
1058	1	08A	2-CH-MOV-2115C	CH/VCT OUTLET TO CHARGING PUMPS	12050-FH-09581/22/CS	AUX	274'	9.5/JK	R	--	OPEN	OPEN	RD	11715-FP-11F	2-CH-LT-2112	
1059	1	08A	2-CH-MOV-2115E	CH/VCT OUTLET TO CHARGING PUMPS	12050-FH-09581/22/CS	AUX	274'	9.5/JK	R	--	OPEN	OPEN	RD	11715-FP-11F	2-CH-LT-2112	
1060	1	08A	2-CH-MOV-2257A	CH/CHARGING PUMP A INLET ISOL	12050-FH-09582/25/CS	AUX	244'	9/J	R	--	OPEN	OPEN	RD	EC-CH-10A	N/A	
1061	2	08A	2-CH-MOV-2257A	CH/CHARGING PUMP B INLET ISOL	12050-FH-09582/25/CS	AUX	244'	9.5/J	R	--	OPEN	OPEN	RD	EC-CH-10A	N/A	
1062	3	08A	2-CH-MOV-2270A	CH/CHARGING PUMP C INLET ISOL	12050-FH-09582/25/CS	AUX	244'	10/J	R	--	OPEN	OPEN	RD	EC-CH-10A	N/A	
1063	1	08A	2-SI-MOV-2863A	SI/LURSI HDR TO CCPs	12050-FH-09642/24/CS	AUX	--	--	R	A	CLOSED	CLOSED	RD	N/A	N/A	
1063	1	08A	2-SI-MOV-2863A	SI/LURSI HDR TO CCPs	12050-FH-09642/24/CS	AUX	244'	7.6/J	S	R	1	CLOSED	OPEN	YES	N/A	2-EP-MC-19
1063A	2	08A	2-SI-MOV-2863B	SI/LURSI TO CHARGING PUMP A SUCTION X DOWN	12050-FH-09582/25/CS	AUX	244'	9/J	S	R	1	CLOSED	OPEN	YES	N/A	2-EP-MC-21
1063A	2	08A	2-SI-MOV-2863B	SI/LURSI TO CHARGING PUMP A SUCTION X DOWN	12050-FH-09582/25/CS	AUX	244'	9/J	R	A	CLOSED	CLOSED	RD	N/A	2-EP-MC-21	
1064	1	05	2-CH-P-1A	CH/CENTRIFUGAL CHARGING PUMP A; (CCP A)	12050-FH-09582/25/CS	AUX	244'	9/J	S	R	--	ON	ON	YES	N/A	N/A

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

MARCH 11, 1993

DAWN W. JACOBS / ENGINEER

*Dawn W. Jacobs*  
 Signature

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

*David J. Werder*  
 Signature

NORTH ANMA UNIT 2  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
REACTIVITY CONTROL FUNCTION  
(Sorted by Line Number)

Data Base File Name/Date/Time: MA2\_SSEL.DBF / 03/11/93 / 09:30:38  
Sort Criteria: Line Number  
Filter Criteria: (Line Numbers < 20000)  
Program File Name & Version: SSEL v0.0

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dep. No./Rev./Zone	Building	Flr. Eiv.	Rm. or Row/Col.	LOCATION	Sort Notes	Normal	Desired	REQ'D INTERCONNECTIONS				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	
1065	2	05	2-CH-P-1B	CH/CENTRIFUGAL CHARGING PUMP B; (CCP B)	12050-FH-09582/25/06	AUX	244'	9.5/3	S	R	--	ON	ON	YES	N/A	
1066	3	05	2-CH-P-1C	CH/CENTRIFUGAL CHARGING PUMP C; (CCP C)	12050-FH-09582/25/08	AUX	244'	10/3	S	R	--	ON	ON	YES	N/A	
1067	1	08A	2-CH-MW-2275A	CH/CCP A TO SEAL WATER HX HEADER	12050-FH-09582/25/03	AUX	244'	9.2/6	R	--	OPEN	OPEN	NO	EC-CH-3B	N/A	
1068	2	08A	2-CH-MW-2275B	CH/CCP B TO SEAL WATER HX HEADER	12050-FH-09582/25/05	AUX	244'	9.5/3	R	--	OPEN	OPEN	NO	EC-CH-3B	N/A	
1069	3	08A	2-CH-MW-2275C	CH/CCP C TO SEAL WATER HX HEADER	12050-FH-09582/25/07	AUX	244'	10/3	R	--	OPEN	OPEN	NO	EC-CH-3A	N/A	
1070	1	08A	2-CH-MW-2286A	CH/CCP A TO BIT & REGEN HX	12050-FH-09582/25/04	AUX	244'	9/3	R	--	OPEN	OPEN	NO	EC-CH-5A	N/A	
1071	2	08A	2-CH-MW-2286B	CH/CCP B TO BIT & REGEN HX	12050-FH-09582/25/06	AUX	244'	9.5/3	R	--	OPEN	OPEN	NO	EC-CH-5A	N/A	
1072	3	08A	2-CH-MW-2286C	CH/CCP C TO BIT & REGEN HX	12050-FH-09582/25/08	AUX	244'	10/3	R	--	OPEN	OPEN	NO	EC-CH-5A	N/A	
1073	1	08A	2-CH-MW-2287A	CH/CCP A TO LOOP FILL	12050-FH-09582/25/04	AUX	244'	9/3	R	--	OPEN	OPEN	NO	EC-CH-7A	N/A	
1074	2	08A	2-CH-MW-2287B	CH/CCP B TO LOOP FILL	12050-FH-09582/25/06	AUX	244'	9.5/3	R	--	OPEN	OPEN	NO	EC-CH-7A	N/A	
1075	3	08A	2-CH-MW-2287C	CH/CCP C TO LOOP FILL	12050-FH-09582/25/08	AUX	244'	10/3	R	--	OPEN	OPEN	NO	EC-CH-7A	N/A	
1077	1, 2	08A	2-CH-MW-2373	CH/CCP HEADER TO SEAL WATER HX	12050-FH-09581/22/08	AUX	244'	9.4/1	R	--	OPEN	OPEN	NO	11715-FP-11A	N/A	
1078	1, 2	21	2-CH-E-1	CH/SEAL WATER HEAT EXCHANGER	12050-FH-09581/22/06	AUX	245'	9.5/3	S	--	N/A	N/A	NO	12050-CH-001/6	COMPONENT COOLING WATER	
1079	1	08A	2-CH-MW-226-A	CH/CCP's TO REGEN HX	12050-FH-095C1/20/03	AUX	246'	12/03	R	--	OPEN	OPEN	NO	11715-FP-11P	N/A	
1080	1	07	2-CH-FCV-2122	CH/CHARGING FLOW TO REGEN HX	12050-FH-095C1/20/04	AUX	245'	12/04	--	--	OPEN	OPEN	NO	12050-CH-001/6	2-CH-E/P-2122; 2-CH-FT-2122	
1081	1	18	2-CH-E/P-2122	CH/CHARGING FLOW TO REGEN HX	12050-CH-001/6	AUX	250'	12/04	R	--	ON	ON	YES	N/A	N/A	
1082	1	18	2-CH-FT-2172	CH/CHARGING FLOW TO REGEN HX	12050-FH-095C1/20/04	AUX	251'	12/04	S	R	--	ON	ON	YES	12050-CH-001/6	N/A
1083	1	20	2-CH-F1-2122A	CH/CHARGING FLOW TO REGEN HX	12050-CH-001/6	SB	277'	CR	S	R	36	ON	ON	YES	N/A	2-EI-CB-03
1084	1	20	2-CH-FC-2122C	CH/CHARGING FLOW TO REGEN HX	12050-CH-001/6	SB	277'	CR	S	R	--	ON	ON	YES	N/A	N/A
1085	2	R	2-CH-251	CH/CHARGING FLOW TO REGEN HX BYPASS	12050-FH-095C1/20/04	AUX	--	--	--	15	CLOSED	OPEN	NO	N/A	N/A	
1086	1	08A	2-CH-MW-2289A	CH/CHARGING FLOW TO REGEN HX	12050-FH-095C1/20/04	AUX	257'	12.5/04	R	--	OPEN	OPEN	NO	11715-FP-11P	N/A	

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAVID W. JACOBS / ENGINEER

*David W. Jacobs*  
Signature  
MARCH 11, 1993

DAVID J. WEDDER / ENGINEER

MARCH 11, 1993



NORTH ANPA UNIT 2  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
REACTIVITY CONTROL FUNCTION  
(Sorted by Line Number)

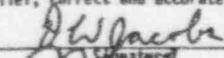
Data Base File Name/Date/Time: NA2\_SSEL.DBF / 03/11/93 / 09:30:38  
Sort Criteria: Line Number  
Filter Criteria: (Line Number < 2000)  
Program File Name & Version: SSEL v0.0

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Fir. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. Dwg. No./Rev.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	
1087	1	19	2-CH-TE-2123	CH/REGEN HX OUTLET CHARGING TEMP	12050-FM-095C1/20/E5	CONTMT	245'	6	S R	--	N/A	N/A	YES	12050-CH-002/4; N/A 12050-FM-40C	
1088	1	20	2-CH-TI-2123	CH/REGEN HX OUTLET CHARGING TEMP	12050-CH-002/4	SB	277'	CR	S R	36	N/A	N/A	YES	N/A	2-EI-CB-03
1089	1	07	2-CH-HCV-2310	CH/CHARGING TO LOOP 2 ISOL	12050-FM-095C1/20/F6	CONTMT	222'	6.8	--	--	OPEN	OPEN	NO	N/A	2-CH-SOV-2310
1090	1	08B	2-CH-SOV-2310	CH/CHARGING ISOL PILOT	12050-CH-069/3	CONTMT	222'	6.8	R	--	VENT	VENT	NO	N/A	N/A
1091	1	08A	2-SI-MOV-2867A	SI/CHARGING HEADER TO BIT ISOL	12050-FM-096A3/21/C4	AUX	244'	11.5/J	R	--	CLOSED	CLOSED	NO	N/A	N/A
1092	1	08A	2-SI-MOV-2867B	SI/CHARGING HEADER TO BIT ISOL	12050-FM-096A3/21/D4	AUX	244'	11.5/J	R	--	CLOSED	CLOSED	NO	N/A	N/A
1092A	1	21	2-SI-TX-2	SI/BORON INJECTION TANK (BIT)	12050-FM-096A3/21/D5	AUX	244'	11.5/J	S	23	N/A	N/A	NO	N/A	N/A
1092H	1	08A	2-SI-MOV-2867C	SI/BIT TO COLD LEG LOOP ISOL	12050-FM-096A3/21/E7	AUX	244'	12/J	R	--	CLOSED	CLOSED	NO	N/A	N/A
1092I	2	08A	2-SI-MOV-2867D	SI/BIT TO COLD LEG LOOP ISOL	12050-FM-096A3/21/D7	AUX	244'	12.5/J	R	--	CLOSED	CLOSED	NO	N/A	N/A
1093	1	08A	2-SI-MOV-2869B	SI/CCP TO HOT LEGS 1, 2, 3	12050-FM-096A3/21/A8	AUX	244'	12/J	R	A	CLOSED	CLOSED	NO	N/A	N/A
1093	1	08A	2-SI-MOV-2869B	SI/CCP TO HOT LEGS 1, 2, 3	12050-FM-096A3/21/A8	AUX	244'	12/J	S R	1	CLOSED	OPEN	YES	N/A	2-EP-MC-21
1095	1	08A	2-CH-MOV-2370	CH/CCP TO RCP SEAL INJECTION	12050-FM-095C2/14/F4	AUX	250'	9.7/L	R	--	OPEN	OPEN	NO	11715-FP-11A	N/A
1096	1	07	2-CH-HCV-2186	CH/CCP TO RCP SEAL INJECTION	12050-FM-095C2/14/F4	AUX	245'	9.8/L	--	--	OPEN	OPEN	NO	12050-CH-068/1	N/A
1097	2	R	2-CH-255	CH/CCP TO RCP SEAL INJECTION MANUAL VALVE	12050-FM-095C2/14/E3	AUX	245'	--	--	15	CLOSED	OPEN	NO	N/A	N/A
1098	1	18	2-CH-E/P-2186	CH/CCP TO RCP SEAL INJECTION	12050-CH-068/1	AUX	245'	9.8/L	R	--	ON	ON	YES	12050-CH-068/1	N/A
1099	1	20	2-CH-HIC-2186	CH/CCP TO RCP SEAL INJECTION	12050-CH-068/1	SB	277'	CR	R	--	ON	ON	YES	N/A	N/A
1100	2	R	2-SI-83	SI/BIT BYPASS MANUAL ISOL	12050-FM-096A3/21/F7	AUX	244'	--	--	I, 15	CLOSED	OPEN	NO	N/A	N/A
1100	2	R	2-SI-83	SI/BIT BYPASS MANUAL ISOL	12050-FM-096A3/21/F7	AUX	244'	--	--	A	CLOSED	CLOSED	NO	N/A	N/A
1102	2	R	2-CH-223	CH/RCP SEAL WATER INJECTION FILTER ISOL	12050-FM-095C2/14/C3	AUX	257'	10/L	--	15	CLOSED	OPEN	NO	N/A	N/A
1103	2	R	2-CH-224	CH/RCP SEAL WATER INJECTION FILTER ISOL	12050-FM-095C2/14/C3	AUX	257'	10/L	--	15	CLOSED	OPEN	NO	N/A	N/A
1104	1, 2	18	2-CH-FT-2124	CH/RCP SEAL WATER INJECTION FLOW	12050-FM-095C2/14/C3	AUX	250'	11.7/HJ	S R	20	ON	ON	YES	N/A	N/A

CERTIFICATION:

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DAWN W. JACOBS / ENGINEER

  
Signature

MARCH 11, 1993

DAVID J. WETTER / ENGINEER

  
Signature

MARCH 11, 1993

NORTH ANNA UNIT 2  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
REACTIVITY CONTROL FUNCTION  
(Sorted by Line Number)

Data Base File Name/Date/Time: NA2\_SSEL.DBF / 03/11/93 / 09:30:38  
Sort Criteria: Line Number  
Filter Criteria: (Line Number < 2000)  
Program File Name & Version: SSEL V0.0

LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT LOCATION	OP. ST.	POWER SUPPORTING SYS.	REQ'D INTERCONNECTIONS					
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
1105	1, 2	20	2-CH-F1-2124A	CH/RCP SEAL WATER INJECTION FLOW	12050-CH-058/4	SB	277'	CR	S R 20,36	OH	OH	YES	N/A	2-EI-CB-03
1106	1, 2	18	2-CH-F1-2127	CH/RCP SEAL WATER INJECTION FLOW	12050-FH-095C2/14/83	AUX	250'	11.6/NU	S R 20	OH	OH	YES	N/A	N/A
1107	1, 2	20	2-CH-F1-2127A	CH/RCP SEAL WATER INJECTION FLOW	12050-CH-059/5	SB	277'	CR	S R 20,36	OH	OH	YES	N/A	2-EI-CB-03
1108	1, 2	18	2-CH-F1-2130	CH/RCP SEAL WATER INJECTION FLOW	12050-FH-095C2/14/83	AUX	250'	11.6/NU	S R 20	OH	OH	YES	N/A	N/A
1109	1, 2	20	2-CH-F1-2130A	CH/RCP SEAL WATER INJECTION FLOW	12050-CH-060/4	SB	277'	CR	S R 20,36	OH	OH	YES	N/A	2-EI-CB-03
1110	1, 2	07	2-CH-HCV-2303A	CH/SEAL LEAHOFF ISOL RCP-1	12050-FH-095C2/14/78	CONTINT	221'	12	-- 21	OPEN	OPEN	NO	12050-CH-065/3	N/A
1111	1, 2	07	2-CH-HCV-2303B	CH/SEAL LEAHOFF ISOL RCP-2	12050-FH-095C2/14/78	CONTINT	217'	8.1	-- 21	OPEN	OPEN	NO	12050-CH-066/4	N/A
1112	1, 2	07	2-CH-HCV-2303C	CH/SEAL LEAHOFF ISOL RCP-3	12050-FH-095C2/14/78	CONTINT	221'	3.8	-- 21	OPEN	OPEN	NO	12050-CH-067/3	N/A
1113	1, 2	088	2-CH-SOV-2303A	CH/SEAL WATER LEAHOFF PILOT	12050-CH-065/3	CONTINT	221'	12	R 21,36	VENT	VENT	NO	N/A	2-CH-HCV-2303A
1114	1, 2	088	2-CH-SOV-2303B	CH/SEAL WATER LEAHOFF PILOT	12050-CH-066/4	CONTINT	217'	8.1	R 21,36	VENT	VENT	NO	N/A	2-CH-HCV-2303B
1115	1, 2	088	2-CH-SOV-2303C	CH/SEAL WATER LEAHOFF PILOT	12050-CH-067/3	CONTINT	221'	3.8	R 21,36	VENT	VENT	NO	N/A	2-CH-HCV-2303C
1122	2	07	2-CH-HCV-2307	CH/SEAL BYPASS OUTLET ISOL	12050-FH-095C2/14/74	CONTINT	248' A	5.2	-- --	CLOSED	CLOSED	NO	12050-FK-10;120 2-CH-SOV-2307 50-CH-044/4	
1123	2	088	2-CH-SOV-2307	CH/SEAL BYPASS OUTLET ISOL PILOT	12050-CH-044/4	CONTINT	248' A	9.2	R 36	VENT	VENT	NO	12050-FK-10	2-CH-HCV-2307
1124	1, 2	08A	2-CH-HCV-2380	CH/SEAL WATER RETURN ISOL	12050-FH-095C2/14/74	CONTINT	248'	9	R A,20	OPEN	OPEN	NO	N/A	N/A
1124	1	08A	2-CH-HCV-2380	CH/RCP SEAL WATER RETURN CONTINT ISOL	12050-FH-095C2/14/74	CONTINT	248'	9	S R 1	OPEN	CLOSED	YES	N/A	2-EP-MC-20
1137	1, 2	08A	2-CH-HCV-2381	CH/RCP SEAL WATER INJECTION TO SEAL WATER RX	12050-FH-095B1/22/78	AUX	244'	12/H	R A,21	OPEN	OPEN	NO	11715-FP-11P	N/A
1137	2	08A	2-CH-HCV-2381	CH/RCP SEAL RETURN CONTINT ISOL	12050-FH-095B1/21/78	AUX	244'	12/H	S R 1	OPEN	CLOSED	YES	N/A	2-EP-MC-22
1139	2	R	2-CH-127	CH/RCP SEAL WATER FILTER BYPASS	12050-FH-095B1/22/78	AUX	244'	9.6/L	-- 15	CLOSED	OPEN	NO	N/A	N/A
1140	1	08A	2-SI-HCV-2836	SI/CCP TO COLD LEGS 1, 2, 3	12050-FH-096A3/21/78	AUX	244'	12/J	R A,21	CLOSED	CLOSED	NO	N/A	N/A
1140	1	08A	2-SI-HCV-2836	SI/CCP TO COLD LEGS 1, 2, 3	12050-FH-096A3/21/78	AUX	244'	12/J	S R 1,21	CLOSED	OPEN	YES	N/A	2-EP-MC-22
1141	1	08A	2-SI-HCV-2869A	SI/CCP TO HOT LEGS 1, 2, 3	12050-FH-096A3/21/78	AUX	244'	12/J	R A,21	CLOSED	CLOSED	NO	11715-FP-11Q	N/A

CERTIFICATION:

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DAWN W. JACOBS / ENGINEER

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

MARCH 11, 1993

*[Handwritten Signature]*  
Signature

LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Eq. No./Rev./Zone	Building	LOC./TON	Pr. or Row/Co I.	Sort Notes	OP. ST.	POWER SUPPORTING SYS.	REQ'D INTERCONNECTIONS				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
1141	1	08A	SI/CEP TO HOT LEGS 1, 2, 3	12050-FM-096A3/21/CB	AUX	244'	12/J	S R --	1, 21	CLOSED	OPEN	YES	N/A		2-EP-WC-19
1145	1	21	CH/BORIC ACID STORAGE TANK C (BAST)	11715-FM-095A1/22/E7	AUX	274'	9.7/H	S --	--	N/A	N/A	NO	N/A		1-CH-LT-1102/1165, 1-CH-TIC-1103/1166
1146	2	18	CH/BAST B LEVEL	11715-FM-095A1/22/E5	AUX	289'	9/H	S R --	--	ON	ON	YES	11715-CH-046/3	N/A	
1147	1	18	CH/BAST C LEVEL	11715-FM-095A1/22/E7	AUX	289'	9.5/G	S R --	--	ON	ON	YES	11715-CH-036/3	N/A	
1148	1	18	CH/BAST C LEVEL	11715-FM-095A1/22/E8	AUX	289'	9.2/H	S R --	--	ON	ON	YES	11715-CH-040/4	N/A	
1149	1	18	CH/BAST B TEMPERATURE	11715-FM-095A1/22/E5	AUX	274'	9.1/GH	S R --	--	ON	ON	YES	11715-CH-043/3	N/A	
1150	1	18	CH/BAST C TEMPERATURE	11715-FM-095A1/22/E8	AUX	274'	9.8/GH	S R --	--	ON	ON	YES	11715-CH-037/5	N/A	
1151	1	18	CH/BAST C TEMPERATURE	11715-FM-095A1/22/E7	AUX	274'	9.5/GH	S R --	--	ON	ON	YES	11715-CH-036/2	N/A	
1152	1	0	CH/BAST C STRIP HEATER	11715-FM-095A1/22/E8	AUX	260'	11.2/J	S R --	--	ON	ON	YES	11715-CH-037/5	N/A	
1153	1	0	CH/BAST C STRIP HEATER	11715-FM-095A1/22/E8	AUX	260'	11.2/J	S R --	--	ON	ON	YES	11715-CH-036/2	N/A	
1157	2	20	CH/BAST B LEVEL	11715-CH-048/3	SB	277'	CR	S R --	--	ON	ON	YES	N/A	N/A	
1158	1	20	CH/BAST C LEVEL	11715-CH-039/3	SB	277'	CR	S R --	--	ON	ON	YES	N/A	N/A	
1159	1	20	CH/BAST C LEVEL	11715-CH-040/4	SB	277'	CR	S R --	--	ON	ON	YES	N/A	N/A	
1160	2	05	CH/BORIC ACID TRANSFER PUMP (BATP)	11715-FM-095A1/22/E6	AUX	261'	9.5/HJ	S R --	--	ON	ON	YES	N/A	N/A	
1161	1	05	CH/BORIC ACID TRANSFER PUMP (BATP)	11715-FM-095A1/22/E6	AUX	261'	9.5/HJ	S R --	--	ON	ON	YES	N/A	N/A	
1163	1, 2	R	CH/BORIC ACID FILTER BYPASS	11715-FM-095A1/22/C8	AUX	244'	9.3/L	--	15	CLOSED	OPEN	NO	N/A	N/A	
1164	2	R	CA/BATP SELECTION ALIGNMENT VALVE	11715-FM-095A1/22/E6	AUX	261'	9.5/HJ	--	15	CLOSED	OP/CL	NO	N/A	N/A	
1165	1	R	CH/BATP DISCH ALIGNMENT VALVE	11715-FM-095A1/22/E6	AUX	261'	9.5/HJ	--	15	CLOSED	OP/CL	NO	N/A	N/A	
1166	2	R	SI/BATP TO BIT ISOL	12050-FM-096A3/21/E4	AUX	244'	11.5/J	--	15	OPEN	CLOSED	NO	N/A	N/A	
1167	2	18	CH/BAST TO VCT FLOW	12050-FM-095B1/22/E4	AUX	274'	9.6/J	S R --	--	ON	ON	YES	12050-CH-017/9	N/A	
1168	2	07	CH/BAST TO VCT CONTROL	12050-FM-095B1/22/E3	AUX	278'	9.6/J	--	A, 3	OPEN	OPEN	YES	12050-CH-017/9	2-CH-SOV-2113A1, 2-CH-SO V-2113A2	

CERTIFICATION:

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DAWN W. JACOBS / ENGINEER

*Dawn W. Jacobs*  
 Signature

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

*David J. Werder*  
 Signature

MARCH 11, 1993



NORTH AREA UNIT 2  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
REACTIVITY CONTROL FUNCTION  
(Sorted by Line Number)

Data Base File Name/Date/Time: NA2\_SSEL.PDF / 03/11/93 / 09:30:38  
Sort Criteria: Line Number  
Filter Criteria: (Line Number < '2000')  
Program File Name & Version: SSEM v0.0

LINE NO.	EQUIP TRASH CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	EQUIPMENT		LOCATION	SORT NOTES		OP. ST.		POWER REQD?	SUPPORTING SYS. ENG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	
					Building	Ftr. Elev.		Ro. or Row/Col.	(10)	(11)	Normal				Desired
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	
1211	1, 2	21	2-SS-E-10	SS/PZR LIQUID SPACE SAMPLE COOLER	12050-FM-08981/17/E5 TB	254'	B/B	S	23	N/A	N/A	NO	N/A	COMPONENT COOLING WATER	
1222	1, 2	088	2-SS-TV-208D	SS/HOT LEG SAMPLE ISOL	12050-FM-08981/17/D8 CONTMT	243' C	8.5	S	R --	CLOSED	OPEN	YES	12050-SS-017/6	N/A	
1223	1, 2	088	2-SS-TV-206A	SS/HOT LEG SAMPLE HEADER ISOL	12050-FM-08981/17/E6 CONTMT	253' A	9.5	S	R A,40	CLOSED	OP/CL	YES	12050-SS-015/5; N/A 12050-FK-1D		
1223	1	088	2-SS-TV-206A	SS/HOT LEG SAMPLE HEADER ISOL	12050-FM-08981/17/E6 CONTMT	253' A	9.5	R	I,40	CLOSED	CLOSED	NO	12050-SS-015/5; N/A 12050-FK-1D		
1224	1, 2	088	2-SS-TV-206B	SS/HOT LEG SAMPLE ISOL	12050-FM-08981/17/E6 AUX	249'	11.5/JK	S	R A,40	CLOSED	OP/CL	YES	12050-SS-010/5; N/A 12050-SS-011/5		
1224	2	088	2-SS-TV-206B	SS/HOT LEG SAMPLE ISOL	12050-FM-08981/17/E6 AUX	249'	11.5/JK	R	I,40	CLOSED	CLOSED	NO	12050-SS-010/5; N/A 12050-SS-011/5		
1225	1, 2	07	2-HRS-TV-1619	HRS/HOT LEG SAMPLE COOLER INLET ISOL	12050-FM-08981/17/E6 AUX	259'	10.5/JK	S	24	CLOSED	OPEN	NO	12050-HRS-007/3	2-HRS-SOV-1619	
1226	1, 2	088	2-HRS-SOV-1619	HRS/HOT LEG SAMPLE COOLER INLET ISOL PILOT	12050-FM-08981/17/E6 AUX	259'	10.5/JK	S	R 24	VENT	AIR	YES	12050-HRS-007/3	INST AIR	
1227	1, 2	21	2-SS-E-4	HRS/HOT LEG SAMPLE COOLER	12050-FM-08981/17/D5 AUX	274'	9/K	S	--	N/A	N/A	NO	N/A	COMPONENT COOLING WATER	
1230	1, 2	088	2-SS-TV-209A	SS/COLD LEG SAMPLE ISOL	12050-FM-08981/17/D8 CONTMT	243' CA	14	S	R --	CLOSED	OPEN	NO	12050-SS-018/5	N/A	
1235	1, 2	088	2-SS-TV-202A	SS/COLD LEG SAMPLE HEADER ISOL	12050-FM-08981/17/D6 CONTMT	253' A	9.5	S	R A,40	CLOSED	OP/CL	YES	12050-SS-005/6; N/A 12050-FK-1D		
1235	1	088	2-SS-TV-202A	SS/COLD LEG SAMPLE HEADER ISOL	12050-FM-08981/17/D6 CONTMT	253' A	9.5	R	I,40	CLOSED	CLOSED	NO	12050-SS-005/6; N/A 12050-FK-1D		
1236	1, 2	088	2-SS-TV-202B	SS/RC COLD LEG SAMPLE ISOL	12050-FM-08981/17/D6 AUX	245'	11.5/JK	S	R A,40	CLOSED	OP/CL	YES	12050-SS-006/6	N/A	
1236	2	088	2-SS-TV-202B	SS/RC COLD LEG SAMPLE ISOL	12050-FM-08981/17/D6 AUX	245'	11.5/JK	R	I,40	CLOSED	CLOSED	NO	12050-SS-006/6	N/A	
1239	1, 2	07	2-HRS-TV-1617	HRS/RC COLD LEG SAMPLE COOLER ISOL	12050-FM-08981/17/D4 AUX	259'	10.5/L	S	24	CLOSED	OPEN	NO	12050-HRS-005/3	2-HRS-SOV-1617	
1240	1, 2	088	2-HRS-SOV-1617	HRS/RC COLD LEG SAMPLE COOLER ISOL PILOT	12050-FM-08981/17/D5 AUX	259'	10.5/L	S	R 24	VENT	AIR	YES	12050-HRS-005/3	INST AIR	
1241	1, 2	21	2-SS-E-1E	SS/RC COLD LEG SAMPLE COOLER	12050-FM-08981/17/E4 AUX	274'	9/K	S	--	N/A	N/A	NO	N/A	COMPONENT COOLING WATER	
1250	1	02	2-CR-S2-RTA*	CR*/REACTOR TRIP BREAKER A	12050-1.27-402A	SB	294'	CABLE	S	R --	CLOSED	OPEN	YES	N/A	N/A

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAWN W. JACOBS / ENGINEER

*Dawn W. Jacobs*  
Signature

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

*David J. Werder*  
Signature

MARCH 11, 1993

NORTH ANNA UNIT 2  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
REACTIVITY CONTROL FUNCTION  
(Sorted by Line Number)

Data Base File Name/Date/Time: NA2\_SSEL.DBF / 03/11/93 / 09:30:38  
Sort Criteria: Line Number  
Filter Criteria: (Line Number < '2000')  
Program File Name & Version: SSEL v0.0

LINE NO.	TRAIN	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	EQUIPMENT		LOCATION		OP. ST.		POWER REQD?	SUPPORTING SYS. DRG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	
						Building	Fir. Elev.	Rm. or Row/Col.	SORT	Normal	Desired				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
1251	2	02	2-CR-52-RTB*	CR*/REACTOR TRIP BREAKER B	12050-1.27-402A	5B	294'	CABLE	S R	--	CLOSED	OPEN	YES	N/A	N/A
1252	1	02	2-CR-52-BYA*	CR*/REACTOR TRIP BREAKER BYPASS A	12050-1.27-402A	5B	294'	CABLE	S R	--	CLOSED	OPEN	YES	N/A	N/A
1253	2	02	2-CR-52-BYB*	CR*/REACTOR TRIP BREAKER BYPASS B	12050-1.27-402A	5B	294'	CABLE	S R	--	CLOSED	OPEN	YES	N/A	N/A
1260	1, 2	23	2-RC-R-1	RC/REACTOR VESSEL	12050-FM-001G/B/C6	CONTMT	256'	--	S	I, 14	N/A	N/A	NO	N/A	N/A
1261	1, 2	23	2-RC-FA*	RC/FUEL ASSEMBLIES	12050-5.13 SERIES	CONTMT	242'	--	S	I, 14	N/A	N/A	NO	N/A	N/A
1262	1, 2	23	2-RC-LR1*	RC/LOWER REACTOR INTERNALS	12050-5.11 SERIES	CONTMT	231'	--	S	I, 14	N/A	N/A	NO	N/A	N/A
1263	1, 2	23	2-RC-UR1*	RC/UPPER REACTOR INTERNALS	12050-5.11-SERIES	CONTMT	262'	--	S	I, 14	N/A	N/A	NO	N/A	N/A
1264	1, 2	23	2-CR-CRD*	CR*/CONTROL ROD DRIVE MECHANISMS	WESTING 618J795 & 618J796	CONTMT	271'	--	S	I, 14, 10	N/A	N/A	NO	N/A	N/A
1268	1, 2	23	2-RC-ES-1	RC/NEUTRON SHIELD TANK	12050-FM-079AS/17	CONTMT	242'	--	S	I, 14	N/A	N/A	NO	N/A	N/A
1269	1, 2	23	2-RC-ND1*	RC/NEUTRON DETECTOR	12050-FM-079AS/17	CONTMT	242'	--	S	I, 14, 13	N/A	N/A	YES	N/A	N/A
1270	1, 2	23	2-RC-ND2*	RC/NEUTRON DETECTOR	12050-FM-079AS/17	CONTMT	242'	--	S	I, 14, 13	N/A	N/A	YES	N/A	N/A
1271	1, 2	23	2-RC-ND3*	RC/NEUTRON DETECTOR	12050-FM-079AS/17	CONTMT	242'	--	S	I, 14, 13	N/A	N/A	YES	N/A	N/A
1272	1, 2	23	2-RC-ND4*	RC/NEUTRON DETECTOR	12050-FM-079AS/17	CONTMT	242'	--	S	I, 14, 13	N/A	N/A	YES	N/A	N/A
1273	1, 2	23	2-RC-ND5*	RC/NEUTRON DETECTOR	12050-FM-079AS/17	CONTMT	242'	--	S	I, 14, 13	N/A	N/A	YES	N/A	N/A
1274	1, 2	23	2-RC-ND6*	RC/NEUTRON DETECTOR	12050-FM-079AS/17	CONTMT	242'	--	S	I, 14, 13	N/A	N/A	YES	N/A	N/A
1275	1, 2	23	2-RC-ND7*	RC/NEUTRON DETECTOR	12050-FM-079AS/17	CONTMT	242'	--	S	I, 14, 13	N/A	N/A	YES	N/A	N/A
1276	1, 2	23	2-RC-ND8*	RC/NEUTRON DETECTOR	12050-FM-079AS/17	CONTMT	242'	--	S	I, 14, 13	N/A	N/A	YES	N/A	N/A
1280	1, 2	23	2-ND-11DU*	ND*/INCORE INST DRIVE UNIT	12050-1.26 SERIES	CONTMT	263'	4	S	I, 14, 44	N/A	N/A	NO	N/A	N/A

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DEAN W. JACOBS / ENGINEER

*D. W. Jacobs*  
Signature

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

*D. J. Werder*  
Signature

MARCH 11, 1993

NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 REACTIVITY CONTROL FUNCTION  
 (Sorted by Line Number)

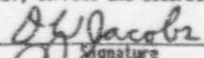
Data Base File Name/Date/Time: NA2\_SSEL.DBF / 03/11/93 / 09:30:38  
 Sort Criteria: Line Number  
 Filter Criteria: (Line Number<'2000')  
 Program File Name & Version: SSEN v0.0

LINE NO.	EQUIP TRATH CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. ST. Normal	ST. Desired	POWER REQD?	SUPPORTING SYS. ENG. NO./REV.	SYS. & SUPPORTING COMPONENTS	REQ'D INTERCONNECTIONS
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
1281	1, 2 23	2-ND-11T05*	ND*/INCORE INST 5-PATH TRANSFER	12050-1.26 SERIES	CONTMT	263'	4	S	1,14, 44	N/A	N/A	NO	N/A	N/A	N/A
1282	1, 2 23	2-ND-11T10*	ND*/INCORE INST 10-PATH TRANSFER	12050-1.26 SERIES	CONTMT	263'	4	S	1,14, 44	N/A	N/A	NO	N/A	N/A	N/A
1283	1, 2 23	2-ND-11T1*	ND*/INCORE INST SEAL TABLE	12050-1.26 SERIES	CONTMT	263'	4	S	1,14, 44	N/A	N/A	NO	N/A	N/A	N/A
1284	1, 2 23	2-ND-11GT*	ND*/INCORE INST GUIDE TUBES	12050-1.26 SERIES	CONTMT	217'	4	S	1,14, 44	N/A	N/A	NO	N/A	N/A	N/A

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DAWN W. JACOBS / ENGINEER

  
 \_\_\_\_\_  
 Signature

MARCH 11, 1993

DAVID J. MERDER / ENGINEER

  
 \_\_\_\_\_  
 Signature

MARCH 11, 1993

## Appendix C

## PRESSURE CONTROL FUNCTION

This Appendix describes the equipment required to control Reactor Coolant System (RCS) pressure. The RCS is the primary system used to achieve pressure control. To increase the RCS pressure, control is achieved by using the pressurizer heaters and by use of the charging pumps for RCS injection.

The pressurizer has two power-operated relief valves (PORVs) in parallel that provide overpressure protection during normal operating conditions. Operation of the pressurizer PORVs is ensured by a backup nitrogen supply should there be a loss of instrument air used to normally operate the PORVs.

Reactor coolant system pressure is used to monitor the pressure control function.

The SSEL is based on the premise that failure of the Pressurizer Relief Tank (PRT) rupture disks due to PORV actuation will not negate the ability to maintain safe shutdown. Based on this premise, the equipment related to the PRT which are included in the SSEL have been limited to the PRT pressure and level monitoring instruments.

The flowpaths selected for pressure control exclude use of the auxiliary pressurizer spray. This normal method for pressure control is excluded in order to shut down without reliance on instrument air. HCV-1142 (HCV-2142), which supplies spray water from the charging pump via the regenerative heat exchanger, would assume the "Fail Close" position in the absence of operating air.

The flowpaths used for the pressure control function are highlighted on the flow diagrams in Appendix N and safe shutdown equipment items in these flowpaths are listed on the SSEL provided in this Appendix. All items listed in the Pressure Control SSEL have line numbers from 2001 to 2999.





LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIP DESCRIPTION	Dwg. No./Rev./Zone	Building	LOCATION Rm. or Row/Col.	Sort Notes (10)	Normal (11)	Desired (12)	REQ'D INTERCONNECTIONS (13)	SUPPORTING COMPONENTS (14)	REQ'D INTERCONNECTIONS (15)	SUPPORTING COMPONENTS (16)		
2018	2	18	1-RC-PT-1445 RC/PZR PRESSURE	11715-FN-09301/22/C6	CORINT	263'	10	5	R	---	ON	ON	YES	11715-RC-106/5; 11715-FK-001C	RACK 1-117
2019	2	20	1-RC-PI-1445 RC/PZR PRESSURE	11715-RC-106/5	SB	277'	CR	5	R	---	ON	ON	YES	N/A	N/A
2020	2	07	1-RC-PCV-1455C RC/PZR PORV	11715-FN-09301/22/03	CORINT	308'	9.5	5	---	---	CLOSED	OP/CL	NO	11715-RC-111/12 11715-FK-001D	1-GN-SOV-1455C-1/2/3
2021	2	08B	1-GN-SOV-1455C-1 GN/PZR PORV PILOT	11715-FN-105A1/20/F5	CORINT	308'	9.5	5	R	33	VENT	AIR	YES	11715-RC-111/12 11715-FK-001D	N/A
2022	2	08B	1-GN-SOV-1455C-2 GN/PZR PORV PILOT	11715-FN-105A1/20/F5	CORINT	308'	9.5	5	R	33	VENT	AIR	YES	11715-RC-111/12 11715-FK-001D	N/A
2023	2	06B	1-GN-SOV-1455C-3 GN/PZR PORV PILOT	11715-FN-105A1/20/F5	CORINT	308'	9.5	5	R	33	AIR	VENT	YES	11715-RC-111/12 11715-FK-001D	N/A
2024	2	07	1-RC-PCV-1456 RC/PZR PORV	11715-FN-09301/22/E3	CORINT	308'	9.5	5	---	---	CLOSED	OP/CL	NO	11715-RC-109/11 11715-FK-001D	1-GN-SOV-1456-1/2/3
2026	2	08B	1-GN-SOV-1456-1 GN/PZR PORV PILOT	11715-FN-105A1/20/F6	CORINT	308'	9.5	5	R	33	VENT	AIR	YES	11715-RC-109/11 11715-FK-001D	N/A
2027	2	08B	1-GN-SOV-1456-2 GN/PZR PORV PILOT	11715-FN-105A1/20/F6	CORINT	308'	9.5	5	R	33	VENT	AIR	YES	11715-RC-109/11 11715-FK-001D	N/A
2028	2	08B	1-GN-SOV-1456-3 GN/PZR PORV PILOT	11715-FN-105A1/20/F6	CORINT	308'	9.5	5	R	33	AIR	VENT	YES	11715-RC-109/11 11715-FK-001D	N/A
2029	1, 2	21	1-RC-TK-2 RC/PRESSURE RELIEF TANK (PRT)	11715-FN-09302/23/E3	CORINT	241' PC	10	5	16	N/A	N/A	N/A	NO	11715-FK-014/14 11715-FK-001D	N/A
2030	1, 2	18	1-RC-PT-1472 RC/PRT PRESSURE	11715-FN-09302/23/C4	CORINT	241'	8	5	R	16	ON	ON	YES	11715-RC-041/3; 11715-FK-001A	RACK 1-103
2031	1, 2	20	1-RC-PI-1472 RC/PRT PRESSURE	11715-RC-041/3	SB	277'	CR	5	R	36	ON	ON	YES	N/A	1-EI-CB-03
2032	1, 2	18	1-RC-LI-1470 RC/PRT LEVEL	11715-FN-09302/23/C4	CORINT	244' 9"	10	5	R	16	ON	ON	YES	11715-RC-035/5 VIMS 26722 11715-FK-001A	N/A
2033	1, 2	20	1-RC-LI-1470 RC/PRT LEVEL	11715-RC-035/5	SB	277'	CR	5	R	36	ON	ON	YES	N/A	1-EI-CB-03
2034	1	07	1-GN-PCV-125B-3 GN/PZR PORV RZ SUPPLY PRESSURE REDUCING VALVE	11715-FN-105A1/20/E4	CORINT	308'	9	5	---	---	OPEN	OPEN	NO	N/A	N/A

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAWN M. JACOBS / ENGINEER  
 Signature: *Dawn M. Jacobs*  
 MARCH 11, 1993

DAVID J. WEBBER / ENGINEER  
 Signature: *David J. Webber*  
 MARCH 11, 1993

LINE NO.	EQUIP TRASH CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Fir-Elev.	LOCATION Rm. or Row/Col.	OP. ST. (Normal)	SOFT NOTICES (10)	Desired (11)	OPEN (12)	REQ'D INTERCONNECTIONS (13)	REQ'D SUPPORTING SYS. (14)	REQ'D INTERCONNECTIONS (15)	REQ'D SUPPORTING SYS. (16)
2035	2	07	1-GH-PCV-125A-3	GH/PZR PORV N2 SUPPLY PRESSURE REDUCING VALVE	11715-FM-105A1/20/76	COMTHT	308'	9	5	--	OPEN	NO	N/A	N/A	N/A
2036	1	07	1-GH-PCV-125B-1	GH/PZR PORV N2 SUPPLY PRESSURE REDUCING VALVE	11715-FM-105A1/20/76	COMTHT	308'	9	5	--	OPEN	NO	N/A	N/A	N/A
2037	1	07	1-GH-PCV-125B-2	GH/PZR PORV N2 SUPPLY PRESSURE REDUCING VALVE	11715-FM-105A1/20/76	COMTHT	308'	9	5	--	OPEN	NO	N/A	N/A	N/A
2038	2	07	1-GH-PCV-125A-1	GH/PZR PORV N2 SUPPLY PRESSURE REDUCING VALVE	11715-FM-105A1/20/76	COMTHT	308'	9.1	5	--	OPEN	NO	N/A	N/A	N/A
2039	2	07	1-GH-PCV-125A-2	GH/PZR PORV N2 SUPPLY PRESSURE REDUCING VALVE	11715-FM-105A1/20/76	COMTHT	308'	9.1	5	--	OPEN	NO	N/A	N/A	N/A
2040	1	18	1-GH-PT-134A	GH/N2 RESERVE PRESSURE	11715-FM-105A1/20/08	COMTHT	296'	9.5	S R	--	ON	ON	YES	11715-GH-007	N/A
2041	1	20	1-GH-PT-134A	GH/N2 RESERVE PRESSURE	11715-GH-007/3	SB	277'	CR	S R	--	ON	ON	YES	N/A	N/A
2042	2	18	1-GH-PT-134B	GH/N2 RESERVE PRESSURE	11715-FM-105A1/20/03	COMTHT	295'	9.5	S R	--	ON	ON	YES	11715-GH-008	N/A
2043	2	20	1-GH-PT-134B	GH/N2 RESERVE PRESSURE	11715-GH-008/3	SB	277'	CR	S R	--	ON	ON	YES	N/A	N/A
2044	1	21	1-GH-TK-1B	GH/N2 RESERVE TANK	11715-FM-105A1/20/07	COMTHT	292'	9.5	5	--	N/A	NO	N/A	N/A	N/A
2045	2	21	1-GH-TK-1A	GH/N2 RESERVE TANK	11715-FM-105A1/20/03	COMTHT	292'	9.5	5	--	N/A	NO	N/A	N/A	N/A
2046	1, 2	07	1-SI-HCY-1850B	SI/ACCUM TEST ISOL	11715-FM-096B1/1/1/16	COMTHT	221'	1.5	--	21, 19	CLOSED	CLOSED	NO	11715-SI-022/3; 1-SI-SOV-1850B 11715-FK-001E	
2047	1, 2	08B	1-SI-SOV-1850B	SI/ACCUM TEST ISOL PILOT	11715-SI-022/3	COMTHT	221'	1.5	R	21, 36, 19	VENT	VERT	NO	11715-FK-001E	1-SI-HCY-1850B
2048	1, 2	08A	1-SI-HOV-1865A	SI/ACCUM OUTLET ISOL	11715-FM-096B1/1/1/17	COMTHT	221'	15	S R	2, 19	OPEN	CLOSED	YES	11715-FK-012A	11715-FK-012A

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAVID N. JACOBS / ENGINEER  
 Signature: *D. Jacobs*  
 MARCH 11, 1993

DAVID J. MEYER / ENGINEER  
 Signature: *D. Meyer*  
 MARCH 11, 1993

NORTH AREA UNIT 2  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
PRESSURE CONTROL FUNCTION  
(Sorted by Line Number)

Data Base File Name/Date/Time: NA2\_SSEL.DBF / 03/11/93 / 09:30:38  
Sort Criteria: Line Number  
Filter Criteria: (Line Number >= '2000') AND (Line Number < '3000')  
Program File Name & Version: SSEL v0.0

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zorse	EQUIPMENT		LOCATION		SORT		OP. ST.		POWER REQ'D	SUPPORTING SYS. DMG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS
					Building	Fir. Elev.	Rm. or Row/Col.	ROTES	Normal	Desired					
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	
2001	1	18	2-RC-PT-2402	RC/REACTOR COOLANT WR PRESSURE	12050-FM-093A3/26/TB	CONTMT	245' C	3.4	S	R	--	ON	ON	YES	12050-RC-126/11 N/A ;12050-FK-1B
2002	1	18	2-RC-PT-2402-1	RC/REACTOR COOLANT WR PRESSURE	12050-FM-093A3/26/DB	CONTMT	245'	3.4	S	R	--	ON	ON	YES	12050-RC-128/9 N/A
2003	1	20	2-RC-PI-2402A	RC/REACTOR COOLANT WR PRESSURE	12050-RC-126/11	SB	276'	8/B	S	R	36	ON	ON	YES	N/A 2-EI-CB-03
2004	1	20	2-RC-PI-2402B	RC/REACTOR COOLANT WR PRESSURE	12050-RC-126/11	SB	276'	8/B	S	R	36	ON	ON	YES	N/A 2-EI-CB-03
2006	1, 2	07	2-CH-HCV-2311	CH/AUX SPRAY ISOL	12050-FM-095C1/23/E6	CONTMT	219'	7	--	28	CLOSED	CLOSED	NO	12050-CH-003/4	2-CH-SOV-2311
2007	1, 2	08B	2-CH-SOV-2311	CH/AUX SPRAY ISOL PILOT	12050-CH-069/3	CONTMT	219'	7	R	28	VENT	VENT	NO	12050-CH-003/4	N/A
2007A	1, 2	23	2-RC-E-2	RC/PRESSURIZER	12050-FM-001B/11/F4	CONTMT	283'	9.5	S	1,14	N/A	N/A	NO	N/A	N/A
2007B	1, 2	07	2-RC-SV-2551A	RC/PRESSURIZER SAFETY VALVE A	12050-FM-093B1/25/E5	CONTMT	316'	9.5	S	1,5	CLOSED	CLOSED	NO	N/A	N/A
2007C	1, 2	07	2-RC-SV-2551B	RC/PRESSURIZER SAFETY VALVE B	12050-FM-093B1/25/E5	CONTMT	316'	9.5	S	1,5	CLOSED	CLOSED	NO	N/A	N/A
2007D	1, 2	07	2-RC-SV-2551C	RC/PRESSURIZER SAFETY VALVE C	12050-FM-093B1/25/E6	CONTMT	316'	9.5	S	1,5	CLOSED	CLOSED	NO	N/A	N/A
2008	2	20	2-RC-HC1*	RC/PZR HEATER CONTROL #1	12050-FM-093B1/25/B4	AUX	274'	CRD ROOM #2	S	R	--	ON	ON	YES	N/A N/A
2009	2	20	2-RC-HC2*	RC/PZR HEATER CONTROL #2	12050-FM-093B1/25/B4	AUX	274'	CRD ROOM #2	S	R	--	ON	ON	YES	N/A N/A
2010	2	18	2-RC-PT-2455	RC/PZR PRESSURE	12050-FM-093B1/25/C6	CONTMT	263'	4	S	R	--	ON	ON	YES	12050-RC-069/8 RACK 2-115
2011	2	20	2-RC-PI-2455	RC/PZR PRESSURE	12050-RC-069/8	SB	277'	CR	S	R	36	ON	ON	YES	N/A 2-EI-CB-03
2012	2	18	2-RC-PT-2456	RC/PZR PRESSURE	12050-FM-093B1/25/C6	CONTMT	263'	5.5	S	R	--	ON	ON	YES	12050-RC-071/8 RACK 2-114
2013	2	20	2-RC-PI-2456	RC/PZR PRESSURE	12050-RC-071/8	SB	277'	CR	S	R	36	ON	ON	YES	N/A 2-EI-CB-03
2014	2	18	2-RC-PT-2457	RC/PZR PRESSURE	12050-FM-093B1/25/C4	CONTMT	263'	6	S	R	--	ON	ON	YES	12050-RC-073/8 RACK 2-112
2015	2	20	2-RC-PI-2457	RC/PZR PRESSURE	12050-RC-073/8	SB	277'	CR	S	R	36	ON	ON	YES	N/A 2-EI-CB-03
2016	2	18	2-RC-PT-2444	RC/PZR PRESSURE	12050-FM-093B1/25/C4	CONTMT	268'	6	S	R	--	ON	ON	YES	12050-RC-107/4 RACK 2-112
2017	2	20	2-RC-PI-2444	RC/PZR PRESSURE	12050-RC-107/4	SB	277'	CR	S	R	--	ON	ON	YES	N/A N/A
2018	2	18	2-RC-PT-2445	RC/PZR PRESSURE	12050-FM-093B1/25/C4	CONTMT	263'	6	S	R	--	ON	ON	YES	12050-RC-105/4 RACK 2-112
2019	2	20	2-RC-PI-2445	RC/PZR PRESSURE	12050-RC-105/4	SB	277'	CR	S	R	--	ON	ON	YES	N/A N/A

CERTIFICATION:

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DAWN W. JACOBS / ENGINEER

*Dawn W. Jacobs*  
Signature

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

*David J. Werder*  
Signature

MARCH 11, 1993

NORTH ANNA UNIT 2  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
PRESSURE CONTROL FUNCTION  
(Sorted by Line Number)

Data Base File Name/Date/Time: WA2\_SSEL.DBF / 03/11/93 / 09:30:38  
Sort Criteria: Line Number  
Filter Criteria: (Line Number >= '2000') AND (Line Number < '3000')  
Program File Name & Version: SSEL v0.0

LINE NO.	EQUIP TRAIN CLASS	MARX NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D	SUPPORTING SYS. DMG. NO./REV.	SYS. & SUPPORTING COMPONENTS	REQ'D INTERCONNECTIONS
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
2020	2	07	2-RC-PCV-2455C	RC/PZR PORV	12050-FM-093B1/25/D3	CONTMT	303'	5	S	--	CLOSED	OP/CL	NO	12050-RC-108/B	2-GN-SOV-2455C-1/2/3
2021	2	08B	2-GN-SOV-2455C-1	GN/PZR PORV PILOT	11715-FM-105A1/20/C6	CONTMT	308'	5	S	R 33	VENT	AIR	YES	N/A	N/A
2022	2	08B	2-GN-SOV-2455C-2	GN/PZR PORV PILOT	11715-FM-105A1/20/C6	CONTMT	308'	5	S	R 33	VENT	AIR	YES	N/A	N/A
2023	2	08B	2-GN-SOV-2455C-3	GN/PZR PORV PILOT	11715-FM-105A1/20/C6	CONTMT	308'	5	S	R 33	AIR	VENT	YES	N/A	N/A
2024	1, 2	21	2-RC-TK-2	RC/PRESSURE RELIEF TANK (PRT)	12050-FM-093B2/26/C5	CONTMT	241' PC	6	S	16	N/A	N/A	NO	12050-FK-1A	N/A
2025	1, 2	18	2-RC-PT-2472	RC/PRT PRESSURE	12050-FM-093B2/26/C5	CONTMT	216'	6.8	S	R 16	ON	ON	YES	12050-RC-041/3	RACK 2-111
2026	1, 2	20	2-RC-P1-2472	RC/PRT PRESSURE	12050-RC-041/3	SB	277'	CR	S	R 36	ON	ON	YES	N/A	2-EI-CB-03
2027	1, 2	18	2-RC-LT-2470	RC/PRT LEVEL	12050-FM-093B2/26/C4	CONTMT	232'	5.5	S	R 16	ON	ON	YES	12050-RC-035/3	N/A
2028	1, 2	20	2-RC-LI-2470	RC/PRT LEVEL	12050-RC-035/3	SB	277'	CR	S	R 36	ON	ON	YES	N/A	2-EI-CB-03
2029	2	07	2-RC-PCV-2456	RC/PZR PORV	12050-FM-093B1/25/E3	CONTMT	308'	5.1	S	--	CLOSED	OP/CL	NO	12050-RC-106/6	2-GN-SOV-2456-1/2/3
2031	2	08B	2-GN-SOV-2456-1	GN/PZR PORV PILOT	11715-FM-105A1/20/C5	CONTMT	308'	5.1	S	R 33	VENT	AIR	YES	N/A	N/A
2032	2	08B	2-GN-SOV-2456-2	GN/PZR PORV PILOT	11715-FM-105A1/20/C5	CONTMT	308'	5.1	S	R 33	VENT	AIR	YES	N/A	N/A
2033	2	08B	2-GN-SOV-2456-3	GN/PZR PORV PILOT	11715-FM-105A1/20/C4	CONTMT	308'	5.1	S	R 33	AIR	VENT	YES	N/A	N/A
2034	1	07	2-GN-PCV-225B-3	GN/PZR PORV H2 SUPPLY PRESSURE REDUCING VALVE	11715-FM-105A1/20/C6	CONTMT	308'	5	S	--	OPEN	OPEN	NO	N/A	N/A
2035	2	07	2-GN-PCV-225A-3	GN/PZR PORV H2 SUPPLY PRESSURE REDUCING VALVE	11715-FM-105A1/20/C4	CONTMT	308'	5	S	--	OPEN	OPEN	NO	N/A	N/A
2036	1	07	2-GN-PCV-225B-1	GN/PZR PORV H2 SUPPLY PRESSURE REDUCING VALVE	11715-FM-105A1/20/B5	CONTMT	308'	5	S	--	OPEN	OPEN	NO	N/A	N/A
2037	1	07	2-GN-PCV-225B-2	GN/PZR PORV H2 SUPPLY PRESSURE REDUCING VALVE	11715-FM-105A1/20/B6	CONTMT	308'	5	S	--	OPEN	OPEN	NO	N/A	N/A
2038	2	07	2-GN-PCV-225A-1	GN/PZR PORV H2 SUPPLY PRESSURE REDUCING VALVE	11715-FM-105A1/20/B4	CONTMT	308'	5.1	S	--	OPEN	OPEN	NO	N/A	N/A
2039	2	07	2-GN-PCV-225A-2	GN/PZR PORV H2 SUPPLY PRESSURE REDUCING VALVE	11715-FM-105A1/20/B4	CONTMT	308'	5.1	S	--	OPEN	OPEN	NO	N/A	N/A
2040	1	18	2-GN-PT-234A	GN/H2 RESERVE PRESSURE	11715-FM-105A1/20/B8	CONTMT	297'	5.5	S	R --	ON	ON	YES	N/A	N/A

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAWN W. JACOBS / ENGINEER

*DW Jacobs*  
Signature

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

*DJ Werder*  
Signature

MARCH 11, 1993

LINE NO.	TRAIL CLASS	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Eng. No./Rev./Zone	Building	EQUIPMENT Ftr. Elev.	LOCATION	Sort Notes	Normal	Desired	OP. ST.	POWER SUPPORTING SYS.	REG'D INTERCONNECTIONS	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
2041	1	20	2-GH-P1-234A	GN/02 RESERVE PRESSURE	12050-GH-004/2	CORINT	297'	5.5	S R --	OH	OH	YES	N/A	N/A	
2042	2	18	2-GH-PT-234B	GN/02 RESERVE PRESSURE	11715-FH-105A1/20/B3	CORINT	295'	5.5	S R --	OH	OH	YES	N/A	N/A	
2043	2	20	2-GH-P1-234B	GN/02 RESERVE PRESSURE	12050-GH-005/2	CORINT	295'	5.5	S R --	OH	OH	YES	N/A	N/A	
2044	1	21	2-GH-TK-1B	GN/02 RESERVE TANK	11715-FH-105A1/20/B8	CORINT	291' 10"	5.5	S --	N/A	N/A	NO	N/A	N/A	
2045	2	21	2-GH-TK-1A	GN/02 RESERVE TANK	11715-FH-105A1/20/B3	CORINT	291' 10"	5.5	S --	N/A	N/A	NO	N/A	N/A	
2046	1, 2	07	2-SI-HCV-2850B	SI/ACCUM TEST ISOL	12050-FH-096B1/19/H6	CORINT	221'	14.5	--	21,19	CLOSED	CLOSED	NO	12050-SI-022/2	N/A
2047	1, 2	08B	2-SI-SOV-2850B	SI/ACCUM TEST ISOL PILOT	12050-SI-027/2	CORINT	221'	14.5	R	21,36,19	VENT	VENT	NO	N/A	2-SI-HCV-2850B
2048	1, 2	08A	2-SI-HOV-2855A	SI/ACCUM OUTLET ISOL	12050-FH-096B1/19/H3	CORINT	220'	14.5	S R 2,19	OPEN	CLOSED	YES	N/A	2H12N	N/A
2049	1, 2	R	2-SI-225	SI/ACCUM OUTLET MANUAL ISOL	12050-FH-096B1/25/B6	CORINT	220'	14.8	S R 15	OPEN	CLOSED	NO	N/A	N/A	N/A

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DAWN W. JACOBS / ENGINEER  
 Signature: *Dawn W. Jacobs*  
 MARCH 11, 1993

DAVID J. WERDER / ENGINEER  
 Signature: *David J. Werder*  
 MARCH 10, 1993

LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	DOG. NO./REV./ZONE	EQUIPMENT BUILDING	LOCATION	OP. ST.	POWER SUPPORTING SYS.	REQ'D INTERCONNECTIONS						
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
2001	1	18	1-RC-PT-1402	RC/REACTOR COOLANT WR PRESSURE	11715-FM-093A3/22/0A	CONTMT	241' C	9	S R --	ON	ON	YES	11715-RC-131/16	RACK 1-103	11715-FK-001A
2002	1	18	1-RC-PT-1402-1	RC/REACTOR COOLANT WR PRESSURE	11715-FM-093A3/22/0A	CONTMT	241'	9	S R --	ON	ON	YES	11715-RC-133/S	N/A	
2003	1	20	1-RC-PI-1402	RC/REACTOR COOLANT WR PRESSURE	11715-RC-131/6	SB	277'	CR	S R 36	ON	ON	YES	N/A	1-EI-CB-03	
2004	1	20	1-RC-PI-1402B	RC/REACTOR COOLANT WR PRESSURE	11715-RC-131/6	SB	277'	CR	S R 36	ON	ON	YES	N/A	1-EI-CB-03	
2006	1, 2	07	1-CH-MCV-1311	CH/AUX SPRAY ISOL	11715-FM-095C1/14/76	CONTMT	220'	11	--	28	CLOSED	CLOSED	NO	11715-CH-003/4; 1-CH-SOV-1311	11715-FK-001B
2007	1, 2	08B	1-CH-SOV-1311	CH/AUX SPRAY ISOL PILOT	11715-CH-003/4	CONTMT	220'	11	R	28	VERT	VERT	NO	11715-FK-001D	N/A
2007A	1, 2	23	1-RC-E-2	RC/PRESSURIZER	11715-FM-093C/12/0S	CONTMT	283'	9.5	S	1, 14	N/A	N/A	NO	N/A	
2007B	1, 2	07	1-RC-SV-1551A	RC/PRESSURIZER SAFETY VALVE B	11715-FM-093B1/22/ES	CONTMT	316'	9.5	S	1, 5	CLOSED	CLOSED	NO	N/A	
2007C	1, 2	07	1-RC-SV-1551B	RC/PRESSURIZER SAFETY VALVE B	11715-FM-093B1/22/ES	CONTMT	316'	9.5	S	1, 5	CLOSED	CLOSED	NO	N/A	
2007D	1, 2	07	1-RC-SV-1551C	RC/PRESSURIZER SAFETY VALVE C	11715-FM-093B1/22/ES	CONTMT	316'	9.5	S	1, 5	CLOSED	CLOSED	NO	N/A	
2008	2	20	1-RC-HE1*	RC/PZR HEATER CONTROL #1	11715-FM-093B1/22/04	AUX	274'	CRD RM #1	S R --	ON	ON	YES	N/A	N/A	
2009	2	20	1-RC-HE2*	RC/PZR HEATER CONTROL #2	11715-FM-093B1/22/04	AUX	274'	CRD RM #1	S R --	ON	ON	YES	N/A	N/A	
2010	2	18	1-RC-PT-1455	RC/PZR PRESSURE	11715-FM-093B1/22/CS	CONTMT	263'	9.2	S R --	ON	ON	YES	11715-RC-069/10	N/A	11715-FK-001C
2011	2	20	1-RC-PI-1455	RC/PZR PRESSURE	11715-RC-069/10	SB	277'	CR	S R 36	ON	ON	YES	N/A	1-EI-CB-03	
2012	2	18	1-RC-PT-1456	RC/PZR PRESSURE	11715-FM-093B1/22/CS	CONTMT	263'	9.5	S R --	ON	ON	YES	11715-RC-071/9; RACK 1-118	11715-FK-001C	
2013	2	20	1-RC-PI-1456	RC/PZR PRESSURE	11715-RC-071/9	SB	277'	CR	S R 36	ON	ON	YES	N/A	1-EI-CB-03	
2014	2	18	1-RC-PT-1457	RC/PZR PRESSURE	11715-FM-093B1/22/CS	CONTMT	263'	10	S R --	ON	ON	YES	11715-RC-072/9; RACK 1-117	11715-FK-001C	
2015	2	20	1-RC-PI-1457	RC/PZR PRESSURE	11715-RC-072/9	SB	277'	CR	S R 36	ON	ON	YES	N/A	1-EI-CB-03	
2016	2	18	1-RC-PT-1444	RC/PZR PRESSURE	11715-FM-093B1/22/CS	CONTMT	263'	9.5	S R --	ON	ON	YES	11715-RC-110/5; RACK 1-116	11715-FK-001C	
2017	2	18	1-RC-PI-1444	RC/PZR PRESSURE	11715-RC-110/5	SB	277'	CR	S R --	ON	ON	YES	N/A	N/A	

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAWN W. JACOBS / ENGINEER  
 Signature: *Dawn W. Jacobs*  
 MARCH 11, 1993

DAVID J. WENDER / ENGINEER  
 Signature: *David J. Wender*  
 MARCH 11, 1993

## Appendix D

## INVENTORY CONTROL FUNCTION (INTACT PLANT)

This section describes the equipment required to control Reactor Coolant System (RCS) inventory for an intact plant. The charging portion of the CVCS accomplishes reactor coolant inventory control by providing makeup water to compensate for RCS shrinkage and reactor coolant pump (RCP) seal leakage.

The normal and excess letdown flowpath used for reactor coolant volume control and purification would be lost due to loss of instrument air. The demineralizers are not vital to the safe shutdown of the plant for the 72 hour time period and are also isolated with the letdown flowpath. Also, it is neither practical nor desirable to seismically qualify these components in such high radiation areas.

Two separate and independent flow paths can be used for reactor coolant makeup: the seal injection lines to the seals of the RCPs, and the normal charging line to the Loop 2 cold leg. These two flowpaths will be used as required to maintain the pressurizer level in an acceptable range. The CVCS flow path which is available for charging to the RCS is shown on the diagrams. The CVCS equipment required to operate to achieve and maintain reactor coolant inventory control is listed in the SSEL.

Charging will be accomplished by operating a minimum of one charging pump per unit. The pump for the affected unit will take its suction from the RWST and inject borated water to the loop 2 cold leg or the RCP seal injection lines into the RCS.

In addition to the CVCS which has an active role in accomplishing the inventory control function, the RCS and several connected systems (e.g., safety injection, sampling) have passive roles since they form parts of the fluid boundary. Equipment items which constitute the fluid boundary required for inventory control are also shown on the diagrams and the SSEL. It should be noted that a discharge path is not required from the plant for the inventory control function because the plant temperature (and coolant volume) will be decreasing. If prolonged seal injection increases pressurizer level beyond the acceptable range, the pressurizer PORVs can be periodically opened.

Reactor vessel level, pressurizer level, volume control tank (VCT) levels and RWST level indication will serve to monitor the inventory control function.

The flowpaths used for the inventory control function are highlighted on the flow diagrams in Appendix N and the safe shutdown equipment items in these flowpaths are listed in the SSEL provided in this Appendix. All items in the Inventory Control SSEL for an intact plant have line numbers from 3001 to 3999. The inventory control function for a small break LOCA is addressed in Appendix H.



LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION	OP. ST.	Normal	Desired	REQ'D	SYS. NO./REV.	REV'D INTERCONNECTIONS & SUPPORTING COMPONENTS
(1)	(2)	(3)	(4)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
3001	1	088	1-RC-SOV-101A-1	RC/RV VENT VALVE	262'	TOP OF RV HEAD	R	---	CLOSED	CLOSED	NO	N/A	N/A
3002	2	088	1-RC-SOV-101A-2	RC/RV VENT VALVE	262'	TOP OF RV HEAD	R	---	CLOSED	CLOSED	NO	N/A	N/A
3003	1	088	1-RC-SOV-101B-1	RC/RV VENT VALVE	262'	TOP OF RV HEAD	R	---	CLOSED	CLOSED	NO	N/A	N/A
3004	2	088	1-RC-SOV-101B-2	RC/RV VENT VALVE	262'	TOP OF RV HEAD	R	---	CLOSED	CLOSED	NO	N/A	N/A
3005	1, 2	18	1-RC-LT-1459	RC/PZR LEVEL	263'	9	S R	---	ON	ON	YES	11715-RC-061/13	RACK 1-115
												11715-FK-001C	
3005A	1, 2	20	1-RC-LT-1459A	RC/PZR LEVEL IND CH 1	277'	CR	S R	---	ON	ON	YES	11715-FE-11A	1-EI-CB-03
3005B	1, 2	20	1-RC-LT-1459B	RC/PZR LEVEL IND CH 1	254'	EN SGR8 01	S R	---	ON	ON	YES	11715-FE-11A	1-EI-CB-06A
3006	1, 2	18	1-RC-LT-1460	RC/PZR LEVEL	263'	10	S R	---	ON	ON	YES	11715-RC-062/9;	RACK 1-118
												11715-FK-001C	
3006A	1, 2	20	1-RC-LT-1460	RC/PZR LEVEL IND CH 11	277'	CR	S R	---	ON	ON	YES	11715-FE-11A	1-EI-CB-03
3007	1, 2	18	1-RC-LT-1461	RC/PZR LEVEL	263'	9.5	S R	---	ON	ON	YES	11715-RC-063/10	RACK 1-117
												11715-FK-001C	
3007A	1, 2	20	1-RC-LT-1461	RC/PZR LEVEL IND CH 111	277'	CR	S R	---	ON	ON	YES	11715-FE-11B	1-EI-CB-03
3008	2	18	1-RC-LT-1462	RC/PZR LEVEL	263'	9.5	S R	---	ON	ON	YES	11715-RC-064/4;	RACK 1-116
												11715-FK-001C	
3008A	2	20	1-RC-LT-1462	RC/PZR LEVEL - COLD CAL (STOP)	277'	CR	S R	---	ON	ON	YES	11715-RC-064	1-EI-CB-03
3013	1	088	1-RC-SOV-102A1	RC/PZR VENT VALVE	291' PC	9	R	---	CLOSED	CLOSED	NO	N/A	N/A
3014	2	088	1-RC-SOV-102A2	RC/PZR VENT VALVE	291' PC	9	R	---	CLOSED	CLOSED	NO	N/A	N/A
3015	1	088	1-RC-SOV-102B1	RC/PZR VENT VALVE	291' PC	9	R	---	CLOSED	CLOSED	NO	N/A	N/A
3016	2	088	1-RC-SOV-102B2	RC/PZR VENT VALVE	291' PC	9	R	---	CLOSED	CLOSED	NO	N/A	N/A
3017	1	08A	1-RC-MOV-1535	RC/PORV BLOCK VALVE	308'	9.4	S R	12	OPEN	OP/CL	YES	11715-RC-134/6	N/A
3018	1	08A	1-RC-MOV-1536	RC/PORV BLOCK VALVE	308'	9.2	S R	12	OPEN	OP/CL	YES	11715-RC-133/5	N/A
3019	1, 2	19	1-RC-TE-1463	RC/PZR PORV OUTLET TOP	311'	9	S R	---	ON	ON	YES	11715-RC-056/4;	N/A
												11715-RC-055	

CERTIFICATION:  
 The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAWN W. JACOBS / ENGINEER  
 MARCH 11, 1993

*Dawn W. Jacobs*  
 Signature

DAVID J. WERDER / ENGINEER  
 MARCH 11, 1993

*David J. Werder*  
 Signature

LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	Equipment Location	Sort Notes	OP. ST.	Desired	Power Supporting Sys.	Req'd Interconnections				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
3020	1, 2	20	1-RC-TI-1463	RC/PZR PORV OUTLET TEMP	11715-RC-0256/A	S8	277'	CR	S R 36	ON	ON	YES	N/A		1-EI-CB-03
3020A	1, 2	23	1-RC-P-1A	RC/REACTOR COOLANT PUMP A	11715-FM-093B3/19/E4	CONTHT	262'	1	S R 1,14	ON	OFF	NO	N/A		N/A
3020B	1, 2	23	1-RC-P-1B	RC/REACTOR COOLANT PUMP B	11715-FM-093B3/19/E4	CONTHT	262'	12.5	S R 1,14	ON	OFF	NO	N/A		N/A
3020C	1, 2	23	1-RC-P-1C	RC/REACTOR COOLANT PUMP C	11715-FM-093B3/19/A4	CONTHT	262'	7	S R 1,14	ON	OFF	NO	N/A		N/A
3021	1, 2	19	1-RC-TE-1317	RC/RV/LIS IN-CORE TRIMBLE	13075-FM-093C1/06/C8	CONTHT	216'	4	S R --	ON	ON	YES	N/A		N/A
3022	1, 2	19	1-RC-TE-1327	RC/RV/LIS IN-CORE TRIMBLE	13075-FM-093C1/06/C8	CONTHT	241'	4	S R --	ON	ON	YES	N/A		N/A
3023	1, 2	19	1-RC-TE-1318	RC/RV/LIS TRIMBLE TO BELLOW'S LINE	13075-FM-093C1/06/E7	CONTHT	241' 3"	4	S R --	ON	ON	YES	N/A		N/A
3024	1, 2	19	1-RC-TE-1328	RC/RV/LIS IN-CORE TRIMBLE	13075-FM-093C1/06/B8	CONTHT	241' 3"	4	S R --	ON	ON	YES	N/A		N/A
3025	1, 2	18	1-RC-L15-1312	RC/SEAL TABLE ISOLATOR	13075-FM-093C1/06/B5	AUX	259' 6"	12/JM	S R --	ON	ON	YES	N/A		N/A
3026	1, 2	18	1-RC-L1-1310	RC/PLENUM LEVEL	13075-FM-093C1/06/E2	AUX	259' 6"	12/JM	S R --	ON	ON	YES	N/A		N/A
3027	1, 2	18	1-RC-L1-1312	RC/M-RANGE LEVEL	13075-FM-093C1/06/E3	AUX	259' 6"	12/JM	S R --	ON	ON	YES	N/A		N/A
3028	1, 2	18	1-RC-L1-1311	RC/M-RANGE LEVEL	13075-FM-093C1/06/E4	AUX	259' 6"	12/JM	S R --	ON	ON	YES	N/A		N/A
3029	1, 2	18	1-RC-L15-1311	RC/RV HEAD ISOLATOR	13075-FM-093C1/06/E5	AUX	259' 6"	12/JM	S R --	ON	ON	YES	N/A		N/A
3030	1, 2	18	1-RC-L15-1310	RC/RV LEG ISOLATOR	13075-FM-093C1/06/F5	AUX	259' 6"	12/JM	S R --	ON	ON	YES	N/A		N/A
3031	1, 2	19	1-RC-TE-1315	RC/RV/LIS TEMP	13075-FM-093C1/06/E6	CONTHT	258' 8"	9	S R --	ON	ON	YES	N/A		N/A
3032	1, 2	19	1-RC-TE-1316	RC/RV/LIS TEMP	13075-FM-093C1/06/F6	CONTHT	260' CB	5	S R --	ON	ON	YES	N/A		N/A
3033	1, 2	19	1-RC-TE-1314	RC/RV/LIS TEMP	13075-FM-093C1/06/F6	CONTHT	282'	5	S R --	ON	ON	YES	N/A		N/A
3034	1, 2	19	1-RC-TE-1313	RC/RV/LIS TEMP	13075-FM-093C1/06/F7	CONTHT	291'	4	S R --	ON	ON	YES	N/A		N/A
3035	1, 2	19	1-RC-TE-1323	RC/RV/LIS TEMP	13075-FM-093C2/06/E3	CONTHT	291'	4	S R --	ON	ON	YES	N/A		N/A
3036	1, 2	19	1-RC-TE-1324	RC/RV/LIS TEMP	13075-FM-093C2/06/E4	CONTHT	282'	5	S R --	ON	ON	YES	N/A		N/A
3037	1, 2	19	1-RC-TE-1325	RC/RV/LIS TEMP	13075-FM-093C2/06/F4	CONTHT	259' 5"	3	S R --	ON	ON	YES	N/A		N/A
3038	1, 2	18	1-RC-L15-1320	RC/RV LEG ISOLATOR	13075-FM-093C2/06/D5	AUX	259' 6"	11/K	S R --	ON	ON	YES	N/A		N/A
3039	1, 2	18	1-RC-L15-1321	RC/RV HEAD ISOLATOR	13075-FM-093C2/06/E5	AUX	259' 6"	11/K	S R --	ON	ON	YES	N/A		N/A

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

MARCH 11, 1993

DAVID H. JACOBS / ENGINEER

*D. H. Jacobs*  
 Signature

DAVID J. WARDER / ENGINEER

MARCH 11, 1993

*D. J. Warder*  
 Signature

LINE NO.	EQUIP TRAIL CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col	SOFT NOTES	OP. ST. Normal	Desired REQ'D	DWG. NO./REV.	SUPPORTING COMPONENTS			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
3040	1, 2	18	1-RC-LT-1321	RC/RANGE LEVEL	13075-FM-093C2/06/FT AUX	259' 6"	11/K	S R --	ON	ON	YES	M/A	N/A		
3041	1, 2	18	1-RC-LT-1322	RC/RANGE LEVEL	13075-FM-093C2/06/FT AUX	259' 6"	11/K	S R --	ON	ON	YES	M/A	N/A		
3042	1, 2	18	1-RC-LT-1320	RC/PLENUM LEVEL	13075-FM-093C2/06/FT AUX	259' 6"	11/K	S R --	ON	ON	YES	M/A	N/A		
3043	1, 2	18	1-RC-LT-1322	RC/SEAL TABLE ISOLATOR	13075-FM-093C2/06/AS AUX	259' 6"	11/K	S R --	ON	ON	YES	M/A	N/A		
3044	1	08A	1-CR-MOV-1115D	CR/WST TO CCP INLET ISOL	11715-FM-095B2/24/R8 AUX	244'	7.6/J	S R --	CLOSED	OPEN	YES	M/A	N/A		
3045	2	08A	1-CR-MOV-1115R	CR/WST TO CCP INLET ISOL	11715-FM-095B2/24/R8 AUX	244'	7.6/J	S R --	CLOSED	OPEN	YES	M/A	N/A		
3046	1, 2	21	1-QS-TK-1	QS/REFUELING WATER STORAGE TANK (WST)	11715-FM-091A1/20/07 YARD	271'	--	S --	N/A	N/A	NO	N/A	1-05-L-100A/R/C/D		
3047	1, 2	18	1-QS-LT-100A	QS/WST LEV'L	11715-FM-091A1/20/08 RFWA	274'	NOTE 1A	S R --	ON	ON	YES	11715-05-003/9	E/A		
3048	1, 2	18	1-QS-LT-100B	QS/WST LEVEL	11715-FM-091A1/20/08 RFWA	274'	NOTE 1B	S R --	ON	ON	YES	11715-05-004/10	N/A		
3049	1, 2	18	1-QS-LT-100C	QS/WST LEVEL	11715-FM-091A1/20/08 RFWA	274'	NOTE 1A	S R --	ON	ON	YES	11715-05-016/8	N/A		
3050	1, 2	18	1-QS-LT-100D	QS/WST LEVEL	11715-FM-091A1/20/08 RFWA	274'	NOTE 1B	S R --	ON	ON	YES	11715-05-017/9	N/A		
3051	1, 2	20	1-QS-LI-100A	QS/WST LEVEL	11715-FM-091A1/20/08 SB	277'	CR	S R 36	ON	ON	YES	11715-05-003/9	1-EI-CB-05		
3052	1, 2	20	1-QS-LI-100B	QS/WST LEVEL	11715-FM-091A1/20/08 SB	277'	CR	S R 36	ON	ON	YES	11715-05-004/10	1-EI-CB-05		
3053	1, 2	20	1-QS-LI-100C	QS/WST LEVEL	11715-FM-091A1/20/08 SB	277'	CR	S R 36	ON	ON	YES	11715-05-016/8	1-EI-CB-05		
3054	1, 2	20	1-QS-LI-100D	QS/WST LEVEL	11715-FM-091A1/20/08 SB	277'	CR	S R 36	ON	ON	YES	11715-05-017/9	1-EI-CB-05		
3055	1	08A	1-QS-MOV-102A	QS/REFUELING WATER CHECK AND TANK ISOL	11715-FM-091A1/20/05 YARD/TUMBL	270'	2 FT H OF AFPH	R A, 21	CLOSED	CLOSED	NO	N/A	N/A		
3055	1	08A	1-QS-MOV-102A	QS/REFUELING WATER CHECK AND TANK ISOL	11715-FM-091A1/20/05 YARD/TUMBL	270'	2 FT H OF AFPH	S R 1, 21	CLOSED	OPEN	YES	N/A	1-EP-MC-20		
3056	2	08A	1-QS-MOV-102B	QS/REFUELING WATER CHECK AND TANK ISOL	11715-FM-091A1/20/06 YARD/TUMBL	272'	--	R A, 21	CLOSED	CLOSED	NO	N/A	N/A		
3056	2	08A	1-QS-MOV-102B	QS/REFUELING WATER CHECK AND TANK ISOL	11715-FM-091A1/20/06 YARD/TUMBL	272'	--	S R 1, 21	CLOSED	OPEN	YES	N/A	1-EP-MC-21		
3059	1	08A	1-QS-MOV-101A	QS/QUEMCH SPRAY PUMP A OUTLET ISOL	11715-FM-091A2/23/05 SFCD	256'	NOTE 1H	R A	CLOSED	CLOSED	NO	N/A	N/A		

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DANNI W. JACOBS / ENGINEER  
 Signature: *D. Jacobs*  
 MARCH 11, 1993

DAVID J. REEDER / ENGINEER  
 Signature: *D. Reeder*  
 MARCH 11, 1993

LINE NO.	TRAIN CLASS	EQUIP MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dep. No./Rev./Zone	Building	Equipment Fr. Elev.	LOCATION	Normal	Desired	REQ'D INTERCONNECTIONS							
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)			
3069	1	08A	1-05-HW-101A	05/QUIENCH SPRAY PUMP A	OUTLET ISOL	11715-PN-091A2/23/05	SFGD	256'	NOTE 3H	S	R	I	CLOSED	OPEN	YES	N/A	1-EP-ME-19
3070	1	08A	1-05-HW-101B	05/QUIENCH SPRAY PUMP B	OUTLET ISOL	11715-PN-091A2/23/05	SFGD	256'	NOTE 3H	R	A	CLOSED	CLOSED	NO	N/A	N/A	
3070	2	08A	2-05-HW-101B	05/QUIENCH SPRAY PUMP B	OUTLET ISOL	11715-PN-091A2/23/05	SFGD	256'	NOTE 3H	S	R	I	CLOSED	OPEN	YES	N/A	1-EP-ME-21

CERTIFICATION:

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DAWN W. JACOBS / ENGINEER

*Dawn W. Jacobs*  
 Signature  
 MARCH 11, 1993

DAVID J. WERDER / ENGINEER

*David J. Werder*  
 Signature  
 MARCH 11, 1993

NORTH ANNA UNIT 2  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
INVENTORY CONTROL FUNCTION  
(Sorted by Line Number)

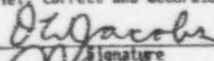
Data Base File Name/Date/Time: WA2\_SSEL.DBF / 03/11/93 / 09:30:38  
Sort Criteria: Line Number  
Filter Criteria: (Line Number >= '3000') AND (Line Number < '4000')  
Program File Name & Version: SSEM v0.0

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Fir. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. ST.		POWER REQ'D	SUPPORTING SYS. DNG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	
										Normal	Desired				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
3001	1	08B	2-RC-SOV-201A-1	RC/RV VENT VALVE	12050-FM-093A3/26/A5	CONTMT	263'	TOP OF RV HEAD	R	--	CLOSED	CLOSED	NO	N/A	N/A
3002	2	08B	2-RC-SOV-201A-2	RC/RV VENT VALVE	12050-FM-093A3/26/A5	CONTMT	263'	TOP OF RV HEAD	R	--	CLOSED	CLOSED	NO	N/A	N/A
3003	1	08B	2-RC-SOV-201B-1	RC/RV VENT VALVE	12050-FM-093A3/26/A5	CONTMT	263'	TOP OF RV HEAD	R	--	CLOSED	CLOSED	NO	N/A	N/A
3004	2	08B	2-RC-SOV-201B-2	RC/RV VENT VALVE	12050-FM-093A3/26/A5	CONTMT	263'	TOP OF RV HEAD	R	--	CLOSED	CLOSED	NO	N/A	N/A
3005	1, 2	18	2-RC-LT-2459	RC/PZR LEVEL	12050-FM-093B1/25/C6	CONTMT	263'	4.8	S R	--	ON	ON	YES	12050-RC-061/8	RACK 2-115
3006	1, 2	20	2-RC-LI-2459A	RC/PZR LEVEL IND CH I	12050-RC-061/8	SB	277'	CR	S R	--	ON	ON	YES	N/A	2-EI-CB-03
3006A	1, 2	20	2-RC-LI-2459B	RC/PZR LEVEL IND CH I	12050-RC-061/8	SB	254'	EM SMGR #2	S R	--	ON	ON	YES	N/A	2-EI-CB-06A
3007	1, 2	18	2-RC-LT-2460	RC/PZR LEVEL	12050-FM-093B1/25/C6	CONTMT	263'	5.5	S R	--	ON	ON	YES	12050-RC-062/7	RACK 2-114
3008	1, 2	20	2-RC-LI-2460	RC/PZR LEVEL IND CH II	12050-RC-062/7	SB	277'	CR	S R	--	ON	ON	YES	N/A	2-EI-CB-03
3009	1, 2	18	2-RC-LT-2461	RC/PZR LEVEL	12050-FM-093B1/25/C4	CONTMT	263'	6	S R	--	ON	ON	YES	12050-RC-063/8	RACK 2-112
3010	1, 2	20	2-RC-LI-2461	RC/PZR LEVEL IND CH III	12050-RC-063/8	SB	277'	CR	S R	--	ON	ON	YES	N/A	2-EI-CB-03
3011	2	18	2-RC-LT-2462	RC/PZR LEVEL	12050-FM-093B1/25/C4	CONTMT	267'	6	S R	--	ON	ON	YES	12050-RC-064/4	RACK 2-112
3012	2	20	2-RC-LI-2462	RC/PZR LEVEL-COLD CAL (STUP)	12050-RC-064/4	SB	277'	CR	S R	--	ON	ON	YES	N/A	2-EI-CB-03
3016	1	08B	2-RC-SOV-202A1	RC/PZR VENT VALVE	12050-FM-093B1/25/C3	CONTMT	296'	5.5	R	--	CLOSED	CLOSED	NO	N/A	N/A
3017	2	08B	2-RC-SOV-202A2	RC/PZR VENT VALVE	12050-FM-093B1/25/C3	CONTMT	296'	5.5	R	--	CLOSED	CLOSED	NO	N/A	N/A
3018	1	08B	2-RC-SOV-202B1	RC/PZR VENT VALVE	12050-FM-093B1/25/C3	CONTMT	296'	5.5	R	--	CLOSED	CLOSED	NO	N/A	N/A
3019	2	08B	2-RC-SOV-202B2	RC/PZR VENT VALVE	12050-FM-093B1/25/C3	CONTMT	296'	5.5	R	--	CLOSED	CLOSED	NO	N/A	N/A
3020	1	08A	2-RC-MOV-2535	RC/PZR PORV BLOCK VALVE	12050-FM-093B1/25/E4	CONTMT	308'	5.1	S R	12	OPEN	OP/CL	YES	N/A	N/A
3021	1	08A	2-RC-MOV-2536	RC/PZR PORV BLOCK VALVE	12050-FM-093B1/25/D4	CONTMT	308'	5	S R	12	OPEN	OP/CL	YES	N/A	N/A
3021A	1, 2	19	2-RC-TE-2463	RC/PZR PORV OUTLET TEMP	12050-FM-093B1/25/F3	RC	308'	5.0	S R	--	ON	ON	YES	12050-RC-056/5	N/A
3021B	1, 2	20	2-RC-TI-2463	RC/PZR PORV OUTLET TEMP	12050-RC-056/5	SB	277'	CR	S R	36	ON	ON	YES	N/A	2-EI-CB-03
3021C	1, 2	23	2-RC-P-1A	RC/REACTOR COOLANT PUMP A	12050-FM-093B3/22	CONTMT	262'	1	S R	1,14	ON	OFF	NO	N/A	N/A
3021D	1, 2	23	2-RC-P-1B	RC/REACTOR COOLANT PUMP B	12050-FM-093B3/22	CONTMT	262'	12.5	S R	1,14	ON	OFF	NO	N/A	N/A

CERTIFICATION:

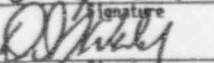
The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAWN W. JACOBS / ENGINEER

  
Signature

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

  
Signature

MARCH 11, 1993

LINE NO.	EQUIP TRAIL CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dep. No./Rev./Zone	Building	Fr. Elev.	LOC. LOCATION	OP. ST.	Normal	Desired	REQ'D	SYS. SYS.	REQ'D		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
3021E	1, 2	23	2-RC-P-1C	RC/REACTOR COOLANT PUMP C	12050-FH-09301/06/08	262'	7	OFF	NO	NO	N/A	N/A	N/A		
3022	1, 2	19	2-RC-TE-2317	RC/RVLLS IN-CORE THIMBLE	13075-FH-09301/06/08	222' 9"	17	ON	YES	YES	12050-RC-134/4	N/A	N/A		
3023	1, 2	19	2-RC-TE-2327	RC/RVLLS IN-CORE THIMBLE	13075-FH-09301/06/08	222' 9"	1	ON	YES	YES	12050-RC-137/5	N/A	N/A		
3024	1, 2	19	2-RC-TE-2316	RC/RVLLS THIMBLE TO BELLOW LINE	13075-FH-09301/06/08	241' 3"	17	ON	YES	YES	12050-RC-134/4	N/A	N/A		
3025	1, 2	19	2-RC-TE-2328	RC/RVLLS IN-CORE THIMBLE	13075-FH-09301/06/08	241' 3"	1	ON	YES	YES	12050-RC-137/5	N/A	N/A		
3026	1, 2	19	2-RL-TE-2329	RC/RVLLS IN-CORE THIMBLE	13075-FH-09301/06/08	261' 10"	16.5	ON	YES	YES	12050-RC-137/5	N/A	N/A		
3027	1, 2	19	2-RC-TE-2319	RC/RVLLS THIMBLE	13075-FH-09301/06/08	261' 9"	16	ON	YES	YES	12050-RC-134/4	N/A	N/A		
3028	1, 2	19	2-RC-TE-2315	RC/RVLLS TEMP	13075-FH-09301/06/08	261' 1"	12	ON	YES	YES	12050-RC-134/4	N/A	N/A		
3029	1, 2	20	2-RC-L15-2312	RC/SEAL TABLE ISOLATOR	13075-FH-09301/06/08	259' 6"	12/AM	ON	YES	YES	N/A	N/A	N/A		
3029	1, 2	20	2-RC-L15-2312	RC/SEAL TABLE ISOLATOR	13075-FH-09301/06/08	259' 6"	12/AM	ON	YES	YES	N/A	N/A	N/A		
3030	1, 2	20	2-RC-L17-2310	RC/PLENUM LEVEL	13075-FH-09301/06/08	259' 6"	12/AM	ON	YES	YES	N/A	N/A	N/A		
3031	1, 2	20	2-RC-L17-2312	RC/N-RANGE LEVEL	13075-FH-09301/06/08	259' 6"	12/AM	ON	YES	YES	N/A	N/A	N/A		
3032	1, 2	20	2-RC-L17-2311	RC/N-RANGE LEVEL	13075-FH-09301/06/08	259' 6"	12/AM	ON	YES	YES	N/A	N/A	N/A		
3033	1, 2	20	2-RC-L15-2310	RC/RV HEAD ISOLATOR	13075-FH-09301/06/08	259' 6"	12/AM	ON	YES	YES	N/A	N/A	N/A		
3034	1, 2	20	2-RC-L15-2311	RC/RV HEAD ISOLATOR	13075-FH-09301/06/08	259' 6"	12/AM	ON	YES	YES	N/A	N/A	N/A		
3035	1, 2	19	2-RC-TE-2316	RC/RVLLS TEMP	13075-FH-09301/06/08	258' 9"	CB 10	ON	YES	YES	12050-RC-134/4	N/A	N/A		
3036	1, 2	19	2-RC-TE-2314	RC/RVLLS TEMP	13075-FH-09301/06/08	278' 10"	11	ON	YES	YES	12050-RC-134/4	N/A	N/A		
3037	1, 2	19	2-RC-TE-2313	RC/RVLLS TEMP	13075-FH-09301/06/08	281' 6"	10.5	ON	YES	YES	12050-RC-134/4	N/A	N/A		
3038	1, 2	19	2-RC-TE-2323	RC/RVLLS TEMP	13075-FH-09302/06/08	281' 6"	10.5	ON	YES	YES	12050-RC-137/5	N/A	N/A		
3039	1, 2	19	2-RC-TE-2324	RC/RVLLS TEMP	13075-FH-09302/06/08	277' 3"	11	ON	YES	YES	12050-RC-137/5	N/A	N/A		
3040	1, 2	19	2-RC-TE-2325	RC/RVLLS TEMP	13075-FH-09302/06/08	261' 6"	11.6	ON	YES	YES	12050-RC-137/5	N/A	N/A		
3041	1, 2	19	2-RC-TE-2326	RC/RVLLS TEMP	13075-FH-09302/06/08	257' 11"	16	ON	YES	YES	12050-RC-137/5	N/A	N/A		
3042	1, 2	20	2-RC-L15-2320	RC/RV HEAD ISOLATOR	13075-FH-09302/06/08	259' 6"	11/K	ON	YES	YES	N/A	N/A	N/A		
3043	1, 2	20	2-RC-L15-2321	RC/RV HEAD ISOLATOR	13075-FH-09302/06/08	259' 6"	11/K	ON	YES	YES	N/A	N/A	N/A		

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAWN W. JACOBS / ENGINEER *DW Jacobs* MARCH 11, 1993

DAVID J. WERTER / ENGINEER *DJ Werten* MARCH 11, 1993

LINE NO.	TRAIL CLASS	EQUIP MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	Equipment Flr. Elev.	LOCATION	Req'd	OP. ST.	Normal	Desired	REQ'D INTERCONNECTIONS			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
3044	1, 2	20	2-RC-LT-2321	RC/R-RANGE LEVEL	13075-FM-09302/06/FT AUX	259' 6"	11/K		S R	OH	OH	YES	M/A	N/A	
3045	1, 2	20	2-RC-LT-2322	RC/R-RANGE LEVEL	13075-FM-09302/06/FT AUX	259' 6"	11/K		S R	OH	OH	YES	M/A	N/A	
3046	1, 2	20	2-RC-LT-2320	RC/PLENUM LEVEL	13075-FM-09302/06/FT3 AUX	259' 6"	11/K		S R	OH	OH	YES	M/A	N/A	
3047	1, 2	20	2-RC-LT-2322	RC/SEAL TABLE ISOLATOR	13075-FM-09302/06/AS AUX	259' 6"	11/K		S R	OH	OH	YES	M/A	N/A	
3048	1	08A	2-CH-MOV-2115D	CH/RWST TO CCP INLET ISOL	12050-FM-09582/75/R8 AUX	246'	10.6/JK		S R	CLOSED	OPEN	YES	M/A	N/A	
3049	2	08A	2-CH-MOV-2115B	CH/RWST TO CCP INLET ISOL	12050-FM-09582/75/R8 AUX	246'	10.6/JK		S R	CLOSED	OPEN	YES	11715-FP-13P	N/A	
3050	1, 2	21	2-QS-TR-1	QS/REFUELING WATER STORAGE TANK (RWST)	12050-FM-091A1/20/07 YARD	271'	--		S	N/A	N/A	NO	N/A	2-QS-L-200A/B/C/D	
3051	1, 2	18	2-QS-LT-200A	QS/RWST LEVEL	12050-FM-091A1/20/08 YARD	271'	--		S R	OH	OH	YES	12050-QS-003/8	N/A	
3052	1, 2	18	2-QS-LT-200B	QS/RWST LEVEL	12050-FM-091A1/20/08 YARD	271'	--		S R	OH	OH	YES	12050-QS-004/8	N/A	
3053	1, 2	18	2-QS-LT-200C	QS/RWST LEVEL	12050-FM-091A1/20/08 YARD	271'	--		S R	OH	OH	YES	12050-QS-016/8	N/A	
3054	1, 2	18	2-QS-LT-2000	QS/RWST LEVEL	12050-FM-091A1/20/08 YARD	271'	--		S R	OH	OH	YES	12050-QS-017/8	N/A	
3055	1, 2	20	2-QS-LI-200A	QS/RWST LEVEL	12050-FM-091A1/20/08 SB	276'	CR		S R	36	OH	YES	12050-QS-003/8	2-EI-CB-05	
3056	1, 2	20	2-QS-LI-200B	QS/RWST LEVEL	12050-FM-091A1/20/08 SB	276'	CR		S R	36	OH	YES	12050-QS-004/8	2-EI-CB-05	
3057	1, 2	20	2-QS-LI-200C	QS/RWST LEVEL	12050-FM-091A1/20/08 SB	276'	CR		S R	36	OH	YES	12050-QS-016/8	2-EI-CB-05	
3058	1, 2	20	2-QS-LI-2000	QS/RWST LEVEL	12050-FM-091A1/20/08 SB	276'	CR		S R	36	OH	YES	12050-QS-017/8	2-EI-CB-05	
3059	1	08A	2-QS-MOV-202A	QS/REFUELING WATER CHERN ADD TANK ISOL	12050-FM-091A1/20/05 YARD/TUNL	270'	--		R	A,21	CLOSED	CLOSED	NO	12050-FP-7A	N/A
3059	1	08A	2-QS-MOV-202A	QS/REFUELING WATER CHERN ADD TANK ISOL	12050-FM-091A1/20/05 YARD/TUNL	270'	2 FT N OF AFPH		S R	1,21	CLOSED	OPEN	YES	12050-FP-7A	2-EP-RC-20
3060	2	08A	2-QS-MOV-202B	QS/REFUELING WATER CHERN ADD TANK ISOL	12050-FM-091A1/20/06 YARD/TUNL	272'	--		R	A,21	CLOSED	CLOSED	NO	12050-FP-7A	N/A
3060	2	08A	2-QS-MOV-202B	QS/REFUELING WATER CHERN ADD TANK ISOL	12050-FM-091A1/20/06 YARD/TUNL	272'	--		S R	1,21	CLOSED	OPEN	YES	12050-FP-7A	2-EP-RC-22
3076	1	08A	2-QS-MOV-201A	QS/QUENCH SPRAY PUMP A OUTLET ISOL	12050-FM-091A2/19/05 QSPH	256'	--		R	A	CLOSED	CLOSED	NO	12050-FP-4C	N/A

CERTIFICATION:

The information identifying the equipment required to bring this plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAVE W. JACOBS / ENGINEER

*D Jacobs*  
 Signature

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

*D Werder*  
 Signature

MARCH 11, 1993

LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Desig. No./Rev./Zone	Building	ELEVATION	LOCATION	REMARKS	STATUS	OPER. ST.	POWER SUPPORTING	SYS. REQ'D	INTERCONNECTIONS	
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
3076	1	00A	2-QS-HW-201A	QS/QUIENCH SPRAY PUMP A	OUTLET ISOL	12050-FR-091A2/19/ES QSPH	256'	--	S R I	CLOSED	OPEN	YES	12050-FP-4C	2-EP-WC-19
3077	1	00A	2-QS-HW-201B	QS/QUIENCH SPRAY PUMP B	OUTLET ISOL	12050-FR-091A2/19/ES QSPH	238'	--	R A	CLOSED	CLOSED	NO	12050-FP-4C	N/A
3077	2	00A	2-QS-HW-201B	QS/QUIENCH SPRAY PUMP B	OUTLET ISOL	12050-FR-091A2/19/ES QSPH	263'	--	S R I	CLOSED	OPEN	YES	12050-FP-4C	2-EP-WC-21

CERTIFICATION:  
 The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAWN V. JACOBS / ENGINEER  
 Signature: *DV Jacobs*  
 MARCH 11, 1993

DAVID J. WERDER / ENGINEER  
 Signature: *DJ Werder*  
 MARCH 11, 1993



## Appendix E

## DECAY HEAT REMOVAL FUNCTION

The safe shutdown requirements for the decay heat removal function with an intact reactor plant are initially satisfied with the reactor coolant, main steam and auxiliary feedwater systems; heat is transferred by natural circulation of the reactor coolant from the core to the steam generator; heat is released from the secondary side of the steam generators by releasing steam to the atmosphere via the steam generator PORV. When reactor coolant temperature and pressure have been reduced sufficiently, decay heat is removed with the reactor coolant system and residual heat removal system.

The Reactor Coolant System (RCS) is the primary system used to achieve decay heat removal. The system is a Westinghouse three-loop design capable of natural circulation heat transfer. This provides a means of decay heat removal when the reactor coolant pumps are unavailable.

While in natural circulation, adequate heat transfer and coolant flow are dependent on an adequate inventory in both the primary and secondary systems. Confirmation of flow while in natural circulation is accomplished through the use of loop temperature indications. These indications are  $T_{cold}$  ( $T_c$ ) and  $T_{hot}$  ( $T_h$ ). Subcooling within the RCS is maintained by keeping system pressure greater than the saturation pressure which coincides with the hot leg temperature. Subcooling is verified by monitoring RCS pressure and loop hot leg temperature ( $T_h$ ).

The Main Steam (MS) System is used to remove heat from the reactor coolant system by releasing steam from the steam generators via the steam generator PORV. The system will be isolated by operation of the main steam trip valves. The MS system flow paths are shown on the flow diagrams. The MS system components required for safe shutdown are listed in the SSEL.

The MSIV is shown as the system boundary as it does not require a backup. The MSIV is highly reliable due to the logic of the pilot valves associated with the MSIV. As the pilot solenoids are powered by on-site electrical power sources and will be available, an MSIV shuts when any of the following conditions (excluding Appendix R isolation conditions) exists:

- Either the Train A or B button on the Safeguards Panel is depressed,
- Intermediate Hi-Hi containment pressure (17.8 psia on two of three channels), or
- Either Train A or B safety injection signal on high steam line flow coincident with Lo-Lo  $T_{ave}$  or Lo steam line pressure.

In addition, the MSIV is also expected to close due to the fact that the normal steam flow assists in closing the MSIV, especially if there is a loss of compressed air (used to keep the MSIV disc open).

The MS system is also designed to deliver steam to the turbine of the Turbine-Driven Auxiliary Feedwater (TDAFW) pump. Steam to this turbine is supplied via two parallel, air-operated valves upstream of the main steam trip valves. Either line is sufficient to supply steam for the AFW pump turbine, but two are provided for redundancy. The valves fail open on a loss of instrument air or power.

A PORV is provided on each main steam line. Each of these valves are capable of releasing sensible and decay heat to the atmosphere. The PORV can be used for plant cooldown by steam discharge to the atmosphere. These valves have a relief capacity of approximately 10 percent of the maximum steam flow of one steam generator. Only one PORV is needed to cool down the RCS.

Controls for the steam generator PORVs are provided in the Control Room and the auxiliary shutdown panel. The valves may also be operated locally and therefore are not dependent on an external power source. The three installed PORVs provide sufficient redundancy to accomplish the decay heat removal function.

The Auxiliary Feedwater (AFW) System is required during hot shutdown and reactor plant cooldown to support RCS decay heat removal. Secondary system (steam generator) inventory control is provided by the AFW system. The AFW system consists of one TDAFW pump and two Motor-Driven Auxiliary Feedwater (MDAFW) pumps. The pumps have the capability of providing flow required for decay heat removal against a steam generator pressure coinciding with the lowest steam generator safety valve set point. The AFW system flow paths are shown on the flow diagrams. The AFW system components required for safe shutdown are listed in the SSEL.

The TDAFW pump is driven by a single-stage non-condensing steam turbine. Upon opening the steam inlet valve, the turbine will be controlled by the mechanical speed governor. The AFW pump turbine has its own self-contained lube oil system utilizing a shaft-driven oil pump. The turbine oil coolers receive cooling water from the discharge of the pump. All three of the steam generators provide steam to the turbine for the AFW pump. The TDAFW pump is capable of operating down to the steam pressure which corresponds to the RCS temperature at which the Residual Heat Removal (RHR) System may be placed in service.

The MDAFW pumps are powered from the 4kV emergency buses. All AFW pumps receive their water supply from the 110,000 gallon Emergency Condensate Storage Tank (ECST). A backup source of water is the 300,000 gallon Condensate Storage Tank (CST); local administrative control will be used to ensure the necessary volume in this tank. Another backup source of water is from the service water system.

ECST level will be monitored via the mechanical level at the tank. Valves associated with pump suction and discharge can be locally operated.

The ECST, which is kept full at all times, has sufficient volume to maintain hot shutdown conditions for eight hours. Ample time is available for a local re-alignment of the normally closed valve that isolates the 300,000 gallon CST. If the CST is not available, and RCS conditions are not suitable for initiating Residual Heat Removal Systems operations then service water can be aligned to the suction of the AFW pumps.

The Residual Heat Removal (RHR) system removes residual and sensible heat from the core to reduce and maintain the temperature of the RCS following plant shutdown. The RHR system will be used for long-term decay heat removal.

The RHR system consists of two RHR heat exchangers, two RHR pumps and the associated piping, valving, and instrumentation necessary for operational control. The RHR system is located completely inside the containment. The RHR system flow path is shown on the flow diagrams. The components required for safe shutdown are shown in the SSEL.

During cold shutdown operations, reactor coolant flows from the RCS to the RHR pumps, through the tube side of the RHR heat exchangers and back to the RCS. The heat load is transferred by the RHR heat exchangers to the component cooling water which is circulating on the shell side of the heat exchangers. The inlet line to the RHR system is located in the hot leg of RCS loop 1, while the return line is connected to the cold leg of RCS loops 2 and 3.

Two motor-operated valves in series isolate the inlet line to the RHR system from the RCS. Each of these inlet line motor-operated valves has the capability of local manual operation and consequently satisfies GIP redundancy requirements for postulated single failures of active equipment. Each of the two redundant return lines are isolated by a motor-operated valve in series with a check valve.

The RHR system can be placed in operation when the pressure and temperature of the RCS are less than 450 psig and 350°F, respectively. If one of the pumps and/or one of the heat exchangers is inoperative, safe operation of the plant is not affected.

The flowpaths for the decay heat removal function are highlighted on the flow diagrams in Appendix N and safe shutdown equipment items in these flowpaths are listed on the SSEL provided in this Appendix. All items in the Decay Heat Removal SSEL for an intact plant have line numbers from 4001 to 4999. The decay heat removal function for a small break LOCA is addressed in Appendix H.

NORTH ANNA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
DECAY HEAT REMOVAL FUNCTION  
(Sorted by Line Number)

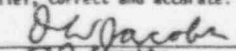
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Sort Criteria: Line Number  
Filter Criteria: (Line Number >= '4000') AND (Line Number < '5000')  
Program File Name & Version: SSEM v0.0

LINE NO.	TRASH CLASS	EQUIP MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr./Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. ST. Normal	Desired	POWER REQ'D	SUPPORTING SYS. DMG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	
(1)	(2)	(3)	(4)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	
4002	1	23	1-RC-E-1A	MS/STEAM GENERATOR A	11715-FM-001A/16/C5	CONTMT	291'	2	S	1,14	N/A	N/A	NO	N/A	N/A
4003	1	18	1-MS-PT-1474	MS/SG A STEAM PRESSURE	11715-FM-070B1/19/D7	QSPH	255'	3/GA	S	R	9	ON	ON	YES	11715-MS-144/6 RACK 1-800
4004	1	20	1-MS-PI-1474	MS/SG A STEAM PRESSURE	11715-FM-070B1/19/E7	SB	277'	CR	S	R	9, 36	ON	ON	YES	11715-MS-144/6 1-EI-CB-04
4005	2	18	1-MS-PT-1476	MS/SG A STEAM PRESSURE	11715-FM-070B1/19/C6	QSPH	256'	4/GS	S	R	9	ON	ON	YES	11715-MS-156/5 RACK 1-802
4006	2	20	1-MS-PI-1476	MS/SG A STEAM PRESSURE	11715-FM-070B1/19/C6	SB	277'	CR	S	R	9, 36	ON	ON	YES	11715-MS-156/5 1-EI-CB-04
4007	1	18	1-MS-PT-101A	MS/SG A STEAM PRESSURE	11715-FM-070B1/19/C6	QSPH	280'	4.5/GB	S	R	--	ON	ON	YES	11715-MS-012/7 N/A
4008	1	20	1-MS-PI-C-101A	MS/SG A STEAM PRESSURE	11715-FM-070B1/19/C6	SB	277'	CR	S	R	--	ON	ON	YES	N/A
4009	1	07	1-MS-SV-101A	MS/SG A SAFETY VALVE	11715-FM-070B1/19/E6	MSVH	306'	--	S	1,8	CLOSED	CLOSED	NO	N/A	N/A
4010	1	07	1-MS-SV-102A	MS/SG A SAFETY VALVE	11715-FM-070B1/19/E5	MSVH	306'	--	S	1,8	CLOSED	CLOSED	NO	N/A	N/A
4011	1	07	1-MS-SV-103A	MS/SG A SAFETY VALVE	11715-FM-070B1/19/E6	MSVH	306'	--	S	1,8	CLOSED	CLOSED	NO	N/A	N/A
4012	1	07	1-MS-SV-104A	MS/SG A SAFETY VALVE	11715-FM-070B1/19/E6	MSVH	306'	--	S	1,8	CLOSED	CLOSED	NO	N/A	N/A
4013	1	07	1-MS-SV-105A	MS/SG A SAFETY VALVE	11715-FM-070B1/19/E5	MSVH	306'	--	S	1,8	CLOSED	CLOSED	NO	N/A	N/A
4014	1	07	1-MS-PCV-101A	MS/SG A ATMOSPHERIC STEAM DUMP VALVE	11715-FM-070B1/19/E5	MSVH	306'	4.5/GA	S	R	25	CLOSED	OPEN	NO	11715-MS-012/7 INST AIR
4015	1	15	1-MS-PY-101A	MS/SG A STEAM DUMP VALVE E/P TRANSDUCER	11715-MS-012/7	SFGD	272'	4/GB	S	R	--	ON	ON	YES	N/A
4016	1, 2	R	1-MS-343	MS/MANUAL BYPASS VALVE	11715-FM-070B1/19/D5	MSVH	297'	5.6/HA	--	3	CLOSED	CLOSED	NO	N/A	N/A
4017	1, 2	0	1-MS-TV-101A	MS/SG A MSIV	11715-FM-070B1/19/C4	MSVH	285'	5.5/GB	S	--	OPEN	CLOSED	YES	11715-MS-110/B	1-MS-SOV-101A, 2, 3, 6, 7
4018	1, 2	088	1-MS-SOV-101A1	MS/SG A MSIV PILOT VALVE	11715-FM-070B1/19/E4	QSPH	280'	4.5/GB	S	R	--	AIR	VENT	YES	N/A
4019	1, 2	088	1-MS-SOV-101A2	MS/SG A MSIV PILOT VALVE	11715-FM-070B1/19/E4	QSPH	280'	4.5/GB	S	R	--	AIR	VENT	YES	N/A
4020	1, 2	088	1-MS-SOV-101A6	MS/SG A MSIV PILOT VALVE	11715-FM-070B1/19/F4	QSPH	290'	4.5/GB	S	R	--	AIR	VENT	YES	N/A
4021	1, 2	088	1-MS-SOV-101A7	MS/SG A MSIV PILOT VALVE	11715-FM-070B1/19/D3	QSPH	290'	4.5/GB	S	R	--	AIR	VENT	YES	N/A
4022	1, 2	088	1-MS-SOV-101A3	MS/SG A MSIV PILOT VALVE	11715-FM-070B1/19/F4	QSPH	260'	3/GA	S	R	--	AIR	VENT	YES	N/A
4028	2	23	1-RC-E-1B	MS/STEAM GENERATOR B	11715-FM-001A/16/D4	CONTMT	291'	14	S	1,14	N/A	N/A	NO	N/A	N/A

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DANN W. JACOBS / ENGINEER

  
Signature

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

  
Signature

MARCH 11, 1993

NORTH ANNA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
DECAY HEAT REMOVAL FUNCTION  
(Sorted by Line Number)

Data Base File Name/Date/Time: NA1\_SSEL.DBF / 03/11/93 / 09:33:18  
Sort Criteria: Line Number  
Filter Criteria: (Line Number >= '4000') AND (Line Number < '5000')  
Program File Name & Version: SSEL v0.0

LINE NO.	EQUIP TRASH CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Ra. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DMG. NO./REV.	SYS. & SUPPORTING COMPONENTS	REQ'D INTERCONNECTIONS
(1)	(2)	(3)	(4)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(16)
4029	1	18	1-MS-PT-1485	MS/SG B STEAM PRESSURE	11715-FM-07082/19/C7	QSPH	256'	3/GA	S R 9	ON	ON	YES	11715-MS-146/5	N/A	
4030	1	20	1-MS-P1-1485	MS/SG B STEAM PRESSURE	11715-FM-07082/19/B7	SB	277'	CR	S R 9, 36	ON	ON	YES	11715-MS-146/5	1-EI-CB-04	
4031	2	18	1-MS-T-1485	MS/SG B STEAM PRESSURE	11715-FM-07082/19/C6	QSPH	256'	4/GB	S R 9	ON	ON	YES	11715-MS-158/4	N/A	
4032	2	20	1-MS-P1-1486	MS/SG B STEAM PRESSURE	11715-FM-07082/19/B6	SB	277'	CR	S R 9, 36	ON	ON	YES	11715-MS-158/4	1-EI-CB-04	
4033	2	18	1-MS-F1-101B	MS/SG B STEAM PRESSURE	11715-FM-07082/19/C5	SFGD	256'	4.5/GB	S R --	ON	ON	YES	11715-MS-013/9	RACK 1-800	
4034	2	20	1-MS-P1C-101B	MS/SG B STEAM PRESSURE	11715-FM-07082/19/C5	SB	277'	CR	S R --	ON	ON	YES	N/A	N/A	
4035	2	07	1-MS-SV-101B	MS/SG B SAFETY VALVE	11715-FM-07082/19/D6	MSVH	--	--	S 1,8	CLOSED	CLOSED	NO	N/A	N/A	
4036	2	07	1-MS-SV-102B	MS/SG B SAFETY VALVE	11715-FM-07082/19/D5	MSVH	--	--	S 1,8	CLOSED	CLOSED	NO	N/A	N/A	
4037	2	07	1-MS-SV-103B	MS/SG B SAFETY VALVE	11715-FM-07082/19/D6	MSVH	--	--	S 1,8	CLOSED	CLOSED	NO	N/A	N/A	
4038	2	07	1-MS-SV-104B	MS/SG B SAFETY VALVE	11715-FM-07082/19/D6	MSVH	--	--	S 1,8	CLOSED	CLOSED	NO	N/A	N/A	
4039	2	07	1-MS-SV-105B	MS/SG B SAFETY VALVE	11715-FM-07082/19/D5	MSVH	--	--	S 1,8	CLOSED	CLOSED	NO	N/A	N/A	
4040	2	07	1-MS-PCV-101B	MS/SG B ATMOSPHERIC STEAM DUMP VALVE	11715-FM-07082/19/E6	MSVH	306'	4/GD	S R 25	CLOSED	OPEN	NO	11715-MS-013/9	INST AIR	
4041	2	18	1-MS-PY-101B	MS/SG B STEAM DUMP VALVE E/P TRANSDUCER	11715-MS-013/9	SFGD	272'	4/GB	S R --	ON	ON	YES	N/A	N/A	
4042	1, 2	R	1-MS-352	MS/MANUAL BYPASS VALVE	11715-FM-07082/19/D4	MSVH	--	--	-- 3	CLOSED	CLOSED	NO	N/A	N/A	
4043	1, 2	0	1-MS-TV-101B	MS/SG B MSIV	11715-FM-07082/19/C4	MSVH	285'	4.5/GB	S --	OPER	CLOSED	YES	11715-MS-111/9	1-MS-SOV-101B1,2,3,6,7	
4044	1, 2	08B	1-MS-SOV-101B1	MS/SG B MSIV PILOT VALVE	11715-FM-07082/19/E4	QSPH	280'	4.5/GB	S R --	AIR	VENT	YES	11715-MS-111/9	N/A	
4045	1, 2	08B	1-MS-SOV-101B2	MS/SG B MSIV PILOT VALVE	11715-FM-07082/19/E4	QSPH	280'	4.5/GB	S R --	AIR	VENT	YES	11715-MS-111/9	N/A	
4046	1, 2	08B	1-MS-SOV-101B6	MS/SG B MSIV PILOT VALVE	11715-FM-07082/19/E4	QSPH	280'	4.5/GB	S R --	AIR	VENT	YES	11715-MS-111/9	N/A	
4047	1, 2	08B	1-MS-SOV-101B7	MS/SG B MSIV PILOT VALVE	11715-FM-07082/19/F4	QSPH	280'	4.5/GB	S R --	AIR	VENT	YES	11715-MS-111/9	N/A	
4048	1, 2	06B	1-MS-SOV-101B3	MS/SG B MSIV PILOT VALVE	11715-FM-07082/19/F4	QSPH	260'	3/GB	S R --	AIR	VENT	YES	11715-MS-111/9	N/A	
4054	3	23	1-RC-E-1C	MS/STEAM GENERATOR C	11715-FM-001A/16/D5	CONTHT	291'	8	S 1,14	N/A	N/A	NO	N/A	N/A	
4055	2	18	1-MS-PT-1494	MS/SG C STEAM PRESSURE	11715-FM-07083/23/B7	QSPH	256'	3/GA	S R 9	ON	ON	YES	11715-MS-148/6	RACK 1-800	

CERTIFICATION:

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DAWN W. JACOBS / ENGINEER

*Dawn W. Jacobs*  
Signature

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

*David J. Werder*  
Signature

MARCH 11, 1993

NORTH ANNA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
DECAY HEAT REMOVAL FUNCTION  
(Sorted by Line Number)

Data Base File Name/Date/Time: NAI\_SSEL.DBF / 03/11/93 / 09:33:18  
Sort Criteria: Line Number  
Filter Criteria: (Line Number >= '4000') AND (Line Number < '5000')  
Program File Name & Version: SSEM v0.0

LINE NO.	TRAIN	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	EQUIPMENT		LOCATION	SORT	NOTES	OP. ST.		POWER REQ'D?	SUPPORTING SYS. ENG. NO./REV. & SUPPORTING COMPONENTS	REQ'D INTERCONNECTIONS
						Building	Fir. Elev.				Normal	Desired			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
4056	2	20	1-MS-PI-1494	MS/SG C STEAM PRESSURE	11715-FM-070B3/23/B7 SB		277'	CR	S R	9, 36	ON	ON	YES	11715-MS-148/6	1-EI-CN-04
4057	1	18	1-MS-PT-1496	MS/SG C STEAM PRESSURE	11715-FM-070B3/23/C6 QSPH		256'	4/GB	S R	9	ON	ON	YES	11715-MS-160/5	RACK 1-802
4058	1	20	1-MS-PI-1496	MS/SG C STEAM PRESSURE	11715-FM-070B3/23/B6 SB		277'	CR	S R	9, 36	ON	ON	YES	11715-MS-160/5	1-EI-CN-04
4059	3	18	1-MS-PT-101C	MS/SG C STEAM PRESSURE	11715-FM-070B3/23/B6 QSPH		256'	3/GB	S R	--	ON	ON	YES	11715-MS-014/8	RACK 1-801
4060	3	20	1-MS-PIC-101C	MS/SG C STEAM PRESSURE	11715-FM-070B3/23/B6 SB		277'	CR	S R	--	ON	ON	YES	11715-MS-014/8	N/A
4061	3	07	1-MS-SV-101C	MS/SG C SAFETY VALVE	11715-FM-070B3/23/D6 MSVH		306'	--	S	1,8	CLOSED	CLOSED	NO	N/A	N/A
4062	3	07	1-MS-SV-102C	MS/SG C SAFETY VALVE	11715-FM-070B3/23/D6 MSVH		306'	--	S	1,8	CLOSED	CLOSED	NO	N/A	N/A
4063	3	07	1-MS-SV-103C	MS/SG C SAFETY VALVE	11715-FM-070B3/23/D6 MSVH		306'	--	S	1,8	CLOSED	CLOSED	NO	N/A	N/A
4064	3	07	1-MS-SV-104C	MS/SG C SAFETY VALVE	11715-FM-070B3/23/D6 MSVH		306'	--	S	1,8	CLOSED	CLOSED	NO	N/A	N/A
4065	3	07	1-MS-SV-105C	MS/SG C SAFETY VALVE	11715-FM-070B3/23/D5 MSVH		306'	--	S	1,8	CLOSED	CLOSED	NO	N/A	N/A
4066	3	07	1-MS-PCV-101C	MS/SG C ATMOSPHERIC STEAM DUMP VALVE	11715-FM-070B3/23/ES MSVH		308'	4.5/Gb	S R	25	CLOSED	OPEN	NO	11715-MS-014/8	INST AIR
4067	3	18	1-MS-PY-101C	MS/SG C STEAM DUMP VALVE E/P TRANSDUCER	11715-MS-014/8	SFGD	280'	4/GA	S R	--	ON	ON	YES	N/A	N/A
4068	1, 2	R	1-MS-361	MS/MANUAL BYPASS ISOL	11715-FM-070B3/23/D4 MSVH		297'	4.9/GA	--	3	CLOSED	CLOSED	NO	N/A	N/A
4069	1, 2	0	1-MS-TV-101C	MS/SG C MSIV	11715-FM-070B3/23/C4 MSVH		285'	5/GB	S	--	OPEN	CLOSED	YES	11715-MS-112/9	1-MS-SOV-101C1,2,3,4,5,6,7
4070	1, 2	08B	1-MS-SOV-101C1	MS/SG C MSIV PILOT VALVE	11715-FM-070B3/23/D4 QSPH		280'	4.5/GB	S R	--	AIR	VENT	YES	11715-MS-112/9	N/A
4071	1, 2	08B	1-MS-SOV-101C2	MS/SG C MSIV PILOT VALVE	11715-FM-070B3/23/D4 QSPH		280'	4.5/GB	S R	--	AIR	VENT	YES	11715-MS-112/9	N/A
4072	1, 2	08B	1-MS-SOV-101C4	MS/SG C MSIV PILOT VALVE	11715-FM-070B3/23/D4 QSPH		280'	4.5/GB	S R	--	AIR	VENT	YES	11715-MS-112/9	N/A
4073	1, 2	08B	1-MS-SOV-101C5	MS/SG C MSIV PILOT VALVE	11715-FM-070B3/23/D4 QSPH		280'	4.5/GB	S R	--	AIR	VENT	YES	11715-MS-112/9	N/A
4074	1, 2	08B	1-MS-SOV-101C6	MS/SG C MSIV PILOT VALVE	11715-FM-070B3/23/D4 QSPH		280'	4.5/GB	S R	--	AIR	VENT	YES	11715-MS-112/9	N/A
4075	1, 2	08B	1-MS-SOV-101C7	MS/SG C MSIV PILOT VALVE	11715-FM-070B3/23/D4 QSPH		280'	4.5/GB	S R	--	AIR	VENT	YES	11715-MS-112/9	N/A
4076	1, 2	08B	1-MS-SOV-101C3	MS/SG C MSIV PILOT VALVE	11715-FM-070B3/23/E4 QSPH		260'	3/GB	S R	--	AIR	VENT	YES	11715-MS-112/9	RACK 1-801

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DAWN W. JACOBS / ENGINEER

*Dawn W. Jacobs*  
Signature

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

*David J. Werder*  
Signature

MARCH 11, 1993

NORTH ABRA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
DECAY HEAT REMOVAL FUNCTION  
(Sorted by Line Number)

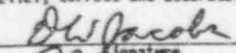
Data Base File Name/Date/Time: HAI\_SSEL.DBF / 03/11/93 / 09:33:18  
Sort Criteria: Line Number  
Filter Criteria: (Line Number >= '4000') AND (Line Number < '5000')  
Program File Name & Version: SSEL v0.0

LINE NO.	TRAIN	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Deg. No./Rev./Zone	EQUIPMENT		LOCATION		OP. ST.		POWER REQ'D	SUPPORTING SYS. ENG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS		
						Building	Fir. Elev.	Rm. or Row/Col.	Sort	Normal	Desired					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	
4083	1	07	1-MS-TV-111A	MS/TDAFW STEAM ADMISSION	11715-FM-070A3/26/E5	MSVH	274'	5.5	S	--	CLOSED	OPEN	NO	11715-MS-115/8	N/A	
4084	1	088	1-MS-SOV-111A	MS/TDAFW STEAM ADMISSION PILOT	11715-FM-070A3/26/E5	MSVH	274'	5.5	S	R	--	AIR	VENT	YES	11715-MS-115/8	N/A
4085	2	07	1-MS-TV-111B	MS/TDAFW STEAM ADMISSION	11715-FM-070A3/26/E4	MSVH	274'	5.5	S	--	CLOSED	OPEN	NO	11715-MS-116/10	N/A	
4086	2	088	1-MS-SOV-111B	MS/TDAFW STEAM ADMISSION PILOT	11715-FM-070A3/26/E4	MSVH	274'	5.5	S	R	--	AIR	VENT	YES	11715-MS-116/10	N/A
4099	1, 2	0	1-MS-TV-115	MS/TDAFW TRIP VALVE	11715-FM-070A3/26/C4	MSVH	--	--	S	--	OPEN	OPEN	NO	N/A	N/A	
4109	1	21	1-CN-TK-2	CN/CONDENSATE STORAGE TANK	11715-FM-073A/31/A6	YARD	302'	--	S	--	N/A	N/A	NO	11715-CN-002/5	N/A	
4101	1	18	1-CN-LT-104	CN/CONDENSATE STORAGE TANK LEVEL	11715-FM-073A/31/B6	YARD	302'	--	S	R	--	ON	ON	YES	11715-CN-002/4	N/A
4101A	1	20	1-CN-LI-104	CN/CONDENSATE STORAGE TANK LEVEL	11715-CN-002/4	SB	277'	CR	S	R	--	ON	ON	YES	N/A	N/A
4102	1	R	1-CN-149	CN/MAKEUP CONTROL ISOL	11715-FM-073A/31/D6	YARD	254'	4/B	--	15	OPEN	CLOSED	NO	N/A	N/A	
4105	1	R	1-CN-468	CN/SAMPLE COOLER ISOL	11715-FM-073A/31/B7	YARD	254'	3/X	--	15	OPEN	CLOSED	NO	N/A	N/A	
4104	1	R	1-CN-147	CN/MAKEUP CONTROL ISOL	11715-FM-073A/31/D7	YARD	254'	3/X	--	15	OPEN	CLOSED	NO	N/A	N/A	
4105	1	R	1-CN-202	CN/MAKEUP CONTROL	11715-FM-073A/31/C6	YARD	254'	3/B	--	15	OPEN	CLOSED	NO	N/A	N/A	
4106	1	R	1-CN-134	CN/CONDENSATE STORAGE TANKS 1 & 2 CROSS-TIE	11715-FM-073A/31/B6	YARD	270'	--	--	15	CLOSED	OPEN	NO	N/A	N/A	
4107	1	R	1-CN-135	CN/NRV ISOL	11715-FM-073A/31/B7	TB	279'	5/Z	--	15	OPEN	CLOSED	NO	N/A	N/A	
4108	1	R	1-CN-136	CN/NRV ISOL	11715-FM-073A/31/B7	TB	279'	6/Z	--	15	OPEN	CLOSED	NO	N/A	N/A	
4109	1	R	1-CN-137	CN/NRV ISOL	11715-FM-073A/31/A7	TB	279'	5/Z	--	15	OPEN	CLOSED	NO	N/A	N/A	
4110	1	R	1-CN-138	CN/NRV ISOL	11715-FM-073A/31/A7	TB	279'	6/Z	--	15	OPEN	CLOSED	NO	N/A	N/A	
4111	1	R	1-CN-141	CN/LEVEL CONTROL ISOL	11715-FM-073A/31/D7	YARD	254'	6.4/Z	--	15	OPEN	CLOSED	NO	N/A	N/A	
4112	1	R	1-CN-MHD121*	CN/ISOL VALVE	11715-FM-073A/31/B8	YARD	--	--	--	15	OPEN	CLOSED	NO	N/A	N/A	
4113	1	R	1-CP-390	CP/CP BACKWASH PUMP ISOL VALVE	11715-FM-073B/13/A6	YARD	254'	3/B	--	15	OPEN	CLOSED	NO	N/A	N/A	
4114	1	R	1-CP-312	CP/CP BACKWASH PUMP ISOL VALVE	11715-FM-073B/13/A6	YARD	254'	3/B	--	15	OPEN	CLOSED	NO	N/A	N/A	
4115	1	R	1-AS-45	AS/AS BOUNDARY	11715-FM-072B/13/C4	AUX	259'	7.7/H	--	15	OPEN	CLOSED	NO	N/A	N/A	

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DAWN W. JACOBS / ENGINEER

  
Signature

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

  
Signature

MARCH 11, 1993

LINE NO.	EQUIP TRASH CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	Equipment Fir. Elev.	LOCATION Rm. or Row/Col.	NOTES	Normal	Desired	REQ'D INTERCONNECTIONS				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
4116	1	R	1-AS-46	AS/AS BOUNDARY	11715-FH-0746/13/CA	AUX	259'	7.7/H	--	15	OPEN	CLOSED	NO	N/A	N/A
4117	1	R	1-FW-142	FW/CONDENSATE STORAGE TANK ISOL	11715-FH-0746/29/03	AFPH	222'	--	--	15	CLOSED	OPEN	NO	N/A	N/A
4118	1	21	1-CN-TK-1	CN/CONDENSATE STORAGE TANK	11715-FH-0746/29/03	YARD	271'	NOTE 3E	S	--	N/A	N/A	NO	N/A	N/A
4119	1	18	1-CN-LT-100A	CN/CONDENSATE STORAGE TANK LEVEL	11715-FH-0746/29/03	AFPH	274'	--	S R	--	N/A	N/A	YES	11715-CN-071/3	N/A
4120	1	18	1-CN-LT-100B	CN/CONDENSATE STORAGE TANK LEVEL	11715-FH-0746/29/03	AFPH	274'	--	S R	--	N/A	N/A	YES	11715-CN-001/10	N/A
4121	1	20	1-CN-LT-100B-1	CN/CONDENSATE STORAGE TANK LEVEL	11715-CN-001/10	SB	277'	CR	S R	36	ON	ON	YES	N/A	1-EI-CB-04
4122	2	20	1-FW-P1-156C	FW/MDAFWP SUCTION (LOCAL)	11715-FH-0746/29/05	AFPH	--	--	S	36	N/A	N/A	NO	N/A	1-FW-P-38
4123	2	18	1-FW-PT-103C	FW/MDAFWP SUCTION PRESSURE	11715-FH-0746/29/05	AFPH	272'	--	S R	--	ON	ON	YES	11715-FW-002/5	N/A
4124	2	20	1-FW-P1-103C	FW/MDAFWP SUCTION PRESSURE	11715-FH-0746/29/05	SB	277'	CR	S R	36	ON	ON	YES	11715-FW-002/5	1-EI-CB-04
4125	2	R	1-FW-180	FW/SW MANUAL ISOL TO MDAFWP	11715-FH-0746/29/05	AFPH	--	--	--	15	CLOSED	OPEN	NO	N/A	N/A
4126	2	R	1-FW-173	FW/SW MANUAL ISOL TO MDAFWP	11715-FH-0746/29/04	AFPH	--	--	--	18,15	OPEN	CLOSED	NO	N/A	N/A
4127	2	05	1-FW-P-38	FW/MOTOR-DRIVEN AUXILIARY FEEDWATER PUMP (MDAFWP)	11715-FH-0746/29/05	AFPH	--	--	S R	--	OFF	RUNNING	YES	N/A	N/A
4128	2	20	1-FW-P1-156B	FW/MDAFWP SUCTION (LOCAL)	11715-FH-0746/29/06	AFPH	--	--	S	36	N/A	N/A	NO	N/A	1-FW-P-3A
4129	2	18	1-FW-PT-103B	FW/MDAFWP SUCTION PRESSURE	11715-FH-0746/29/06	AFPH	272'	--	S R	--	ON	ON	YES	11715-FW-001/4	N/A
4130	2	20	1-FW-P1-103B	FW/MDAFWP SUCTION PRESSURE	11715-FH-0746/29/06	SB	277'	CR	S R	36	ON	ON	YES	N/A	1-EI-CB-04
4131	2	R	1-FW-162	FW/SW MANUAL ISOL TO MDAFWP	11715-FH-0746/29/06	AFPH	--	--	--	15	CLOSED	OPEN	NO	N/A	N/A
4132	2	R	1-FW-160	FW/SW MANUAL ISOL TO MDAFWP	11715-FH-0746/29/04	AFPH	--	--	--	15	OPEN	CLOSED	NO	N/A	N/A
4133	2	05	1-FW-P-3A	FW/MOTOR-DRIVEN AUXILIARY FEEDWATER PUMP (MDAFWP)	11715-FH-0746/29/06	AFPH	--	--	S R	--	OFF	RUNNING	YES	N/A	N/A
4134	1	20	1-FW-P1-156A	FW/TDAFWP SUCTION (LOCAL)	11715-FH-0746/29/07	AFPH	--	--	S	--	N/A	N/A	NO	N/A	N/A
4135	1	18	1-FW-PT-103A	FW/TDAFWP SUCTION PRESSURE	11715-FH-0746/29/07	AFPH	272'	--	S R	--	ON	ON	YES	11715-FW-003/3	N/A
4136	1	20	1-FW-P1-103A	FW/TDAFWP SUCTION PRESSURE	11715-FH-0746/29/07	SB	277'	CR	S R	36	ON	ON	YES	11715-FW-003/3	1-EI-CB-04
4137	1	R	1-FW-145	FW/SW MANUAL ISOL TO TDAFWP	11715-FH-0746/29/07	AFPH	--	--	--	15	CLOSED	OPEN	NO	N/A	N/A

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DARIN W. JACOBS / ENGINEER

*D. Jacobs*  
 Signature

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

*D. Werder*  
 Signature

MARCH 11, 1993



NORTH ANNA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
DECAY HEAT REMOVAL FUNCTION  
(Sorted by Line Number)

Data Base File Name/Date/Time: HA1\_SSEL.DBF / 03/11/93 / 09:33:18  
Sort Criteria: Line Number  
Filter Criteria: (Line Number >= 2000) AND (Line Number < 5000)  
Program File Name & Version: SSEN v0.0

LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	EQUIPMENT LOCATION	Re. or Row/Col.	OP. ST.	Normal	Desired	REQ'D INTERCONNECTIONS				
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
4138	1	1-FW-143	FW/SW MANUAL ISOL TO TDRFWP	11715-FW-074A3/29/D4 AFPH	--	--	15	OPEN	CLOSED	N/A	N/A	N/A	N/A	N/A
4139	1	1-FW-227	FW/SW MANUAL ISOL TO AFWP HEADER	11715-FW-074A3/29/AB AFPH	--	--	15	CLOSED	OPEN	N/A	N/A	N/A	N/A	N/A
4140	1	1-FW-P-2	FW/TURBINE-DRIVEN AUXILIARY FEEDWATER PUMP (TDRFWP)	11715-FW-074A3/29/BB AFPH	--	--	S	OFF	RUNNING	YES	N/A	N/A	N/A	N/A
4141	2	1-FW-POC-3B*	FW/MOAFWP OIL COOLER	11715-FW-074A3/29/D4 AFPH	--	--	S	36	N/A	N/A	N/A	N/A	N/A	1-FW-P-3B
4142	2	1-FW-POC-3A*	FW/MOAFWP OIL COOLER	11715-FW-074A3/29/D6 AFPH	--	--	S	36	N/A	N/A	N/A	N/A	N/A	1-FW-P-3A
4143	1	1-FW-POC-2*	FW/TDRFWP OIL COOLER	11715-FW-074A3/29/D7 AFPH	--	--	S	36	N/A	N/A	N/A	N/A	N/A	1-FW-P-2
4144	2	1-FW-PC-159A	FW/PRESSURE CONTROL	11715-FW-074A3/29/F8 AFPH	--	--	S	R	ON	ON	YES	N/A	N/A	N/A
4145	2	1-FW-PCV-159A	FW/AFWP TO SG B CONTROL VALVE	11715-FW-074A3/29/F8 AFPH	--	--	S	36	ON	ON	YES	N/A	N/A	N/A
4146	2	1-FW-PT-101A-1	FW/AFWP TO SG B PRESSURE	11715-FW-074A3/29/F8 S8	277'	CR	S	R	36	ON	ON	YES	11715-FW-016/5	1-EI-CB-04
4147	2	1-FW-PT-101A-2	FW/AFWP TO SG B PRESSURE	11715-FW-074A3/29/F8 S8	254'	SMGR RM	S	R	36	ON	ON	YES	N/A	N/A
4148	2	1-FW-PT-101A	FW/AFWP TO SG B PRESSURE	11715-FW-074A3/29/F8 AFPH	--	--	S	R	36	ON	ON	YES	N/A	N/A
4149	2	1-FW-PC-159B	FW/PRESSURE CONTROL	11715-FW-074A3/29/F8 AFPH	--	--	S	R	36	ON	ON	YES	N/A	N/A
4150	2	1-FW-PCV-159B	FW/AFWP TO SG C CONTROL VALVE	11715-FW-074A3/29/F8 AFPH	--	--	S	36	ON	ON	YES	N/A	N/A	N/A
4151	2	1-FW-PT-101B-1	FW/AFWP TO SG C PRESSURE	11715-FW-074A3/29/F8 S8	277'	CR	S	R	36	ON	ON	YES	11715-FW-017/5	1-EI-CB-04
4152	2	1-FW-PT-101B-2	FW/AFWP TO SG C PRESSURE	11715-FW-074A3/29/F8 S8	254'	SMGR RM	S	R	36	ON	ON	YES	N/A	N/A
4153	2	1-FW-PT-101B	FW/AFWP TO SG C PRESSURE	11715-FW-074A3/29/F8 AFPH	274'	--	S	R	36	ON	ON	YES	N/A	N/A
4154	1	1-FW-PT-101C-1	FW/AFWP TO SG A PRESSURE	11715-FW-074A3/29/F8 S8	277'	CR	S	R	36	ON	ON	YES	N/A	N/A
4155	1	1-FW-PT-101C-2	FW/AFWP TO SG A PRESSURE	11715-FW-074A3/29/F8 S8	254'	SMGR RM	S	R	36	ON	ON	YES	N/A	N/A
4156	1	1-FW-PT-101C	FW/AFWP TO SG A PRESSURE	11715-FW-074A3/29/F8 AFPH	277'	--	S	R	36	ON	ON	YES	N/A	N/A
4157	1	08A 1-FW-MOV-100D	FW/AFWP TO SG A CONTROL VALVE	11715-FW-074A3/29/D8 AFPH	270'	--	R	7	OPEN	OPEN	NO	N/A	N/A	N/A
4158	2	08A 1-FW-MOV-100B	FW/AFWP HEADER TO SG B	11715-FW-074A3/32/A6 AFPH	278'	--	R	7	OPEN	OPEN	NO	N/A	N/A	N/A
4159	1	1-FW-FT-100B	FW/AFWP TO SG B FLOW	11715-FW-074A3/32/CS AFPH	273'	--	S	R	36	ON	ON	YES	11715-FW-051/6	N/A

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAWN M. JACOBS / ENGINEER

MARCH 11, 1993

*Dawn M. Jacobs*  
Signature

DAVID J. WEBBER / ENGINEER

MARCH 11, 1993

*David J. Webber*  
Signature

NORTH ANNA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
DECAY HEAT REMOVAL FUNCTION  
(Sorted by Line Number)

Data Base File Name/Date/Time: NA1\_SSEL.DBF / 03/11/93 / 09:33:18  
Sort Criteria: Line Number  
Filter Criteria: (Line Number >= '4000') AND (Line Number < '5000')  
Program File Name & Version: SSEL v0.0

LINE NO.	TRAIN	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	EQUIPMENT		LOCATION		OP. ST.		POWER SUPPORTING SYS.		REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	
						Building	Ftr. Elev.	Rm. or Row/Col.	SORT	Notes	Normal	Desired	REQD?		DMG. NO./REV
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
4160	2	20	1-FW-FI-100B	FW/AFWP TO SG B FLOW	11715-FW-074A1/32/C6 SB		277'	CR		S R 36	ON	ON	YES	11715-FW-051/6	1-EI-CB-04
4161	2	07	1-FW-HCV-100C	FW/AFWP HEADER TO SG C	11715-FW-074A1/32/A7 AFPH		275'	--		-- --	OPEN	OPEN	NO	11715-FW-057/6	N/A
4163	2	18	1-FW-FT-100C	FW/AFWP TO SG C FLOW	11715-FW-074A1/32/B7 AFPH		273'	--		S R --	ON	ON	YES	11715-FW-052/7	N/A
4164	2	20	1-FW-FI-100C	FW/AFWP TO SG C FLOW	11715-FW-074A1/32/B7 SB		277'	CR		S R 36	ON	ON	YES	11715-FW-052/7	1-EI-CB-04
4165	2	08A	1-FW-MOV-100C	FW/AFWP HEADER TO SG C	11715-FW-074A1/32/A7 AFPH		276'	--		S R 7	CLOSED	OPEN	YES	N/A	N/A
4165A	2	R	1-FW-126	FW/AFWP TO SG C MANUAL ISOL VALVE	11715-FW-074A1/32/B6 AFPH		275'	--		-- 15	CLOSED	OPEN	NO	N/A	N/A
4166	2	07	1-FW-HCV-100B	FW/AFWP HEADER TO SG B	11715-FW-074A1/32/A6 AFPH		275'	--		S --	CLOSED	OPEN	NO	11715-FW-056/4	N/A
4168	2	R	1-FW-96	FW/AFWP TO SG B MANUAL ISOL VALVE	11715-FW-074A1/32/A6 AFPH		--	--		-- 15	CLOSED	OPEN	NO	N/A	N/A
4169	1	07	1-FW-HCV-100A	FW/AFWP HEADER TO SG A	11715-FW-074A1/32/A5 AFPH		275'	--		S --	CLOSED	OPEN	NO	11715-FW-055/4	N/A
4171	2	R	1-FW-62	FW/AFWP TO SG A MANUAL ISOL VALVE	11715-FW-074A1/32/A7 AFPH		--	--		-- 15	CLOSED	OPEN	NO	N/A	N/A
4172	2	08A	1-FW-MOV-100A	FW/AFWP HEADER TO SG A	11715-FW-074A1/32/A5 AFPH		278'	--		S R 7	CLOSED	OPEN	YES	N/A	N/A
4173	2	R	1-FW-64	FW/AFWP TO SG C MANUAL ISOL VALVE	11715-FW-074A1/32/A7 AFPH		--	--		-- 15	CLOSED	OPEN	NO	N/A	N/A
4174	1	18	1-FW-FT-100A	FW/AFWP TO SG A FLOW	11715-FW-074A1/32/D6 AFPH		273'	--		S R --	ON	ON	YES	11715-FW-050/6	N/A
4175	1	20	1-FW-FI-100A	FW/AFWP TO SG A FLOW	11715-FW-074A1/32/D6 SB		277'	CR		S R 36	ON	ON	YES	11715-FW-050/6	1-EI-CB-04
4176	1, 2	20	1-FW-LR-1477	FW/SG 1A, B, C WIDE RANGE LVL	11715-FW-074A1/32/E8 SB		277'	CR		S R --	ON	ON	YES	N/A	1-EI-CB-04
4178	1	18	1-FW-LT-1477	FW/SG A LEVEL	11715-FW-074A1/32/F8 CONTHT		247' A	1.5		S R --	ON	ON	YES	11715-FW-091/7; 11715-FX-001B	RACK 1-112
4182	1	18	1-FW-LT-1474	FW/SG A LEVEL	11715-FW-074A1/32/F7 CONTHT		263'	2		S R --	ON	ON	YES	11715-FW-094/9; 11715-FX-001B	N/A
4183	1	20	1-FW-LI-1474	FW/SG A LEVEL	11715-FW-074A1/32/E7 SB		277'	CR		S R 36	ON	ON	YES	11715-FW-094/9	1-EI-CB-04
4184	1	18	1-FW-LT-1475	FW/SG A LEVEL	11715-FW-074A1/32/F6 CONTHT		263' A	18.5		S R --	ON	ON	YES	11715-FW-100/9; 11715-FX-001A	N/A
4185	1	20	1-FW-LI-1475	FW/SG A LEVEL	11715-FW-074A1/32/E6 SB		277'	CR		S R 36	ON	ON	YES	11715-FW-100/9	1-EI-CB-04
4186	1	18	1-FW-LT-1476	FW/SG A LEVEL	11715-FW-074A1/32/F6 CONTHT		263'	1		S R --	ON	ON	YES	11715-FW-106/8; 11715-FX-001B	N/A

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAWN W. JACOBS / ENGINEER

*D. Jacobs*  
Signature

MARCH 11, 1993

DAVID J. MERDER / ENGINEER

*D. Merder*  
Signature

MARCH 11, 1993

NORTH ALMA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
DELAY HEAT REMOVAL FUNCTION  
(Sorted by Line Number)

Data Base File Name/Date/Time: NAL\_SSEL.DBF / 03/11/93 / 09:33:18  
Sort Criteria: Line Number  
Filter Criteria: (Line Number > 4000) AND (Line Number < 5000)  
Program File Name & Version: SSEN v0.0

LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	Equipment Location	Room or Row/Col.	Sort Notes	Normal	Desired	REQ'D	DMG. NO./REV.	SUPPORTING COMPONENTS		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
4187	1	20	1-FW-LI-1476	FW/SG A LEVEL	11715-FM-074A1/32/E6 SB	277'	CR	S R 36	ON	ON	YES	11715-FM-106/B	1-EI-CB-04		
4190	2	18	1-FW-LI-1487	FW/SG B LEVEL	11715-FM-074A1/32/D8 CONTINT	241' A	13	S R --	ON	ON	YES	11715-FM-092/7 VMS 26328 11715-FK-001A	RP2K 1-107		
4194	2	18	1-FW-LI-1484	FW/SG B LEVEL	11715-FM-074A1/32/D7 CONTINT	263' A	14	S R --	ON	ON	YES	11715-FM-096/9; N/A 11715-FK-001A			
4195	2	20	1-FW-LI-1484	FW/SG B LEVEL	11715-FM-074A1/32/D7 SB	277'	CR	S R 36	ON	ON	YES	11715-FM-096/9	1-EI-CB-04		
4196	2	18	1-FW-LI-1485	FW/SG B LEVEL	11715-FM-074A1/32/D6 CONTINT	263' A	13.2	S R --	ON	ON	YES	11715-FM-102/9; N/A 11715-FK-001A			
4197	2	20	1-FW-LI-1485	FW/SG B LEVEL	11715-FM-074A1/32/D6 SB	277'	CR	S R 36	ON	ON	YES	11715-FM-102/9	1-EI-CB-04		
4198	2	18	1-FW-LI-1486	FW/SG B LEVEL	11715-FM-074A1/32/D6 CONTINT	263'	14	S R --	ON	ON	YES	11715-FM-108/9; N/A 11715-FK-001A			
4199	2	20	1-FW-LI-1486	FW/SG B LEVEL	11715-FM-074A1/32/D6 SB	277'	CR	S R 36	ON	ON	YES	11715-FM-108/9	1-EI-CB-04		
4200	3	18	1-FW-LI-1497	FW/SG C LEVEL	11715-FM-074A1/32/C8 CONTINT	241' A	8	S R --	ON	ON	YES	11715-FM-093/8; N/A 11715-FK-001A			
4204	3	18	1-FW-LI-1494	FW/SG C LEVEL	11715-FM-074A1/32/C7 CONTINT	259'	8	S R --	ON	ON	YES	11715-FM-098/9; N/A 11715-FK-001A			
4205	3	20	1-FW-LI-1494	FW/SG C LEVEL	11715-FM-074A1/32/C7 SB	277'	CR	S R 36	ON	ON	YES	11715-FM-098/9	1-EI-CB-04		
4206	3	18	1-FW-LI-1495	FW/SG C LEVEL	11715-FM-074A1/32/C7 CONTINT	260'	8.3	S R --	ON	ON	YES	11715-FM-104/9; N/A 11715-FK-001A			
4207	3	20	1-FW-LI-1495	FW/SG C LEVEL	11715-FM-074A1/32/C7 SB	277'	CR	S R 36	ON	ON	YES	11715-FM-104/9	1-EI-CB-04		
4208	3	18	1-FW-LI-1496	FW/SG C LEVEL	11715-FM-074A1/32/C6 CONTINT	260' A	8.6	S R --	ON	ON	YES	11715-FM-110/8; N/A 11715-FK-001A			
4209	3	20	1-FW-LI-1496	FW/SG C LEVEL	11715-FM-074A1/32/C6 SB	277'	CR	S R 36	ON	ON	YES	11715-FM-110/8	1-EI-CB-04		
4210	1, 2	21	1-FW-E-1A	FW/FEEDWATER HEATER A	11715-FM-074A2/30/F4 TB	254'	B/2	S 23	N/A	N/A	NO	N/A	N/A		
4211	1, 2	21	1-FW-E-1B	FW/FEEDWATER HEATER B	11715-FM-074A2/30/F6 TB	254'	B/3	S 23	N/A	N/A	NO	N/A	N/A		
4243	1, 2	18	1-RN-PT-1403	RH/DR PUMP INLET PRESSURE	11715-FM-094A1/14/B5 CONTINT	216' 11"	4.2	S R --	ON	ON	YES	VMS26381,25950 N/A 11715-FK-001B			

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DANN W. JACOBS / ENGINEER

MARCH 11, 1993

*D. Jacobs*  
Signature

DAVID J. WEDER / ENGINEER

MARCH 11, 1993

*D. Weder*  
Signature

NORTH ANNA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
DECAY HEAT REMOVAL FUNCTION  
(Sorted by Line Number)

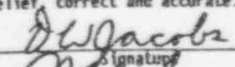
Data Base File Name/Date/Time: NA1\_SSEL.DBF / 03/11/93 / 09:33:18  
Sort Criteria: Line Number  
Filter Criteria: (Line Number >= '4000') AND (Line Number < '5000')  
Program File Name & Version: SSEL v0.0

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	EQUIPMENT		LOCATION		SORT NOTES		OP. ST.		POWER SUPPLYING SYS. REQ'D	SUPPORTING SYS. ENG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS
					Building	Fir. Elev.	Rm. or Row/Col.	(10)	(11)	Normal	Desired				
(1)	(2)	(3)	(4)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	
4244	1, 2	08A	1-RH-MDV-1700	RH/RHR PUMP SUCTION ISOL	11715-FH-094A1/14/A5	CONTMT	241'	2	S R 2	CLOSED	OPEN	YES	VIMS 27905 11715-FP-013A	1-RC-PT-1402	
4245	1, 2	08A	1-RH-MDV-1701	RH/RHR PUMP SUCTION ISOL	11715-FH-094A1/14/A4	CONTMT	236'	4	S R 2	CLOSED	OPEN	YES	11715-FP-013A	1-RC-PT-1403	
4246	1	06	1-RH-P-1A	RH/RHR PUMP A	11715-FH-094A1/14/D7	CONTMT	236'	5	S R --	OFF	RUNNING	YES	11715-FH-001D	N/A	
4247	1	21	1-RH-E-2A	RH/RHR PUMP A SEAL COOLER	11715-FH-094A1/14/D7	CONTMT	233'	5	S --	N/A	N/A	NO	N/A	N/A	
4249	2	06	1-RH-P-1B	RH/RHR PUMP B	11715-FH-094A1/14/D4	CONTMT	236'	5	S R --	OFF	RUNNING	YES	11715-FH-001D	N/A	
4250	2	21	1-RH-E-2B	RH/RHR PUMP B SEAL COOLER	11715-FH-094A1/14/D4	CONTMT	233'	5	S --	N/A	N/A	NO	N/A	N/A	
4252	1, 2	18	1-RH-PIC-1602	RH/RHR PUMPS DISCHARGE PRESSURE	11715-FH-094A1/14/F7	CONTMT	234'	5	S R --	ON	ON	YES	11715-RH-001/2 VIMS 27369 11715-FP-013A 11715-FH-9	N/A	
4253	1	21	1-RH-E-1A	RH/RHR HX A	11715-FH-094A2/15/EB	CONTMT	236'	4.5	S --	N/A	N/A	NO	11715-FX-001E	N/A	
4254	1, 2	19	1-RH-TE-1604	RH/RHR HX INLET TEMPERATURE	11715-FH-094A2/15/C8	CONTMT	234'	5	S R --	ON	ON	YES	11715-RH-002/4 VIMS 27370 11715-RH-002	N/A	
4254A	1, 2	20	1-RH-TR-1604	RH/RHR HX INLET TEMPERATURE	11715-RH-002/4	SB	277'	CR	S R --	ON	ON	YES	N/A	N/A	
4255	2	21	1-RH-E-1B	RH/RHR HX B	11715-FH-094A2/15/E6	CONTMT	236'	3.5	S --	N/A	N/A	NO	11715-FX-001E	N/A	
4256	1, 2	R	1-RH-31	RH/RHR LETDOWN ISOL	11715-FH-094A2/15/D5	CONTMT	216'	7	-- 3	OPEN	OPEN	NO	N/A	N/A	
4257	1, 2	07	1-RH-HCV-1758	RH/RHR HX OUTLET	11715-FH-094A2/15/C5	CONTMT	228'	5	S R --	OPEN	OP/CL	YES	11715-RH-005/4 VIMS 29912 11715-FX-001A	N/A	
4258	1, 2	18	1-RH-E/P-HCV-1758	RH/RHR HX OUTLET E/P	11715-RH-005/4	CONTMT	218'	5.5	S R --	ON	ON	YES	11715-FX-001A	RACK 1-100	
4259	1, 2	07	1-RH-FCV-1605	RH/RHR HX BYPASS	11715-FH-094A2/15/C7	CONTMT	234'	5	S --	CLOSED	CLOSED	NO	11715-RH-004/6 11715-FX-001E	N/A	
4260	1, 2	18	1-RH-FT-1605	RH/RHR HX OUTLET FLOW	11715-FH-094A2/15/C4	CONTMT	217'	5.5	S R --	ON	ON	YES	11715-RH-004/6 11715-FX-01A/14	RACK 1-100	
4260A	1, 2	20	1-RH-FI-1605	RH/RHR HX OUTLET FLOW	11715-RH-004/6	SB	277'	CR	S R --	ON	ON	YES	N/A	N/A	
4260B	1, 2	R	1-RH-36	RH/RHR TO RWST ISOL	11715-FH-094A2/15/C3	CONTMT	216'	7	-- 15	CLOSED	OPEN	NO	N/A	N/A	

CERTIFICATION:

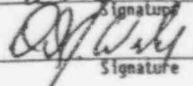
The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAWN W. JACOBS / ENGINEER

  
Signature

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

  
Signature

MARCH 11, 1993

NORTH ANNA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
DECAY HEAT REMOVAL FUNCTION  
(Sorted by Line Number)

Data Base File Name/Date/Time: HAI\_SSEL.DBF / 03/11/93 / 09:33:18  
Sort Criteria: Line Number  
Filter Criteria: (Line Number >= '4000') AND (Line Number < '5000')  
Program File Name & Version: SSEL v0.0

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D	SUPPORTING SYS. DMG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
4260C	1, 2 R	1-RH-37	RH/RHR TO RWST ISOL	11715-FH-094A2/15/D3	AUX	255'	3/LS	--	15	CLOSED	OPEN	NO	N/A	N/A	
4261	1, 2 19	1-RH-TE-1606	RH/RHR HX OUTLET TEMPERATURE	11715-FH-094A2/15/C4	CONTMT	232'	7	S R	--	ON	ON	YES	11715-RH-003/4 VIMS30284-30287	N/A	
4262	1, 2 08B	1-SS-TV-107A	SS/RHR HX OUTLET TO SAMPLING SYSTEM	11715-FH-089D1/16/F8	CONTMT	231'	7	S R	--	CLOSED	OPEN	YES	11715-SS-013/3 11715-FX-001D VIMS30448-30450	N/A	
4263	1, 2 08B	1-SS-TV-107B	SS/RHR HX OUTLET TO SAMPLING SYSTEM	11715-FH-089D1/16/F8	CONTMT	253'	4	S R	--	CLOSED	OPEN	YES	11715-SS-014/3 VIMS27348,27370	N/A	
4264	1, 2 08B	1-SS-TV-103A	SS/SAMPLING SYSTEM ISOL	11715-FH-089D1/16/F7	CONTMT	226'	7.5	S R	A,40	CLOSED	OP/CL	YES	11715-SS-013/3; 11715-SS-00B	N/A	
4264	1	08B	1-SS-TV-103A	SS/SAMPLING SYSTEM ISOL	11715-FH-089D1/16/F7	CONTMT	226'	R	1,40	CLOSED	CLOSED	NO	11715-SS-013/3; 11715-SS-00B	N/A	
4265*	1, 2 08B	1-SS-TV-103B	SS/SAMPLING SYSTEM ISOL	11715-FH-089D1/16/F5	AUX			S R	A,40	CLOSED	OP/CL	YES	N/A	N/A	
4265	2 08B	1-SS-TV-103B	SS/SAMPLING SYSTEM ISOL	11715-FH-089D1/16/F5	AUX			R	1,40	CLOSED	CLOSED	NO	N/A	N/A	
4266	1, 2 07	1-HRS-TV-1628	SS/SAMPLING SYSTEM ISOL	11715-FH-108A1/03/E3	AUX	259'	--	--	--	CLOSED	CLOSED	NO	N/A	N/A	
4267	1, 2 08B	1-HRS-SOV-1628	SS/SAMPLING SYSTEM ISOL	11715-FH-108A1/03/E5	AUX	259'	--	R	--	VENT	VENT	NO	N/A	N/A	
4268	1, 2 07	1-HRS-TV-1627	HRS/SAMPLING SYSTEM ISOL	11715-FH-089D1/16/F4	AUX	259'		S	24	CLOSED	OPEN	NO	N/A	1-HRS-SOV-1627	
4269	1, 2 08B	1-HRS-SOV-1627	HRS/SAMPLING SYSTEM ISOL PILOT	11715-FH-089D1/16/F4	AUX	259'		S R	24	VENT	AIR	YES	N/A	INST AIR	
4270	1, 2 21	1-SS-E-9	SS/RHR SAMPLE COOLER	11715-FH-089D1/16/E3	AUX	274'	9/K	S	--	N/A	N/A	NO	N/A	COMPONENT COOLING WATER	
4271	1, 2 08A	1-RH-MOV-1720A	RH/RHR RETURN ISOL LOOP 2	11715-FH-094A2/15/C3	CONTMT	238'	12	S R	--	CLOSED	OPEN	YES	11715-FP-032A	N/A	
4272	1, 2 08A	1-RH-MOV-1720B	RH/RHR RETURN ISOL LOOP 3	11715-FH-094A2/15/B3	CONTMT	226'	7.5	S R	--	CLOSED	OPEN	YES	VIMS 30454 11715-FP-013A OR 11715-FP-032A	N/A	
4273	1, 2 07	1-SI-HCV-1850D	SI/ACCUM TEST ISOL	11715-FH-096B2/16/B5	CONTMT	216'	13	--	22	CLOSED	CLOSED	NO	11715-SI-024/2; 11715-FX-001D	1-SI-SOV-1850D	
4274	1, 2 08B	1-SI-SOV-1850D	SI/ACCUM TEST ISOL PILOT	11715-SI-024/2	CONTMT	221'	13	R	22,36	VENT	VENT	NO	11715-FX-001D	1-SI-HCV-1850D	

CERTIFICATION:

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DANN W. JACOBS / ENGINEER

*D. W. Jacobs*  
Signature

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

*D. J. Werder*  
Signature

MARCH 11, 1993

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 DECAY HEAT REMOVAL FUNCTION  
 (Sorted by Line Number)

Data Base File Name/Date/Time: NA1\_SSEL.DBF / 03/11/93 / 09:33:18  
 Sort Criteria: Line Number  
 Filter Criteria: (Line Number >= '4000') AND (Line Number < '5000')  
 Program File Name & Version: SSEM v0.0

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	-----<----- Holding	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	----->-----	SORT	NOTES	<-- OP. ST. --> Normal Desired	POWER REQ'D	SUPPORTING SYS. ENG. NO./REV.	SYS. & SUPPORTING COMPONENTS	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
4275	1, 2	08A	1-SI-MOV-1865B	SI/ACCUM OUTLET ISOL	11715-FM-096B2/16/C6	CONTMT	221'	13	S R	2,22	OPEN	CLOSED	YES	VIMS30711,30597 11715-FP-012A	N/A
4276	1, 2	07	1-SI-HCV-1850F	SI/ACCUM TEST ISOL	11715-FM-096B3/13/B5	CONTMT	221'	7.5	--	22	CLOSED	CLOSED	NO	11715-SI-026/3; 11715-FK-001D	1-SI-SOV-1850F
4277	1, 2	08B	1-SI-SOV-1850F	SI/ACCUM TEST ISOL PILOT	11715-SI-026/3	CONTMT	221'	7.5	R	22	VENT	VENT	NO	11715-FK-001D;1 1715-FK-001D	N/A
4278	1, 2	08A	1-SI-MOV-1865C	SI/ACCUM OUTLET ISOL	11715-FM-096B3/13/C6	CONTMT	222'	8	S R	2,22	OPEN	CLOSED	YES	VIMS30380,30294 11715-FP-012A	2J12N
4279	1, 2	23	1-RC-MOV-1590	RC/LOOP 1 HOT LEG ISOL	11715-FM-093A1/19/E4	CONTMT	256' C	--	--	1,37, 14	OPEN	OPEN	NO	N/A	N/A
4280	1, 2	19	1-RC-TE-1413	RC/LOOP 1 HOT LEG TEMP (T-HOT)	11715-FM-093A1/19/E6	CONTMT	255' CA	2	S R	--	ON	ON	YES	11715-RC-124/17	N/A
4280A	1, 2	19	1-RC-TR-1410	RC/LP1, CH1, HOT/COLD LEG TMP	11715-RC-121,124	SB	277'	CR	S R	--	ON	ON	YES	11715-FE-9EX	1-EP-MC-20
4281	1, 2	19	1-RC-TE-1410	RC/LOOP 1 COLD LEG TEMP (T-COLD)	11715-FM-093A1/19/C8	CONTMT	256' CA	18.7	S R	--	ON	ON	YES	11715-RC-121/16	N/A
4282	1, 2	23	1-RC-MOV-1591	RC/LOOP 1 COLD LEG ISOL	11715-FM-093A1/19/C8	CONTMT	256' C	--	--	1,37, 14	OPEN	OPEN	NO	N/A	N/A
4283	1, 2	23	1-RC-MOV-1592	RC/LOOP 2 HOT LEG ISOL	11715-FM-093A2/19/E4	CONTMT	256' C	--	--	1,37, 14	OPEN	OPEN	NO	N/A	N/A
4284	1, 2	19	1-RC-TE-1423	RC/LOOP 2 HOT LEG TEMP (T-HOT)	11715-FM-093A2/19/E6	CONTMT	255'	14	S R	--	ON	ON	YES	11715-RC-125/14	N/A
4284A	1, 2	19	1-RC-TR-1413	RC/LOOP 2 HOT LEG TEMP	11715-RC-125/14	SB	277'	CR	S R	--	ON	ON	YES	11715-FE-9Y	1-EP-MC-20
4285	1, 2	19	1-RC-TE-1420	RC/LOOP 2 COLD LEG TEMP (T-COLD)	11715-FM-093A2/19/C8	CONTMT	255'	13	S R	--	ON	ON	YES	11715-RC-122/15	N/A
4285A	1, 2	19	1-RC-TR-1420	RC/LOOP 2 WIDE RANGE HOT/COLD LEG TEMP	11715-RC-122/15	SB	277'	CR	S R	--	ON	ON	YES	11715-FE-9EY	1-EP-MC-20
4286	1, 2	23	1-RC-MOV-1593	RC/LOOP 2 COLD LEG ISOL	11715-FM-093A2/19/B5	CONTMT	256' C	--	--	1,37, 14	OPEN	OPEN	NO	N/A	N/A
4287	1, 2	23	1-RC-MOV-1594	RC/LOOP 3 HOT LEG ISOL	11715-FM-093A3/22/E6	CONTMT	256' C	--	--	1,37, 14	OPEN	OPEN	NO	N/A	N/A
4288	1, 2	19	1-RC-TE-1433	RC/LOOP 3 HOT LEG TEMP (T-HOT)	11715-FM-093A3/22/E5	CONTMT	257'	8	S R	--	ON	ON	YES	11715-RC-126/18	N/A
4288A	1, 2	19	1-RC-TR-1433	RC/LOOP 3 HOT LEG TEMP	11715-RC-126/18	SB	277'	CR	S R	--	ON	ON	YES	11715-FE-9EX	1-EP-MC-20

CERTIFICATION:

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DAWN W. JACOBS / ENGINEER

*Dawn W. Jacobs*  
 Signature

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

*David J. Werder*  
 Signature

MARCH 11, 1993

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 DECAY HEAT REMOVAL FUNCTION  
 (Sorted by Line Number)

Data Base File Name/Date/Time: NAI\_SSEL.DBF / 03/11/93 / 09:33:18  
 Sort Criteria: Line Number  
 Filter Criteria: (Line Number >= '4000') AND (Line Number < '5000')  
 Program File Name & Version: SSEL v0.0

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	EQUIPMENT LOCATION		SORT NOTES	OP. ST.		POWER REQ'D?	SUPPORTING SYS. EMG. NO./REV.	SYS. & SUPPORTING COMPONENTS			
					Building	Fir. Elev.		Re. or Row/Col.	Normal				Desired		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
4289	1, 2 19	1-RC-TE-1430	RC/LOOP 3 COLD LEG TEMP (T-COLD)	11715-FM-093A3/22/D2	CONTMT	257'	7		S R --	ON	ON	YES	11715-RC-123/14	N/A	
4289A	1, 2 19	1-RC-TR-1430	RC/LOOP 3 WIDE RANGE HOT/COLD LEG TEMP	11715-RC-123/14		SB	277'	CR	S R --	ON	ON	YES	11715-FE-9EY	1-EP-PC-29	
4290	1, 2 23	1-RC-MOV-1595	RC/LOOP 3 COLD LEG ISOL	11715-FM-093A3/22/C6	CONTMT	256' C	--		--	1,37, 14	OPEN	OPEN	NO	N/A	N/A

CERTIFICATION:

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DANN W. JACOBS / ENGINEER

*D.W. Jacobs*  
 \_\_\_\_\_  
 Signature

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

*D.J. Werder*  
 \_\_\_\_\_  
 Signature

MARCH 11, 1993

NORTH ANNA UNIT 2  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
DECAY HEAT REMOVAL FUNCTION  
(Sorted by Line Number)

Data Base File Name/Date/Time: MA2\_SSEL.DBF / 03/11/93 / 09:30:38  
Sort Criteria: Line Number  
Filter Criteria: (Line Number >= '4000') AND (Line Number < '5000')  
Program File Name & Version: SSEL.V0.0

LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	Equipment Location	Sort Notes	Normal	Desired	Req'd	Interconnections				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
4002	1	23	2-RC-E-1A	MS/STEAM GENERATOR A	12050-FN-001A/12/F6	CONMIT	291'	2	S	1,14	N/A	N/A	NO	N/A	N/A
4003	1	18	2-MS-P1-2474	MS/SG A STEAM PRESSURE	12050-FN-07081/18/07	QSPH	256'	6/GB	S	9	ON	ON	YES	12050-MS-158/4	RACK 2-802
4004	1	20	2-MS-P1-2474	MS/SG A STEAM PRESSURE	12050-FN-07081/18/07	SB	276'	8/C	S	9,36	ON	ON	YES	12050-MS-158/4	2-EI-CB-04
4005	2	18	2-MS-P1-2476	MS/SG A STEAM PRESSURE	12050-FN-07081/18/06	QSPH	256'	6/GB	S	9	ON	ON	YES	12050-MS-162/5	RACK 2-801
4006	2	20	2-MS-P1-2476	MS/SG A STEAM PRESSURE	12050-FN-07081/18/06	SB	276'	8/C	S	9,36	ON	ON	YES	12050-MS-162/5	2-EI-CB-04
4007	1	18	2-MS-PT-201A	MS/SG A STEAM PRESSURE	12050-FN-07081/18/06	QSPH	272'	14/GA	S	--	ON	ON	YES	12050-MS-053/7	N/A
4008	1	20	2-MS-PT-201A	MS/SG A STEAM PRESSURE	12050-FN-07081/18/06	SB	277'	CR	S	--	ON	ON	YES	N/A	N/A
4009	1	07	2-MS-SV-201A	MS/SG A SAFETY VALVE	12050-FN-07081/18/06	MSVH	321.5'	12	S	1,8	CLOSED	CLOSED	NO	12050-MS-219/2	N/A
4010	1	07	2-MS-SV-202A	MS/SG A SAFETY VALVE	12050-FN-07081/18/06	MSVH	321.5'	12	S	1,8	CLOSED	CLOSED	NO	12050-MS-222/2	N/A
4011	1	07	2-MS-SV-203A	MS/SG A SAFETY VALVE	12050-FN-07081/18/06	MSVH	321.5'	12	S	1,8	CLOSED	CLOSED	NO	N/A	N/A
4012	1	07	2-MS-SV-204A	MS/SG A SAFETY VALVE	12050-FN-07081/18/06	MSVH	321.5'	12/GB	S	1,8	CLOSED	CLOSED	NO	12050-MS-225/2	N/A
4013	1	07	2-MS-SV-205A	MS/SG A SAFETY VALVE	12050-FN-07081/18/06	MSVH	321.5'	12	S	1,8	CLOSED	CLOSED	NO	12050-MS-228/2	N/A
4014	1	07	2-MS-PCV-201A	MS/SG A ATMOSPHERIC STEAM DUMP VALVE	12050-FN-07081/18/06	MSVH	309'	--	S	25	CLOSED	OPEN	NO	12050-MS-231/2; 12050-MS-053/7	INLET AIR
4015	1	18	2-MS-PY-201A	MS/SG A STEAM DUMP VALVE E/P TRANSDUCER	12050-MS-053/7	MSVH	272'	NOYE 2A	S	--	ON	ON	YES	N/A	N/A
4016	1, 2	R	2-MS-343	MS/MANUAL BYPASS VALVE	12050-FN-07081/18/05	MSVH	285'	13/GB	--	3	CLOSED	CLOSED	NO	N/A	N/A
4017	1, 2	O	2-MS-TV-201A	MS/SG A MSIV	12050-FN-07081/18/04	MSVH	--	--	S	--	OPEN	CLOSED	YES	12050-MS-206/6	2-MS-SOV-201A1,2,3,4,5,6,7
4018	1, 2	OBB	2-MS-SOV-201A1	MS/SG A MSIV PILOT VALVE	12050-FN-07081/18/04	QSPH	285'	13/GB	S	--	AIR	VENT	YES	12050-MS-206/6	N/A
4019	1, 2	OBB	2-MS-SOV-201A2	MS/SG A MSIV PILOT VALVE	12050-FN-07081/18/04	QSPH	285'	13/GB	S	--	AIR	VENT	YES	12050-MS-206/6	N/A
4020	1, 2	OBB	2-MS-SOV-201A4	MS/SG A MSIV PILOT VALVE	12050-FN-07081/18/03	QSPH	285'	13/GB	S	--	AIR	VENT	YES	12050-MS-206/6	N/A
4021	1, 2	OBB	2-MS-SOV-201A5	MS/SG A MSIV PILOT VALVE	12050-FN-07081/18/03	QSPH	285'	13/GB	S	--	AIR	VENT	YES	12050-MS-206/6	N/A
4022	1, 2	OBB	2-MS-SOV-201A6	MS/SG A MSIV PILOT VALVE	12050-FN-07081/18/04	QSPH	276'	13.5/GA	S	--	AIR	VENT	YES	12050-MS-206/6	N/A

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAVID W. JACOBS / ENGINEER

*David W. Jacobs*  
Signature

MARCH 11, 1993

DAVID J. WEDDER / ENGINEER

*David J. Wedder*  
Signature

MARCH 11, 1993



LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	DOG. NO./REV./ZONE	BUILDING	EQUIPMENT Flr./Elev.	LOCATION Rm. or Row/Col.	SORT NOTES	Normal	Disturbed	REQ'D	ENG. NO./REV.	SUPPORTING COMPONENTS		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
4023	1, 2	08B	2-MS-SOV-201A7	MS/SG A MSIV PILOT VALVE	12050-FM-07081/70/03	QSPH	276'	13.6/GA	S R --	AIR	VENT	YES	12050-MS-206/6	N/A	
4024	1, 2	08B	2-MS-SOV-201A3	MS/SG A MSIV PILOT VALVE	12050-FM-07081/70/04	QSPH	256'	16/G8	S R --	AIR	VENT	YES	12050-MS-206/6	N/A	
4028	2	23	2-RC-E-1B	MS/STEAM GENERATOR B	12050-FM-001A/12/E3	CONTRT	291'	14	S	1,14	N/A	NO	N/A	N/A	
4031	1	18	2-MS-P1-2485	MS/SG B STEAM PRESSURE	12050-FM-07082/20/E7	QSPH	256'	16/G8	S R 9	ON	OK	YES	12050-MS-164/4	RACK 2-402	
4032	1	20	2-MS-P1-2485	MS/SG B STEAM PRESSURE	12050-FM-07082/20/E7	QSPH	276'	8/C	S R 9,36	ON	OK	YES	12050-MS-164/4	2-EI-CB-04	
4033	2	18	2-MS-P1-2486	MS/SG B STEAM PRESSURE	12050-FM-07082/20/E7	SB	256'	16/G8	S R 9	ON	OK	YES	12050-MS-168/5	RACK 2-401	
4034	2	20	2-MS-P1-2486	MS/SG B STEAM PRESSURE	12050-FM-07082/20/E5	QSPH	276'	8/C	S R 9,36	ON	OK	YES	12050-MS-168/5	2-EI-CB-04	
4035	2	18	2-MS-P1-2018	MS/SF B STEAM PRESSURE	12050-FM-07082/20/E5	SB	256'	13.7/G8	S R --	ON	ON	YES	12050-MS-054/7	RACK 2-402	
4036	2	20	2-MS-P1C-2018	M/SG B STEAM PRESSURE	12050-FM-07082/20/E5	SB	277'	CR	S R --	ON	ON	YES	N/A	N/A	
4037	2	07	2-MS-SV-2028	MS/SG B SAFETY VALVE	12050-FM-07082/20/D6	MSVH	321.5'	13	S	1,8	CLOSED	NO	12050-MS-220/2	N/A	
4038	2	07	2-MS-SV-2028	MS/SG B SAFETY VALVE	12050-FM-07082/20/D6	MSVH	321.5'	13	S	1,8	CLOSED	NO	12050-MS-223/2	N/A	
4039	2	07	2-MS-SV-2038	MS/SG B SAFETY VALVE	12050-FM-07082/20/D6	MSVH	321.5'	13	S	1,8	CLOSED	NO	N/A	N/A	
4040	2	07	2-MS-SV-2048	MS/SG B SAFETY VALVE	12050-FM-07082/20/D6	MSVH	321.5'	13	S	1,8	CLOSED	NO	12050-MS-226/2	N/A	
4041	2	07	2-MS-SV-2058	MS/SG B SAFETY VALVE	12050-FM-07082/20/D6	MSVH	321.5'	13	S	1,8	CLOSED	NO	12050-MS-229/2	N/A	
4042	2	07	2-MS-PCV-2018	MS/SG B ATMOSPHERIC STEAM DUMP VALVE	12050-FM-07082/20/E6	MSVH	309'	13/G8	S R 25	CLOSED	OPEN	NO	12050-MS-232/2;	1MS1 AIR	
													12050-MS-054/7		
4043	2	18	2-MS-PY-2018	MS/SG B STEAM DUMP VALVE E/P TRANSDUCER	12050-MS-054/7	MSVH	272'	NOTE 20	S R --	ON	ON	YES	N/A	N/A	
4044	1, 2	R	2-MS-352	MS/MANUAL BYPASS VALVE	12050-FM-07082/20/D4	MSVH	297'	13/G8	--	3	CLOSED	NO	N/A	N/A	
4045	1, 2	0	2-MS-TV-2018	MS/SG B MSIV	12050-FM-07082/20/E4	MSVH	285'	13.3/G8	S --	OPEN	CLOSED	YES	12050-MS-207/6	2-MS-SOV-201B1,2,3,4,5,6,7	
4046	1, 2	08B	2-MS-SOV-201B1	MS/SG B MSIV PILOT VALVE	12050-FM-07082/20/E4	QSPH	276'	13.6/G8	S R --	AIR	VENT	YES	12050-MS-207/6	N/A	
4047	1, 2	08B	2-MS-SOV-201B2	MS/SG B MSIV PILOT VALVE	12050-FM-07082/20/E4	QSPH	276'	13.6/G8	S R --	AIR	VENT	YES	12050-MS-207/6	N/A	
4048	1, 2	08B	2-MS-SOV-201B4	MS/SG B MSIV PILOT VALVE	12050-FM-07082/20/E3	QSPH	276'	13.6/G8	S R --	AIR	VENT	YES	12050-MS-207/6	N/A	

CERTIFICATION: The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAWN W. JACOBS / ENGINEER  
 Signature: *[Handwritten Signature]*  
 MARCH 11, 1993

DAVID J. WEDDER / ENGINEER  
 Signature: *[Handwritten Signature]*  
 MARCH 11, 1993

NORTH ANNA UNIT 2  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
DECAY HEAT REMOVAL FUNCTION  
(Sorted by Line Number)

Date Base File Name/Date/Time: NA2\_SSEL.DBF / 03/11/93 / 09:30:30  
Sort Criteria: Line Number  
Filter Criteria: (Line Number >= 4000) AND (Line Number < 5000)  
Program File Name & Version: SSEL v0.0

LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	Equipment Flr.-Lvl.	LOCATION Ra. or Rm./Co1.	OP. ST. Normal	Desired	REQ'D INTERCONNECTIONS				
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
4049	1, 2	088	2-MS-SOV-201B5	MS/SG B MS1V PILOT VALVE	12050-FN-07082/20/E3	QSPH	276'	13.6/GB	S R --	AIR	VENT	YES	12050-MS-207/6	N/A
4050	1, 2	088	2-MS-SOV-201B6	MS/SG B MS1V PILOT VALVE	12050-FN-07082/20/E4	QSPH	276'	13.6/GB	S R --	AIR	VENT	YES	12050-MS-207/6	N/A
4051	1, 2	088	2-MS-SOV-201B7	MS/SG B MS1V PILOT VALVE	12050-FN-07082/20/F4	QSPH	276'	13.6/GB	S R --	AIR	VENT	YES	12050-MS-207/6	N/A
4052	1, 2	088	2-MS-SOV-201B3	MS/SG B MS1V PILOT VALVE	12050-FN-07082/20/F4	QSPH	236'	16/GA	S R --	AIR	VENT	YES	12050-MS-207/6	N/A
4054	3	23	2-RC-E-1C	MS/STEAM GENERATOR C	12050-FN-001A/12/D5	CONTNT	291'	8	S 1,14	N/A	N/A	NO	N/A	N/A
4059	2	18	2-MS-PT-2494	MS/SG C STEAM PRESSURE	12050-FN-07083/19/B7	QSPH	256'	16/GB	S R 9	ON	ON	YES	12050-MS-170/4	P/CK 2-802
4060	2	20	2-MS-PT-2494	MS/SG C STEAM PRESSURE	12050-FN-07083/19/B7	S8	276'	8/C	S R 9,36	ON	ON	YES	12050-MS-170/4	2-EI-C8-04
4061	1	18	2-MS-PT-2496	MS/SG C STEAM PRESSURE	12050-FN-07083/19/C6	QSPH	256'	16/GB	S R 9	ON	ON	YES	12050-MS-174/6	RACK 2-801
4062	1	20	2-MS-PT-2496	MS/SG C STEAM PRESSURE	12050-FN-07083/19/B6	S8	276'	8/C	S R 9,36	ON	ON	YES	12050-MS-174/6	2-EI-C8-04
4063	3	18	2-MS-PT-201C	MS/SG C STEAM PRESSURE	12050-FN-07083/19/B6	QSPH	256'	14.1/GA	S R --	ON	ON	YES	12050-MS-055/7	N/A
4064	3	20	2-MS-PT-201C	MS/SG C STEAM PRESSURE	12050-FN-07083/19/B6	S8	277'	CR	S R --	ON	ON	YES	N/A	N/A
4065	3	07	2-MS-SV-201C	MS/SG C SAFETY VALVE	12050-FN-07083/19/D6	MSVH	307'	13/GB	S 1,8	CLOSED	CLOSED	NO	12050-MS-221/2	N/A
4066	3	07	2-MS-SV-202C	MS/SG C SAFETY VALVE	12050-FN-07083/19/D6	MSVH	307'	13/GB	S 1,8	CLOSED	CLOSED	NO	12050-MS-224/2	N/A
4067	3	07	2-MS-SV-203C	MS/SG C SAFETY VALVE	12050-FN-07083/19/D6	MSVH	321.5'	13	S 1,8	CLOSED	CLOSED	NO	N/A	N/A
4068	3	07	2-MS-SV-204C	MS/SG C SAFETY VALVE	12050-FN-07083/19/D6	MSVH	321.5'	13	S 1,8	CLOSED	CLOSED	NO	12050-MS-227/2	N/A
4069	3	07	2-MS-SV-205C	MS/SG C SAFETY VALVE	12050-FN-07083/19/D5	MSVH	321.5'	13	S 1,8	CLOSED	CLOSED	NO	12050-MS-230/2	N/A
4070	3	07	2-MS-PCV-201C	MS/SG C ATMOSPHERIC STEAM DUMP VALVE	12050-FN-07083/19/E5	MSVH	309'	13.3/GA	S R 25	CLOSED	OPEN	NO	12050-MS-233/2	INST AIR
4071	3	18	2-MS-PV-201C	MS/SG C STEAM DUMP VALVE E/P TRANSducer	12050-MS-233/2	MSVH	272'	NOTE 2C	S R --	ON	ON	YES	N/A	N/A
4072	1, 2	2	2-MS-361	MS/MANUAL BYPASS ISOL	12050-FN-07083/19/D4	MSVH	--	--	-- 3	CLOSED	CLOSED	NO	N/A	N/A
4073	1, 2	0	2-MS-TV-201C	MS/SG C MS1V	12050-FN-07083/19/C4	MSVH	285'	13.5/GB	S --	OPEN	CLOSED	YES	12050-MS-208/6	2-MS-SOV-201C1,2,3,4,5,6,7
4074	1, 2	088	2-MS-SOV-201C1	MS/SG C MS1V PILOT VALVE	12050-FN-07083/19/D4	QSPH	276'	13.6/GB	S R --	AIR	VENT	YES	12050-MS-208/6	N/A

CERTIFICATION:

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MARCH 11, 1993

DAWN N. JACOBS / ENGINEER

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

Signature

NORTH ANNA UNIT 2  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
DECAY HEAT REMOVAL FUNCTION  
(Sorted by Line Number)

Data Base File Name/Date/Time: NA2 SSEL.DBF / 03/11/93 / 09:30:30  
Sort Criteria: Line Number  
Filter Criteria: (Line Number >= '4000') AND (Line Number < '5000')  
Program File Name & Version: SSEL v0.0

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Fir. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER SUPPLYING SYS. REQ'D	SUPPORTING SYS. ENG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
4075	1, 2	088	2-MS-SOV-201C2	MS/SG C MSIV PILOT VALVE	12050-FM-070B3/19/D4	QSPH	276'	13.6/GB	S R --	AIR	VENT	YES	12050-MS-208/6	N/A	
4076	1, 2	088	2-MS-SOV-201C4	MS/SG C MSIV PILOT VALVE	12050-FM-070B3/19/D4	QSPH	276'	13.6/GB	S R --	AIR	VENT	YES	12050-MS-208/6	N/A	
4077	1, 2	088	2-MS-SOV-201C5	MS/SG C MSIV PILOT VALVE	12050-FM-070B3/19/D4	QSPH	276'	13.6/GB	S R --	AIR	VENT	YES	12050-MS-208/6	N/A	
4078	1, 2	088	2-MS-SOV-201C6	MS/SG C MSIV PILOT VALVE	12050-FM-070B3/19/D4	QSPH	276'	13.6/GB	S R --	AIR	VENT	YES	12050-MS-208/6	N/A	
4079	1, 2	088	2-MS-SOV-201C7	MS/SG C MSIV PILOT VALVE	12050-FM-070B3/19/D4	QSPH	276'	13.6/GB	S R --	AIR	VENT	YES	12050-MS-208/6	N/A	
4080	1, 2	088	2-MS-SOV-201C3	MS/SG C MSIV PILOT VALVE	12050-FM-070B3/19/E4	QSPH	262'	13.6/GB	S R --	AIR	VENT	YES	12050-MS-208/6	N/A	
4086	1	07	2-MS-TV-211A	MS/TDAFW STEAM ADMISSION	12050-FM-070A3/22/E5	QSPH	274'	13.3/GA	S --	CLOSED	OPEN	NO	12050-MS-211/B	N/A	
4087	1	088	2-MS-SOV-211A	MS/TDAFW STEAM ADMISSION PILOT	12050-FM-070A3/22/E5	QSPH	256'	12.8/G	S R --	AIR	VENT	YES	12050-MS-211/B	N/A	
4088	2	07	2-MS-TV-211B	MS/TDAFW STEAM ADMISSION	12050-FM-070A3/22/E4	MSVH	274'	13.3/GA	S --	CLOSED	OPEN	NO	12050-MS-212/B	N/A	
4089	2	088	2-MS-SOV-211B	MS/TDAFW STEAM ADMISSION PILOT	12050-FM-070A3/22/E4	QSPH	256'	12.8/G	S R --	AIR	VENT	YES	12050-MS-212/B	N/A	
4102	1, 2	0	2-MS-TV-215	MS/TDAFW TRIP VALVE	12050-FM-070A3/22/C4	MSVH	284'	13.2/GA	S --	OPEN	OPEN	NO	12050-MS-213/5	N/A	
4103	1	21	2-CN-TK-2	CN/CONDENSATE STORAGE TANK	12050-FM-073A/30/A6	AUX	271'	BC	S --	N/A	N/A	NO	12050-FP-40F	N/A	
4104	1	18	2-CN-LT-204	CN/CONDENSATE STORAGE TANK LEVEL	12050-FM-073A/30/B6	YARD	302'	2/MB	S R --	ON	ON	YES	12050-CN-002/5	N/A	
4105	1	20	2-CN-LI-204	CN/CONDENSATE STORAGE TANK LEVEL	12050-CN-002/5	SB	277'	CR	S R --	ON	ON	YES	N/A	N/A	
4106	1	R	2-CN-286	CN/MANUAL ISOL	12050-FM-073A/30/C6	YARD	--	--	--	15	OPEN	CLOSED	NO	N/A	N/A
4107	1	R	2-CN-152	CN/LEVEL CONTROL ISOL	12050-FM-073A/30/C6	YARD	--	--	--	15	OPEN	CLOSED	NO	N/A	N/A
4108	1	R	2-CN-149	CN/LEVEL CONTROL ISOL	12050-FM-073A/30/C6	YARD	--	--	--	15	OPEN	CLOSED	NO	N/A	N/A
4109	1	R	2-CN-1001	CN/SAMPLE ISOL	12050-FM-073A/30/B7	YARD	--	--	--	15	OPEN	CLOSED	NO	N/A	N/A
4110	1	R	2-CN-136	CN/MRV ISOL	12050-FM-073A/30/B7	TB	--	--	--	15	OPEN	CLOSED	NO	N/A	N/A
4111	1	R	2-CN-137	CN/MRV ISOL	12050-FM-073A/30/B7	TB	--	--	--	15	OPEN	CLOSED	NO	N/A	N/A
4112	1	R	2-CN-138	CN/MRV ISOL	12050-FM-073A/30/A7	TB	--	--	--	15	OPEN	CLOSED	NO	N/A	N/A
4113	1	R	2-CN-139	CN/MRV ISOL	12050-FM-073A/30/A7	TB	--	--	--	15	OPEN	CLOSED	NO	N/A	N/A
4114	1	R	2-CN-218	CN/CHILLED WATER ISOL	12050-FM-073A/30/C7		--	--	--	15	OPEN	CLOSED	NO	N/A	N/A

CERTIFICATION:

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DAVID W. JACOBS / ENGINEER

*David W. Jacobs*  
Signature

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

*David J. Werder*  
Signature

MARCH 11, 1993

NORTH ANBAR UNIT 2  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
DECAY HEAT REMOVAL FUNCTION  
(Sorted by Line Number)

Data Base File Name/Date/Time: MA2\_SSEL.DBF / 03/11/93 / 09:30:38  
Sort Criteria: Line Number  
Filter Criteria: (Line Number >= '4000') AND (Line Number < '5000')  
Program File Name & Version: SSEN v0.0

LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	LOCATION	Normal	OP. ST.	Desired	REQUIR	REQUIR	REQUIR			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
4115	1	R	2-CN-142	CN/LEVEL CONTROL ISOL	12050-FN-073M/30/07	YARD	--	15	OPEN	CLOSED	NO	N/A	N/A	N/A	N/A
4116	1	R	2-CN-140	CN/COND TO HTG BOILER	12050-FN-073M/30/08		--	15	OPEN	CLOSED	NO	N/A	N/A	N/A	N/A
4117	1	R	2-CN-WHD121*	CN/ISOL VALVE	12050-FN-073M/30/07	YARD	--	15	OPEN	CLOSED	NO	N/A	N/A	N/A	N/A
4118	1	R	2-CP-390	CP/CP BACKWASH PUMPS ISOL VALVE	12050-FN-073B/11/06	YARD	--	15	OPEN	CLOSED	NO	N/A	N/A	N/A	N/A
4119	1	R	2-CP-312	CP/CP BACKWASH PUMPS ISOL VALVE	12050-FN-073B/11/06	YARD	--	15	OPEN	CLOSED	NO	N/A	N/A	N/A	N/A
4119A	1	R	2-FN-144	FN/CONDENSATE STORAGE TANK ISOL	12050-FN-074A3/29/03	AFPH	274'	--	15	CLOSED	OPEN	NO	N/A	N/A	N/A
4120	1	21	2-CN-TK-1	CN/CONDENSATE STORAGE TANK	12050-FN-074A3/29/03	AFPH	271'	5	N/A	N/A	NO	12050-FP-2J	N/A	N/A	N/A
4121	1	18	2-CN-LT-200A	CN/CONDENSATE STORAGE TANK LEVEL	12050-FN-074A3/29/03	AFPH	271'	5	R	ON	ON	YES	12050-CN-069/A	N/A	N/A
4122	1	18	2-CN-LT-200B	CN/CONDENSATE STORAGE TANK LEVEL	12050-FN-074A3/29/03	AFPH	275'	5	R	ON	ON	YES	12050-CN-001/B	N/A	N/A
													12050-FP-2J		
													12050-FP-2K		
4123	1	20	2-CN-LI-200B-1	CN/CONDENSATE STORAGE TANK LEVEL	12050-CN-001/B	SB	276'	5	R	ON	ON	YES	N/A	2-EI-CB-04	N/A
4124	2	20	2-FN-P1-254C	FN/MONFWP SUCTION (LOCAL)	12050-FN-074A3/29/05	AFPH	275'	5	36	N/A	N/A	NO	12050-FP-2J	2-FN-P-3B	N/A
													12050-FP-2K		
4125	2	18	2-FN-PT-203C	FN/MONFWP SUCTION PRESSURE	12050-FN-074A3/29/CS	AFPH	274'	5	R	ON	ON	YES	12050-FN-003/A	N/A	N/A
4126	2	20	2-FN-P1-203C	FN/MONFWP SUCTION PRESSURE	12050-FN-074A3/29/CS	SB	277'	5	R	ON	ON	YES	12050-FN-003/A	2-EI-CB-04	N/A
4127	2	R	2-FN-182	FN/SM MANUAL ISOL TO MONFWP	12050-FN-074A3/29/05	AFPH	269'	--	15	CLOSED	OPEN	NO	N/A	N/A	N/A
4128	2	R	2-FN-180	FN/SM MANUAL ISOL TO MONFWP	12050-FN-074A3/29/05	AFPH	274'	--	15	OPEN	CLOSED	NO	N/A	N/A	N/A
4129	2	05	2-FN-P-3B	FN/MOTOR-DRIVEN AUXILIARY FEEDWATER PUMP (MONFWP)	12050-FN-074A3/29/05	AFPH	275'	5	R	OFF	RUBBING	YES	12050-FP-2J	N/A	N/A
4130	2	20	2-FN-P1-256B	FN/MONFWP SUCTION (LOCAL)	12050-FN-074A3/29/06	AFPH	274'	5	36	N/A	N/A	NO	12050-FP-2K	2-FN-P-3A	N/A
4131	2	18	2-FN-PT-203B	FN/MONFWP SUCTION PRESSURE	12050-FN-074A3/29/CS	AFPH	274'	5	R	ON	ON	YES	12050-	-002/A	N/A
4132	2	20	2-FN-P1-203A	FN/MONFWP SUCTION PRESSURE	12050-FN-074A3/29/CS	SB	277'	5	R	ON	ON	YES	12050-	-002/A	2-EI-CB-04
4133	2	R	2-FN-164	FN/SM MANUAL ISOL TO MONFWP	12050-FN-074A3/29/06	AFPH	269'	--	15	CLOSED	OPEN	NO	N/A	N/A	N/A
4134	2	R	2-FN-162	FN/SM MANUAL ISOL TO MONFWP	12050-FN-074A3/29/06	AFPH	274'	--	15	OPEN	CLOSED	NO	N/A	N/A	N/A

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DAWN W. JACOBS / ENGINEER

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

MARCH 11, 1993

*Dawn W. Jacobs*  
Signature

*David J. Werder*  
Signature

NORTH ANNA UNIT 2  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
DECAY HEAT REMOVAL FUNCTION  
(Sorted by Line Number)

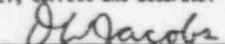
Data Base File Name/Date/Time: NA2\_SSEL.DBF / 03/11/93 / 09:30:38  
Sort Criteria: Line Number  
Filter Criteria: (Line Number >= '4000') AND (Line Number < '5000')  
Program File Name & Version: SSEL v0.0

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	OP. ST.	POWER SUPPORTING SYS.	REQ'D INTERCONNECTIONS					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
4135	2 05	2-FW-P-3A	FW/MOTOR-DRIVEN AUXILIARY FEEDWATER PUMP (MDFWP)	12050-FW-074A3/29/B6	AFPH	275'	--	S R --	OFF	RUNNING	YES	12050-FW-2J 12050-FW-2K	N/A		
4136	1 20	2-FW-P1-256A	FW/TDAFWP SUCTION (LOCAL)	12050-FW-074A3/29/B7	AFPH	275'	--	S --	N/A	N/A	NO	N/A	N/A	N/A	
4137	1 18	2-FW-PT-203A	FW/TDAFWP SUCTION PRESSURE	12050-FW-074A3/29/C7	AFPH	276'	--	S R --	ON	ON	YES	12050-FW-001/3	N/A		
4138	1 20	2-FW-P1-203A	FW/TDAFWP SUCTION PRESSURE	12050-FW-074A3/29/C7	SB	277'	CR	S R 36	ON	ON	YES	12050-FW-001/3	2-EI-CB-04		
4139	1 R	2-FW-147	FW/SW MANUAL ISOL TO TDAFWP	12050-FW-074A3/29/B7	AFPH	269'	--	-- 15	CLOSED	OPEN	NO	N/A	N/A		
4140	1 R	2-FW-145	FW/SW MANUAL ISOL TO TDAFWP	12050-FW-074A3/29/B7	AFPH	274'	--	-- 15	OPEN	CLOSED	NO	N/A	N/A		
4141	1, 2 R	2-FW-202	FW/SW MANUAL ISOL TO AFMP HEADER	12050-FW-074A3/29/AB	AFPH	267'	--	-- 15	CLOSED	OPEN	NO	N/A	N/A		
4142	1 05	2-FW-P-2	FW/TURBINE-DRIVEN AUXILIARY FEEDWATER PUMP (TDAFWP)	12050-FW-074A3/29/B8	AFPH	274'	--	S --	OFF	RUNNING	YES	12050-FW-2J 12050-FW-2K	N/A		
4143	2 21	2-FW-POC-3B*	FW/MDFWP OIL COOLER	12050-FW-074A3/29/D4	AFPH	--	--	S 36	N/A	N/A	NO	N/A	2-FW-P-3B		
4144	2 21	2-FW-POC-3A*	FW/MDFWP OIL COOLER	12050-FW-074A3/29/D6	AFPH	--	--	S 36	N/A	N/A	NO	N/A	2-FW-P-3A		
4145	1 21	2-FW-POC-2*	FW/TDAFWP OIL COOLER	12050-FW-074A3/29/D7	AFPH	--	--	S 36	N/A	N/A	NO	N/A	2-FW-P-2		
4146	2 18	2-FW-PC-259A	FW/PRESSURE CONTROL	12050-FW-074A3/29/F8	AFPH	273'	--	S R --	ON	ON	YES	12050-FW-053/5	N/A		
4147	2 07	2-FW-PCV-259A	FW/AFWP TO SG B CONTROL VALVE	12050-FW-074A3/29/F8	AFPH	273'	--	S --	OPEN	OPEN	NO	12050-FW-053/5	N/A		
4148	2 20	2-FW-P1-201A-2	FW/AFWP TO SG B PRESSURE	12050-FW-074A3/29/F8	SB	254'	SWGR RM	S R --	ON	ON	YES	12050-FW-016/4	2-EI-CB-06B		
4149	2 20	2-FW-P1-201A-1	FW/AFWP TO SG B PRESSURE	12050-FW-074A3/29/F8	SB	277'	CR	S R 36	ON	ON	YES	12050-FW-016/4	2-EI-CB-04		
4150	2 18	2-FW-PT-201A	FW/AFWP TO SG B PRESSURE	12050-FW-074A3/29/F8	AFPH	274'	--	S R --	ON	ON	YES	12050-FW-016/4	N/A		
4151	2 18	2-FW-PC-259B	FW/PRESSURE CONTROL	12050-FW-074A3/29/E8	AFPH	273'	--	S R --	ON	ON	YES	12050-FW-054/5	N/A		
4152	2 07	2-FW-PCV-259B	FW/AFWP TO SG C CONTROL VALVE	12050-FW-074A3/29/E8	AFPH	273'	--	S --	OPEN	OPEN	NO	12050-FW-054/5	N/A		
4153	2 20	2-FW-P1-201B-1	FW/AFWP TO SG C PRESSURE	12050-FW-074A3/29/E8	SB	277'	CR	S R 36	ON	ON	YES	12050-FW-017/4	2-EI-CB-04		
4154	2 20	2-FW-P1-201B-2	FW/AFWP TO SG C PRESSURE	12050-FW-074A3/29/E8	SB	254'	SWGR RM	S R --	ON	ON	YES	12050-FW-017/4	2-EI-CB-06B		
4155	2 18	2-FW-PT-201B	FW/AFWP TO SG C PRESSURE	12050-FW-074A3/29/E8	AFPH	274'	--	S R --	ON	ON	YES	12050-FW-017/4	N/A		
4156	1 20	2-FW-P1-201C-1	FW/AFWP TO SG A PRESSURE	12050-FW-074A3/29/E8	SB	277'	CR	S R --	ON	ON	YES	12050-FW-150/5	N/A		

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DANN W. JACOBS / ENGINEER



MARCH 11, 1993

DAVID J. WERDER / ENGINEER



MARCH 11, 1993

LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	LOCATION	Normal	Desired	POWER SUPPORTING S.C.S.	REQ'D INTERCONNECTIONS		
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(11)	(12)	(13)	(14)	(15)	(16)
4157	1	20	2-FW-PT-201C-2	12050-FW-074A3/29/EB	AFPH	254'	ON	ON	YES	12050-FW-150/5	N/A	
4158	1	18	2-FW-PT-201C	12050-FW-074A3/29/EB	AFPH	277'	ON	ON	YES	12050-FW-150/5	N/A	
4159	1	08A	2-FW-HOV-2000	12050-FW-074A3/29/DB	AFPH	273'	OPEN	OPEN	NO	12050-FW-2J	N/A	
4160	2	08A	2-FW-HOV-2008	12050-FW-074A1/27/N6	AFPH	275'	OPEN	OPEN	NO	12050-FW-2J	N/A	
4161	2	18	2-FW-FT-2008	12050-FW-074A1/27/C6	AFPH	273'	ON	ON	YES	12050-FW-051/6	N/A	
4162	2	20	2-FW-FT-2008	12050-FW-074A1/27/C6	SB	277'	ON	ON	YES	12050-FW-051/6	2-EI-CB-04	
4163	2	07	2-FW-HCV-200C	12050-FW-074A1/27/A7	AFPH	275'	OPEN	OPEN	NO	12050-FW-057/6	N/A	
4165	2	18	2-FW-FT-200C	12050-FW-074A1/27/B7	AFPH	273'	ON	ON	YES	12050-FW-052/6	N/A	
4166	2	20	2-FW-FT-200C	12050-FW-074A1/27/B7	SB	277'	ON	ON	YES	12050-FW-052/6	2-EI-CB-04	
4167	2	08A	2-FW-HOV-200C	12050-FW-074A1/27/A7	AFPH	275'	CLOSED	OPEN	YES	12050-FW-2J	N/A	
4168	2	R	2-FW-128	12050-FW-074A1/27/AS	AFPH	273'	CLOSED	OPEN	NO	N/A	N/A	
4169	2	07	2-FW-HCV-2008	12050-FW-074A1/27/N6	AFPH	275'	CLOSED	OPEN	NO	12050-FW-056/4	N/A	
4171	2	R	2-FW-98	12050-FW-074A1/27/N6	AFPH	273'	CLOSED	OPEN	NO	N/A	N/A	
4172	1	07	2-FW-HCV-200A	12050-FW-074A1/27/AS	AFPH	275'	CLOSED	OPEN	NO	12050-FW-055/4	N/A	
4174	2	R	2-FW-66	12050-FW-074A1/27/A7	AFPH	273'	CLOSED	OPEN	NO	N/A	N/A	
4175	2	08A	2-FW-HOV-200A	12050-FW-074A1/27/AS	AFPH	275'	CLOSED	OPEN	YES	12050-FW-2J	N/A	
4176	2	R	2-FW-64	12050-FW-074A1/27/A7	AFPH	273'	CLOSED	OPEN	NO	N/A	N/A	
4177	1	18	2-FW-FT-200A	12050-FW-074A1/27/D6	AFPH	273'	ON	ON	YES	12050-FW-050/6	N/A	
4178	1	20	2-FW-FT-200A	12050-FW-074A1/27/D6	SB	277'	ON	ON	YES	12050-FW-050/6	2-EI-CB-04	
4180	1, 2	20	2-FW-LR-2477	12050-FW-074A1/27/R8	SB	277'	ON	ON	YES	N/A	2-EI-CB-04	
4181	1	18	2-FW-LT-2477	12050-FW-074A1/27/F8	CONTR	241' A	ON	ON	YES	12050-FW-088/7	RACK 2-104	

CERTIFICATION:  
 The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAVID W. JACOBS / ENGINEER  
 Signature: *[Signature]*  
 MARCH 11, 1993

DAVID J. BERDER / ENGINEER  
 Signature: *[Signature]*  
 MARCH 11, 1993

NORTH ARMA UNIT 2  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
DECAY HEAT REMOVAL FUNCTION  
(Sorted by Line Number)

Data Base File Name/Date/T/Time: MA2\_SSEL.DBF / 03/11/93 / 09:30:36  
Sort Criteria: Line Number  
Filter Criteria: (Line Number >= '4000') AND (Line Number <= '5000')  
Program File Name & Version: SSEL v0.0

LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	Equipment Flt.-Elev.	Location Ra. or Row/Col.	Sort Notes (Normal)	Desired	Power Supporting Sys. Req'd Interconnections				
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
4185	1	18	2-FW-LT-2474	FW/SG A LEVEL	2050-FM-074A1/27/F7	CONTINT	263'	13.5	OH	OH	YES	12050-FW-091/7B	R/A	
4186	1	20	2-FW-LI-2474	FW/SG A LEVEL	2050-FM-074A1/27/E7	SB	277'	CR	OH	OH	YES	12050-FW-091/7B	2-EI-CB-04	
4187	1	18	2-FW-LT-2475	FW/SG A LEVEL	2050-FM-074A1/27/F6	CONTINT	241' A	17.5	OH	OH	YES	12050-FW-097/7;	RACK 2-104	
												12050-FK-1B		
4188	1	20	2-FW-LI-2475	FW/SG A LEVEL	2050-FM-074A1/27/E6	SB	276'	8/C	OH	OH	YES	12050-FW-097/7	2-EI-CB-04	
4189	1	18	2-FW-LT-2476	FW/SG A LEVEL	2050-FM-074A1/27/F6	CONTINT	263'	15	OH	OH	YES	12050-FW-103/7	N/A	
4190	1	20	2-FW-LI-2476	FW/SG A LEVEL	2050-FM-074A1/27/E6	SB	276'	8/C	OH	OH	YES	12050-FW-103/7	2-EI-CB-04	
4193	2	18	2-FW-LT-2487	FW/SG B LEVEL	2050-FM-074A1/27/D6	CONTINT	241' A	9	OH	OH	YES	12050-FW-089/7B;	RACK 2-120	
												12050-FK-1C		
4197	2	18	2-FW-LT-2484	FW/SG B LEVEL	2050-FM-074A1/27/D7	CONTINT	241' A	8.8	OH	OH	YES	12050-FW-093/7;	RACK 2-120	
												12050-FK-1C		
4198	2	20	2-FW-LI-2484	FW/SG B LEVEL	2050-FM-074A1/27/D7	SB	277'	CR	OH	OH	YES	12050-FW-093/7	2-EI-CB-04	
4199	2	18	2-FW-LT-2485	FW/SG B LEVEL	2050-FM-074A1/27/D6	CONTINT	241' A	8.2	OH	OH	YES	12050-FW-099/7;	RACK 2-117	
												12050-FK-1C		
4200	2	20	2-FW-LI-2485	FW/SG B LEVEL	2050-FM-074A1/27/D6	SB	276'	8/C	OH	OH	YES	12050-FW-099/7	2-EI-CB-04	
4201	2	18	2-FW-LT-2486	FW/SG C LEVEL	2050-FM-074A1/27/D6	CONTINT	263'	8.2	OH	OH	YES	12050-FW-105/7	N/A	
4202	2	20	2-FW-LI-2486	FW/SG B LEVEL	2050-FM-074A1/27/D6	SB	276'	8/C	OH	OH	YES	12050-FW-105/7	2-EI-CB-04	
4203	3	18	2-FW-LT-2497	FW/SG C LEVEL	2050-FM-074A1/27/C8	CONTINT	241' A	3.8	OH	OH	YES	12050-FW-090/7;	RACK 2-101	
												12050-FK-1B		
4207	3	18	2-FW-LT-2494	FW/SG C LEVEL	2050-FM-074A1/27/C7	CONTINT	262'	4.8	OH	OH	YES	12050-FW-095/7	RACK 2-115	
4208	3	20	2-FW-LI-2494	FW/SG C LEVEL	2050-FM-074A1/27/C7	SB	276'	8/C	OH	OH	YES	12050-FW-095/7	2-EI-CB-04	
4209	3	18	2-FW-LT-2495	FW/SG C LEVEL	2050-FM-074A1/27/C7	CONTINT	262'	5.5	OH	OH	YES	12050-FW-101/7B	RACK 2-114	
4210	3	20	2-FW-LI-2495	FW/SG C LEVEL	2050-FM-074A1/27/C7	SB	276'	8/C	OH	OH	YES	12050-FW-101/7B	2-EI-CB-04	
4211	3	18	2-FW-LT-2496	FW/SG C LEVEL	2050-FM-074A1/27/C6	CONTINT	241' A	4	OH	OH	YES	12050-FW-107/7;	RACK 2-101	
												12050-FK-1B		
4212	3	20	2-FW-LI-2496	FW/SG C LEVEL	2050-FM-074A1/27/C6	SB	276'	8/C	OH	OH	YES	12050-FW-107/7	2-EI-CB-04	

CERTIFICATION:  
The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAWN W. JACOBS / ENGINEER  
MARCH 11, 1993

*[Signature]*  
Signature

DAVID J. WEDDER / ENGINEER  
MARCH 11, 1993

*[Signature]*  
Signature

NORTH ANNA UNIT 2  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
DECAY HEAT REMOVAL FUNCTION  
(Sorted by Line Number)

Data Base File Name/Date/Time: NA2\_SSEL.DBF / 03/11/93 / 09:30:38  
Sort Criteria: Line Number  
Filter Criteria: (Line Number >= '4000') AND (Line Number < '5000')  
Program File Name & Version: SSEL v0.0

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D	SUPPORTING SYS. ENG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS		
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)		
4213	1, 2	21	2-FW-E-1A	FW/FEEDWATER HEATER A	12050-FM-074A2/29/F4	TB	254'	B/2	S	23	N/A	N/A	NO	N/A	N/A	
4214	1, 2	21	2-FW-E-1B	FW/FEEDWATER HEATER B	12050-FM-074A2/29/F6	TB	254'	B/3	S	23	N/A	N/A	NO	N/A	N/A	
4246	1, 2	18	2-RH-PT-2403	RH/RHR PUMP INLET PRESSURE	12050-FM-094A1/15/B5	CONTMT	245'	17	S	R	---	ON	ON	YES	12050-FK-1B	N/A
4247	1, 2	08A	2-RH-MOV-2700	RH/RHR PUMP SUCTION ISOL	12050-FM-094A1/15/A5	CONTMT	241'	16	S	R	2	CLOSED	OPEN	YES	N/A	2-RC-PT-2402
4248	1, 2	08A	2-RH-MOV-2701	RH/RHR PUMP SUCTION ISOL	12050-FM-094A1/15/A4	CONTMT	231'	16	S	R	2	CLOSED	OPEN	YES	N/A	2-RH-PT-2403
4249	1	06	2-RH-P-1A	RH/RHR PUMP A	12050-FM-094A1/15/D7	CONTMT	231'	17.5	S	R	---	OFF	RUNNING	YES	N/A	N/A
4250	1	21	2-RH-E-2A	RH/RHR PUMP A SEAL COOLER	12050-FM-094A1/15/D7	CONTMT	231'	17.5	S	---	N/A	N/A	NO	N/A	N/A	
4252	2	06	2-RH-P-1B	RH/RHR PUMP B	12050-FM-094A1/15/D4	CONTMT	231'	2	S	R	---	OFF	RUNNING	YES	N/A	N/A
4253	2	21	2-RH-E-2B	RH/RHR PUMP B SEAL COOLER	12050-FM-094A1/15/D4	CONTMT	231'	2	S	---	N/A	N/A	NO	N/A	N/A	
4255	1, 2	18	2-RH-PIC-2602	RH/RHR PUMP'S DISCHARGE PRESSURE	12050-FM-094A1/15/F7	CONTMT	216'	16	S	R	---	ON	ON	YES	N/A	RACK 2-105
4256	1	21	2-RH-E-1A	RH/RHR HX A	12050-FM-094A2/14/EB	CONTMT	231'	17	S	---	N/A	N/A	NO	N/A	N/A	
4257	1, 2	19	2-RH-TE-2604	RH/RHR HX INLET TEMPERATURE	12050-FM-094A2/14/C8	CONTMT	234'	1	S	R	---	ON	ON	YES	12050-RH-002/3	N/A
4257A	1, 2	20	2-RH-TR-2604	RH/RHR HX INLET TEMPERATURE	12050-RH-002/3	SB	277'	CR	S	R	---	ON	ON	YES	N/A	N/A
4258	2	21	2-RH-E-1B	RH/RHR HX B	12050-FM-094A2/14/EB	CONTMT	231'	1	S	---	N/A	N/A	NO	N/A	N/A	
4259	1, 2	R	2-RH-31	RH/RHR LETDOWN ISOL	12050-FM-094A2/14/D5	CONTMT	---	---	---	3	OPEN	OPEN	NO	N/A	N/A	
4260	1, 2	07	2-RH-HCV-2750	RH/RHR HX OUTLET	12050-FM-094A2/14/C5	CONTMT	227'	2	S	R	---	OPEN	OP/CL	YES	N/A	N/A
4261	1, 2	18	2-RH-E/P-HCV-2758	RH/RHR HX OUTLET E/P	12050-RH-005/1	CONTMT	217'	1.5	S	R	---	ON	ON	YES	N/A	RACK 2-103
4262	1, 2	07	2-RH-FCV-2605	RH/RHR HX BYPASS	12050-FM-094A2/14/C7	CONTMT	217'	1.5	S	---	CLOSED	CLOSED	NO	N/A	RACK 2-102	
4263	1, 2	18	2-RH-FT-2605	RH/RHR HX OUTLET FLOW	12050-FM-094A2/14/C4	CONTMT	217'	1.5	S	R	---	ON	ON	YES	12050-RH-004/4	RACK 2-102
4263A	1, 2	20	2-RH-FI-2605	RH/RHR HX OUTLET FLOW	12050-RH-004/4	SB	277'	CR	S	R	---	ON	ON	YES	N/A	N/A
4264	1, 2	19	2-RH-TE-2606	RH/RHR HX OUTLET TEMPERATURE	12050-FM-094A2/14/C4	CONTMT	229'	3.8	S	R	---	ON	ON	YES	12050-RH-003/3	N/A
4264A	1, 2	R	2-RH-37	RH/RHR TO RMST ISOL	12050-FM-094A2/14/C3	CONTMT	---	---	---	15	CLOSED	OPEN	NO	N/A	N/A	
4264B	1, 2	R	2-RH-38	RH/RHR TO RMST ISOL	12050-FM-094A2/14/D3	AUX	---	---	---	15	CLOSED	OPEN	NO	N/A	N/A	

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAMN W. JACOBS / ENGINEER

*DW Jacobs*  
Signature

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

*DJ Werder*  
Signature

MARCH 11, 1993



NORTH ANNA UNIT 2  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
DECAY HEAT REMOVAL FUNCTION  
(Sorted by Line Number)

Data Base File Name/Date/Time: NA2\_SSEL.DBF / 03/11/93 / 09:30:30  
Sort Criteria: Line Number  
Filter Criteria: (Line Number >= '4000') AND (Line Number <= '5000')  
Program File Name & Version: SSEN v0.0

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Fir. Elev.	LOCATION Rm. or Row/Col.	OP. ST.	POWER SUPPORTING SYS.	REQ'D INTERCONNECTIONS			
(1)	(2)	(3)	(4)	(6)	(7)	(8)	(9)	Normal	Desired	REQD?	DWG. NO./REV.	(15)	(16)
4265	1, 2	08B	2-SS-TV-207A	SS/RHR HX OUTLET TO SAMPLING SYSTEM	12050-FM-089B1/17/F8	CGWHT	220'	4	S R --	CLOSED OPEN	YES	N/A	N/A
4266	1, 2	08B	2-SS-TV-207B	SS/RHR HX OUTLET TO SAMPLING SYSTEM	12050-FM-089B1/17/F8	CONHT	232'	1	S R --	CLOSED OPEN	YES	N/A	N/A
4267	1, 2	08B	2-SS-TV-203A	SS/SAMPLING SYSTEM ISOL	12050-FM-089B1/17/F7	CONHT	259'	9	S R A,40	CLOSED OP/CL	YES	N/A	N/A
4267	1	08B	2-SS-TV-203A	SS/SAMPLING SYSTEM ISOL	12050-FM-089B1/17/F7	CONHT	259'	9	R 1,40	CLOSED CLOSED	NO	N/A	N/A
4268	1, 2	08B	2-SS-TV-203B	SS/SAMPLING SYSTEM ISOL	12050-FM-089B1/17/F5	AUX	259'	12/F	S R A,40	CLOSED OP/CL	YES	N/A	N/A
4268	2	08B	2-SS-TV-203B	SS/SAMPLING SYSTEM ISOL	12050-FM-089B1/17/F5	AUX	259'	12/F	R 1,40	CLOSED CLOSED	NO	N/A	N/A
4269	1, 2	07	2-HRS-TV-1622	SS/SAMPLING SYSTEM ISOL	11715-FM-108A1/03/E5	AUX	259'	--	-- --	CLOSED CLOSED	NO	N/A	N/A
4270	1, 2	08B	2-HRS-SOV-1622	SS/SAMPLING SYSTEM ISOL	11715-FM-108A1/03/E5	AUX	259'	--	R --	VENT VENT	NO	N/A	N/A
4271	1, 2	07	2-HRS-TV-1621	HRS/SAMPLING SYSTEM ISOL	12050-FM-089B1/17/F4	AUX	259'	10.5/L	S 24	CLOSED OPEN	NO	N/A	2-HRS-SOV-1621
4272	1, 2	08B	2-HRS-SOV-1621	HRS/SAMPLING SYSTEM ISOL PILOT	12050-FM-089B1/17/F4	AUX	259'	10.5/L	S R 24	VENT AIR	YES	N/A	INST AIR
4273	1, 2	21	2-SS-E-9	SS/RHR SAMPLE COOLER	12050-FM-089B1/17/E3	AUX	274'	9/K	S --	N/A N/A	NO	N/A	COMPONENT COOLING WATER
4274	1, 2	08A	2-RH-MOV-2720A	RH/RHR RETURN ISOL LOOP 2	12050-FM-094A2/14/C3	CONHT	226'	4.3	S R --	CLOSED OPEN	YES	N/A	N/A
4275	1, 2	08A	2-RH-MOV-2720B	RH/RHR RETURN ISOL LOOP 3	12050-FM-094A2/14/B3	CONHT	226'	4	S R --	CLOSED OPEN	YES	N/A	N/A
4276	1, 2	07	2-SI-HCV-2850D	SI/ACCUM TEST ISOL	12050-FM-096B2/16/B5	CONHT	221'	8.8	-- 22	CLOSED CLOSED	NO	12050-SI-024/2	N/A
4277	1, 2	08B	2-SI-SOV-2850D	SI/ACCUM TEST ISOL PILOT	12050-SI-024/2	CONHT	221'	8.8	R 22,36	VENT VENT	NO	12050-SI-024/2	2-SI-HCV-2850D
4278	1, 2	08A	2-SI-MOV-2865B	SI/ACCUM OUTLET ISOL	12050-FM-096B2/16/C6	CONHT	220'	9	S R 2,22	OPEN CLOSED	YES	N/A	2H12N
4278A	1, 2	R	2-SI-220	SI/ACCUM OUTLET MANUAL ISOL	12050-FM-096B2/16/C6	CONHT	220'	9	-- 15	OPEN CLOSED	NO	N/A	N/A
4279	1, 2	07	2-SI-HCV-2850F	SI/ACCUM TEST ISOL	12050-FM-096B3/17/B5	CONHT	221'	4	-- 22	CLOSED CLOSED	NO	12050-SI-026/2	N/A
4280	1, 2	08B	2-SI-SOV-2850F	SI/ACCUM TEST ISOL PILOT	12050-SI-026/2	CONHT	221'	4	R 22	VENT VENT	NO	12050-SI-026/2	N/A
4281	1, 2	08A	2-SI-MOV-2865C	SI/ACCUM OUTLET ISOL	12050-FM-096B3/17/C6	CONHT	220'	4.3	S R 2,22	OPEN CLOSED	YES	N/A	2J12N
4281A	1, 2	R	2-SI-222	SI/ACCUM OUTLET MANUAL ISOL	12050-FM-096B3/17/C6	CONHT	220'	4.3	-- 15	OPEN CLOSED	NO	N/A	N/A

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DANN W. JACOBS / ENGINEER

*D. Jacobs*  
Signature

MARCH 11, 1993

DAVID J. MERDER / ENGINEER

*D. Merder*  
Signature

MARCH 11, 1993

NORTH ANNA UNIT 2  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
DECAY HEAT REMOVAL FUNCTION  
(Sorted by Line Number)

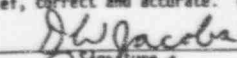
Data Base File Name/Date/Time: NA2\_SSEL.DBF / 03/11/93 / 09:30:38  
Sort Criteria: Line Number  
Filter Criteria: (Line Number >= '4000') AND (Line Number < '5000')  
Program File Name & Version: SSEL v9.0

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	EQUIPMENT Fir. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES		OP. ST.		POWER REQ'D	SUPPORTING SYS. DRG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS
								(10)	(11)	Normal	Desired			
4282	1, 2 23	2-RC-MOV-2590	RC/LOOP 1 HOT LEG ISOL	12050-FH-093A1/24/E4	CONTHT 256' C	--	--	1,37, 14	OPEN	OPEN	NO	N/A	N/A	
4283	1, 2 19	2-RC-TE-2413	RC/LOOP 1 HOT LEG TEMP (T-HOT)	12050-FH-093A1/24/E6	CONTHT 256' CA	2	S R	--	ON	ON	YES	12050-RC-119/11	N/A	
4284	1, 2 19	2-RC-TE-2410	RC/LOOP 1 COLD LEG TEMP (T-COLD)	12050-FH-093A1/24/C8	CONTHT 256' CA	10.7	S R	--	ON	ON	YES	12050-RC-116/9	N/A	
4284A	1, 2 19	2-RC-TR-2410	RC/LP1, CH1, HOT/COLD LEG TEMP	12050-RC-116, 119	SB 277'	CR	S R	--	ON	ON	YES	N/A	2-EI-CB-03	
4285	1, 2 23	2-RC-MOV-2591	RC/LOOP 1 COLD LEG ISOL	12050-FH-093A1/24/C8	CONTHT 256' C	--	--	1,37, 14	OPEN	OPEN	NO	N/A	N/A	
4286	1, 2 23	2-RC-MOV-2592	RC/LOOP 2 HOT LEG ISOL	12050-FH-093A2/24/E4	CONTHT 256' C	--	--	1,37, 14	OPEN	OPEN	NO	N/A	N/A	
4287	1, 2 19	2-RC-TE-2423	RC/LOOP 2 HOT LEG TEMP (T-HOT)	12050-FH-093A2/24/E6	CONTHT 256'	14	S R	--	ON	ON	YES	12050-RC-120/9	N/A	
4288	1, 2 19	2-RC-TE-2420	RC/LOOP 2 COLD LEG TEMP (T-COLD)	12050-FH-093A2/24/C8	CONTHT 256'	12.3	S R	--	ON	ON	YES	12050-RC-117/9	N/A	
4288A	1, 2 19	2-RC-TR-2420	RC/LOOP 2 WIDE RANGE HOT/COLD LEG TEMP	12050-RC-117, 120	SB 277'	CR	S R	--	ON	ON	YES	N/A	2-EI-CB-03	
4289	1, 2 23	2-RC-MOV-2593	RC/LOOP 2 COLD LEG ISOLATION VALVE	12050-FH-093A2/24/B5	CONTHT 256' C	--	--	1,37, 14	OPEN	OPEN	NO	N/A	N/A	
4290	1, 2 23	2-RC-MOV-2594	RC/LOOP 3 HOT LEG ISOLATION VALVE	12050-FH-093A3/26/E6	CONTHT 256' C	--	--	1,37, 14	OPEN	OPEN	NO	N/A	N/A	
4291	1, 2 19	2-RC-TE-2433	RC/LOOP 3 HOT LEG TEMPERATURE (T-HOT)	12050-FH-093A3/26/E5	CONTHT 256'	8	S R	--	ON	ON	YES	12050-RC-121/11	N/A	
4292	1, 2 19	2-RC-TE-2430	RC/LOOP 3 COLD LEG TEMPERATURE (T-COLD)	12050-FH-093A3/26/D2	CONTHT 256'	7.5	S R	--	ON	ON	YES	12050-RC-118/10	N/A	
4292A	1, 2 19	2-RC-TR-2430	RC/LOOP 3 WIDE RANGE HOT/COLD LEG TEMP	12050-FH-118, 121	SB 277'	CR	S R	--	ON	ON	YES	N/A	2-EI-CB-03	
4293	1, 2 23	2-RC-MOV-2595	RC/LOOP 3 COLD LEG ISOLATION VALVE	12050-FH-093A3/26/C6	CONTHT 256' C	--	--	1,37, 14	OPEN	OPEN	NO	N/A	N/A	

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAWN W. JACOBS / ENGINEER

  
Signature

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

  
Signature

MARCH 11, 1993

## Appendix F

## SUPPORTING SYSTEMS

The systems listed in this appendix each support more than one of the four safe shutdowns functions addressed in the preceding indices. The major functions addressed under this category of supporting systems are:

- Component cooling and decay heat sink systems,
- HVAC systems.

Another reason for listing these systems separately from the safe shutdown systems is that some of these systems are shared by both NAPS units and can be most effectively analyzed for inclusion in an SSEL by preparing the SSEL on a site rather than a plant basis. Emergency electrical power supplies are listed in Appendix G.

#### Component Cooling and Decay Heat Systems

The Component Cooling Water (CCW) System is designed to: (1) remove residual and sensible heat from the RCS, via the RHR loop, during plant cooldown; (2) provide cooling for various primary plant components.

The CCW system contains four CCW pumps and four CCW heat exchangers and is common to both units. The CCW flow path is shown on the flow diagrams. The components required for safe shutdown are shown in the SSEL.

During normal full power operation, one CCW pump and one CCW heat exchanger for each unit accommodate the heat removal loads for each unit. The standby pumps and heat exchangers provide 100% backup during normal operation. Two pumps and two heat exchangers are normally aligned to remove the residual and sensible heat during cooldown of a single unit.

The essential component cooling water loads, other than the residual heat exchangers, are normally open to the supply header. The cooling loads discharge to the suction of the CCW pump. Component cooling water is circulated continuously through the essential loads during normal operation. For safe shutdown, isolation of nonessential loads is not required as long as two pumps are available.

Two of the CCW pumps are powered from the Unit 1 4kV emergency buses and the other two from the Unit 2 4kV emergency buses. The CCW pump common discharge

header contains manually operated cross-connect valves. During normal operation the system is split between units.

The Service Water (SW) System is required to supply cooling to certain safe shutdown components which are utilized to achieve the four safe shutdown functions described in Appendices B through E.

Water is circulated through the heat exchangers that remove heat from the CCW System and Recirculation Spray System, as well as the air conditioning condensers.

The SW system flow path is shown on the flow diagrams. The components required for safe shutdown are listed in the SSEL.

### HVAC Systems

Several areas of the plant require ventilation during safe shutdown operations to protect electrical equipment from heat damage and allow access for operator actions. These areas are as follows:

- Control Room,
- Emergency Switchgear Rooms,
- Auxiliary Building,
- Main Steam Valve House,
- Service Water Pump House,
- Auxiliary Feedwater Pump House, and
- Emergency Diesel Generator Rooms.

The ventilation equipment required for safe shutdown is listed in the SSEL.

The containment air recirculation and the shroud cooling systems will not be available for containment cooling because of the loss of cooling water and dampers which would result should there be a loss of instrument air. Individuals requiring access to the containment within 72 hours after the seismic event, in order to manually operate equipment, should use ice vests.

The Control Room and Emergency Switchgear Rooms are cooled by air handling units located in these rooms. The air handling units are served by three chillers and their supporting equipment.

The Auxiliary Building ventilation system is divided into two systems. The central exhaust system provides ventilation for the charging pump cubicles and other centrally located cubicles. The general exhaust system serves the remainder of the building. The general exhaust fans are not emergency powered. The central exhaust fans must be operating to provide adequate ventilation to the critical areas of the Auxiliary Building.

As a result of the Appendix R evaluation, additional fans are stored on-site. These portable fans will assure continued operation of the pumps during shutdown.<sup>1</sup>

The required ventilation of the Service Water and Auxiliary Feedwater Pump Houses can be achieved by opening supply and exhaust dampers which can be operated locally. Use of these dampers, in conjunction with propping open doors in the building, provides adequate cooling in both areas.

The supply air dampers in the Emergency Diesel Generator Rooms are used to cool these areas.

The flowpaths for supporting systems are highlighted on the flow diagrams in Appendix N and safe shutdown equipment items in these flowpaths are listed on the SSEL provided in this Appendix. Supporting system SSEL items have line numbers from 5001 to 5999.

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<sup>1</sup>10CFR50, Appendix R Report, Sections 3.7.9 and 6.I-12, Revision 6.

NORTH ANNA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
SUPPORTING SYSTEMS  
(Sorted by Line Number)

Data Base File Name/Date/Time: NAI\_SSEL.DBF / 03/11/93 / 09:33:18  
Sort Criteria: Line Number  
Filter Criteria: (Line Number > '5000') AND (Line Number < '6000')  
Program File Name & Version: SSEL v0.0

LINE NO.	TRAIN	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Fir. Elev.	LOCATION Rm. or Row/Col.	OP. ST.	POWER SUPPORTING SYS.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	Normal	Desired	REQ'D	ENG. NO./REV.	(16)	
5001	1	05	1-CC-P-1A	CC/COMPONENT COOLING WATER PUMP	11715-FH-079A1/17/E7	AUX	247'	8.7/GH	S R 1	ON	ON	YES	N/A	N/A
5002	1	21	1-CC-E-1A	CC/COMPONENT COOLING WATER HX	11715-FH-079A1/17/E5	AUX	263'	8.5/F	S --	N/A	N/A	NO	N/A	N/A
5003	1	15	1-CC-FT-100A	CC/CCW HX OUTLET FLOW	11715-FH-079A1/17/E4	AUX	263'	8.5/F	S R --	ON	ON	YES	11715-CC-063/3	N/A
5004	1	20	1-CC-FI-100A	CC/CCW HX OUTLET FLOW	11715-FH-079A1/17/F4	SB	277'	CR	S R 36	ON	ON	YES	11715-CC-063/3	1-EI-CB-04
5005	1	05	1-CC-P-1B	CC/COMPONENT COOLING WATER PUMP	11715-FH-079A1/17/D7	AUX	247'	8.7/GH	S R 1	ON	ON	YES	N/A	N/A
5006	1	21	1-CC-E-1B	CC/COMPONENT COOLING WATER HX	11715-FH-079A1/17/D5	AUX	263'	8.5/F	S --	N/A	N/A	NO	N/A	N/A
5007	1	18	1-CC-FT-100B	CC/CCW HX OUTLET FLOW	11715-FH-079A1/17/D4	AUX	263'	8.5/F	S R --	ON	ON	YES	11715-CC-063/3	N/A
5008	1	20	1-CC-FI-100B	CC/CCW HX OUTLET FLOW	11715-FH-079A1/17/D4	SB	277'	CR	S R 36	ON	ON	YES	11715-CC-063/3	1-EI-CB-04
5009	1	19	1-CC-TE-100	CC/CCW HX OUTLET TEMP	11715-FH-079A1/17/D3	AUX	257'	8.3/G	S R --	ON	ON	YES	11715-CC-106/3	N/A
5010	1	20	1-CC-TI-100	CC/CCW HX OUTLET TEMP	11715-FH-079A1/17/D3	SB	277'	CR	S R 36	ON	ON	YES	11715-CC-106/3	1-EI-CB-04
5011	1	18	1-CC-PT-100	CC/CCW HX OUTLET PRESSURE	11715-FH-079A1/17/D3	AUX	245'	8.5/G	S R --	ON	ON	YES	11715-CC-059/6	N/A
5012	1	20	1-CC-PI-100	CC/CCW HX OUTLET PRESSURE	11715-FH-079A1/17/D3	SB	277'	CR	S R 36	ON	ON	YES	11715-CC-059/6	1-EI-CB-04
5016	1, 2	R	1-CC-310	CC/BORON STRIPPER MANUAL ISOL	11715-FH-079C1/13/E8	AUX	265'	7.3/G	-- 15	OPEN	CLOSED	NO	N/A	N/A
5017	1, 2	R	1-CC-859	CC/1(2)-CV-E-1B MANUAL ISOL	11715-FH-079C1/13/E3	AUX	274'	9.6/L	-- 15	OPEN	CLOSED	NO	N/A	N/A
5018	1, 2	R	1-CC-374	CC/SGRD HX MANUAL ISOL	11715-FH-079C1/13/E5	AUX	259'	8/G	-- 15	OPEN	CLOSED	NO	N/A	N/A
5019	1, 2	21	1-SS-E-5A	SS/GAS STRIPPER LIQUID EFFLUENT HX	11715-FH-079C2/13/E7	AUX	284'	9/K	S 23	N/A	N/A	NO	N/A	N/A
5020	1, 2	21	1-SS-E-5B	SS/GAS STRIPPER LIQUID EFFLUENT HX	11715-FH-079C2/13/D7	AUX	284'	9/K	S 23	N/A	N/A	NO	N/A	N/A
5023	1, 2	21	1-SS-E-3C	SS/LOOP 3 SGSD HX	11715-FH-079C2/13/F4	AUX	294'	9/K	S 23	N/A	N/A	NO	N/A	N/A
5024	1, 2	21	1-SS-E-3E	SS/LOOP 3 SGSD HX	11715-FH-079C2/13/E4	AUX	284'	9/K	S 23	N/A	N/A	NO	N/A	N/A
5025	1, 2	21	1-SS-E-3B	SS/LOOP 2 SGSD HX	11715-FH-079C2/13/E4	AUX	284'	9/K	S 23	N/A	N/A	NO	N/A	N/A
5026	1, 2	21	1-SS-E-3D	SS/LOOP 2 SGSD HX	11715-FH-079C2/13/D4	AUX	284'	9/K	S 23	N/A	N/A	NO	N/A	N/A
5027	1, 2	21	1-SS-E-3A	SS/LOOP 1 SGSD HX	11715-FH-079C2/13/C4	AUX	284'	9/K	S 23	N/A	N/A	NO	N/A	N/A
5028	1, 2	21	1-SS-E-3A	SS/LOOP 1 SGSD HX	11715-FH-079C2/13/C4	AUX	284'	9/K	S 23	N/A	N/A	NO	N/A	N/A

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition in this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAWN W. JACOBS / ENGINEER

*DW Jacobs*  
Signature

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

*DJ Werder*  
Signature

MARCH 11, 1993

NORTH ANNA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
SUPPORTING SYSTEMS  
(Sorted by Line Number)

Data Base File Name/Date/Time: NA1\_SSEL.DBF / 03/11/93 / 09:33:18  
Sort Criteria: Line Number  
Filter Criteria: (Line Number >= '5000') AND (Line Number < '6000')  
Program File Name & Version: SSEL v0.0

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	EQUIPMENT		LOCATION		SORT NOTES		OP. ST.		POWER REQ'd	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS
					Building	Fir. Elev.	Rm. or Row/Col.	(10)	(11)	Normal	Desired				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
5029	1, 2 21	1-SS-E-14	SS/SG SURFACE HX	11715-FM-079C2/13/E4 AUX	284'	9/K	S	23	N/A	N/A	NO	N/A	N/A	N/A	
5030	1, 2 21	2-SS-E-14	SS/SG SURFACE HX	11715-FM-079C2/13/B4 AUX	284'	9/K	S	23	N/A	N/A	NO	N/A	N/A	N/A	
5031	1, 2 R	1-CC-848	CC/1(2) CV-E-1B MANUAL ISOL	11715-FM-079C1/13/F3 AUX	274'	9.6/L	--	15	OPEN	CLOSED	NO	N/A	N/A	N/A	
5032	1, 2 R	1-CC-373	CC/BORON STRIPPER MANUAL ISOL	11715-FM-079C1/13/E5 AUX	265'	7.3/G	--	15	OPEN	CLOSED	NO	N/A	N/A	N/A	
5033	1, 2 R	1-CC-387	CC/SGRD HX MANUAL ISOL	11715-FM-079C1/13/C3 AUX	265'	7.6/G	--	15	OPEN	CLOSED	NO	N/A	N/A	N/A	
5034	1, 2 R	1-CC-273	CC/FUEL PIT COOLER MANUAL ISOL	11715-FM-079C3/13/E7 AUX	--	--	--	15	OPEN	CLOSED	NO	N/A	N/A	N/A	
5035	1, 2 R	1-CC-308	CC/FUEL PIT COOLER MANUAL ISOL	11715-FM-079C3/13/E4 AUX	--	--	--	15	OPEN	CLOSED	NO	N/A	N/A	N/A	
5036	1, 2 R	1-CC-458	CC/WST EVAP OH COND MANUAL ISOL	11715-FM-079C4/15/A6 AUX	259'	10/F	--	15	OPEN	CLOSED	NO	N/A	N/A	N/A	
5037	1, 2 R	1-CC-491	CC/BORON EVAP DIST COOLER MANUAL ISOL	11715-FM-079C4/15/D5 AUX	274'	10.5/M	--	15	OPEN	CLOSED	NO	N/A	N/A	N/A	
5038	1, 2 R	1-CC-473	CC/BORON EVAP DIST COOLER MANUAL ISOL	11715-FM-079C4/15/D5 AUX	274'	10/E	--	15	OPEN	CLOSED	NO	2/A	N/A	N/A	
5039	1, 2 R	1-CC-490	CC/BORON EVAP DIST COOLER MANUAL ISOL	11715-FM-079C4/15/F8 AUX	266'	10/G	--	15	OPEN	CLOSED	NO	N/A	N/A	N/A	
5040	1, 2 R	1-CC-508	CC/BORON EVAP DIST COOLER MANUAL ISOL	11715-FM-079C4/15/F8 AUX	259'	10/G	--	15	OPFN	CLOSED	NO	N/A	N/A	N/A	
5041	1, 2 R	1-CC-472	CC/BORON EVAP DIST COOLER MANUAL ISOL	11715-FM-079C4/15/A8 AUX	268'	10/G	--	15	OPEN	CLOSED	NO	N/A	N/A	N/A	
5042	1, 2 R	1-CC-410	CC/BORON EVAP PUMPS MANUAL ISOL	11715-FM-079C5/18/B8 AUX	244'	10/G	--	15	OPEN	CLOSED	NO	N/A	N/A	N/A	
5043	1, 2 R	1-CC-455	CC/BORON EVAP PUMPS MANUAL ISOL	11715-FM-079C5/18/A3 AUX	244'	10/G	--	15	OPEN	CLOSED	NO	N/A	N/A	N/A	
5047	1, 2 21	1-CC-TK-1	CC/CC SURGE TANK	11715-FM-079A1/17/E6 AUX	298'	9/F	S	--	N/A	N/A	NO	N/A	N/A	N/A	
5048	1, 2 R	1-CC-843	CC/CC SURGE TANK TO LIQUID WASTE MANUAL ISOL	11715-FM-079A1/17/D6 AUX	291'	8.3/G	--	3	CLOSED	CLOSED	NO	N/A	N/A	N/A	
5049	1, 2 18	1-CC-LT-101	CC/CC SURGE TANK LEVEL	11715-FM-079A1/17/D7 AUX	298'	9/F	S R	--	ON	ON	YES	11715-CC-057/B	N/A	N/A	
5050	1, 2 20	1-CC-L1-101-1	CC/CC SURGE TANK LEVEL	11715-FM-079A1/17/D7 SB	277'	CR	S R	--	ON	ON	YES	11715-CC-057/B	N/A	N/A	
5051	1, 2 20	1-CC-L1-101-2	CC/CC SURGE TANK LEVEL	11715-FM-079A1/17/D7 SB	277'	CR	S R	--	ON	ON	YES	11715-CC-057/B	N/A	N/A	

CERTIFICATION:

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DANN W. JACOBS / ENGINEER

*D W Jacobs*  
Signature

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

*D J Werder*  
Signature

MARCH 11, 1993

NORTH ANMA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
SUPPORTING SYSTEMS  
(Sorted by Line Number)

Data Base File Name/Date/Time: MA1\_SSEL.DBF / 03/11/93 / 09:33:18  
Sort Criteria: 1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16  
Filter Criteria: (Line Numbers) AND (Line Numbers < 6000)  
Program File Name & Version: SSEL V0.0

LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	Flr.-Elev.	EQUIPMENT LOCATION	SOB	NOTES	OP. ST.	POWER SUPPORTING SYS.	REQ'D INTERCONNECTIONS			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
5052	1	2	1-CC-11-101-3	CC/CC SURGE TANK LEVEL	11715-FM-07981/17/07 SB	277'	CR	S R	--	ON	ON	YES	11715-CC-057/8	N/A	
5053	3	21	1-HV-E-6A	HV/SURROD COOLING COILS	11715-FM-07982/21/FS CONTINT	276'	1	S	23	N/A	N/A	NO	11715-HV-272/2	N/A	
													VIMS 24648:		
													11715-FM-1B		
5065	3	21	1-HV-E-6B	HV/SURROD COOLING COILS	11715-FM-07983/20/FS CONTINT	275'	13	S	23	N/A	N/A	NO	VIMS 25115	N/A	
													11715-FM-1B		
5077	3	21	1-HV-E-6C	HV/SURROD COOLING COILS	11715-FM-07984/21/FS CONTINT	277'	8	S	23	N/A	N/A	NO	VIMS25680-25690	N/A	
													11715-FM-1B		
5086	1	19	1-CC-TE-101A	CC/CCM PUMPS SUCTION HEADER TEMP	11715-FM-07981/17/CT AUX	257'	8.5/N	S R	--	ON	ON	YES	11715-CC-099/3	N/A	
5087	1	20	1-CC-11-101A	CC/CCM PUMPS SUCTION HEADER TEMP	11715-FM-07981/17/CT SB	277'	CR	S R	36	ON	ON	YES	11715-CC-099/3	1-EI-CB-04	
5087A	1	19	1-CC-TE-101B	CC/CCM PUMPS SUCTION HEADER TEMP	11715-FM-07981/17/CT AUX	257'	8.5/N	S R	--	ON	ON	YES	11715-CC-107/5	N/A	
5087B	1	20	1-CC-11-101B	CC/CCM PUMPS SUCTION HEADER TEMP	11715-FM-07981/17/CT SB	277'	CR	S R	36	ON	ON	YES	11715-CC-107/5	1-EI-CB-04	
5087C	1	20	1-CC-11-201B	CC/CCM PUMPS SUCTION HEADER TEMP	11715-FM-07981/17/CT SB	277'	CR	S R	36	ON	ON	YES	11715-CC-107/5	2-EI-CB-04	
5088	1	18	1-CC-FT-132A	CC/CC HX FLOW TO RHR HX	11715-FM-07981/21/FS CONTINT	216'	7	S R	--	ON	ON	YES	11715-CC-110/5	N/A	
5089	1	20	1-CC-F1-132A-1	CC/CC HX FLOW TO RHR HX	11715-FM-07981/21/FS SB	277'	CR	S R	36	ON	ON	YES	11715-CC-110/5	1-EI-CB-04	
5091	1	08A	1-CC-HOV-100A	CC/RHR HX OUTLET CONTROL VALVE	11715-FM-07981/21/83 CONTINT	243'	7	S R	17	CLOSED	OPEN	YES	N/A	N/A	
5092	1	07	1-CC-TV-103A	CC/RHR HX OUTLET CONTROL ISOL	11715-FM-07981/21/A7 AUX	252'	7/L	--	A,27	OPEN	OPEN	NO	11715-CC-081/4	1-CC-SOV-103A	
5092	1	07	1-CC-TV-103A	CC/RHR HX OUTLET CONTROL ISOL	11715-FM-07981/21/A7 AUX	252'	7/L	S	1,27	OPEN	CLOSED	NO	11715-CC-081/4	1-CC-SOV-103A	
5093	1	08B	1-CC-SOV-103A	CC/RHR HX OUTLET CONTROL ISOL PILOT	11715-FM-07981/21/B7 AUX	252'	7/L	S R	1,27	AIR	VENT	NO	11715-CC-081/4	N/A	
5093	1	08B	1-CC-SOV-103A	CC/RHR HX OUTLET CONTROL ISOL PILOT	11715-FM-07981/21/B7 AUX	252'	7/L	R	A,27	AIR	AIR	YES	11715-CC-081/4	N/A	
5094	1	19	1-CC-TE-149A	CC/RHR HX COOLING WATER OUTLET TEMP	11715-FM-07981/21/AG AUX	254'	7/RL	S R	--	ON	ON	YES	11715-CC-100/3	N/A	
5095	1	20	1-CC-11-149A	CC/RHR HX COOLING WATER OUTLET TEMP	11715-FM-07981/21/AG SB	277'	CR	S R	36	ON	ON	YES	11715-CC-100/3	1-EI-CB-04	
5096	1	18	1-CC-FT-132B	CC/CC HX FLOW TO RHR HX	11715-FM-07981/21/FS CONTINT	214'	A 4.5	S R	--	ON	ON	YES	11715-CC-111/6:	N/A	
													11715-FR-1B		

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAWN V. JACOBS / ENGINEER

*Dawn V. Jacobs*  
Signature

MARCH 11, 1993

DAVID J. WEDDER / ENGINEER

*David J. Wedder*  
Signature

MARCH 11, 1993



NORTH AHMA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
SUPPORTING SYSTEMS  
(Sorted by Line Number)

Data Base File Name/Date/Time: NAI\_SSEL.DBF / 03/11/93 / 09:33:16  
Sort Criteria: Line Number  
Filter Criteria: (Line Number >= '5000') AND (Line Number < '6000')  
Program File Name & Version: SSEN v0.0

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elv.	LOCATION Rm. or Row/Col.	SORT	NOTES	GP. Normal	ST. Desired	POWER REQ'D	SUPPORTING SYS. Dwg. No./REV.	REQ'D INTERCONNECTI/NS & SUPPORTING COMPONENTS	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
5097	1	20	1-CC-FI-132B-1	CC/CC HX FLOW TO RHR HX	11715-FM-07981/21/F5	5B	277'	CR	S R 36	ON	ON	YES	11715-CC-111/6	1-EI-CB-64	
5099	1	08A	1-CC-MOV-100B	CC/RHR HX OUTLET CONTROL VALVE	11715-FM-07981/21/A3	CONTMT	243'	7	S R 17	CLOSED	OPEN	YES	N/A	N/A	
5100	2	07	1-CC-TV-103B	CC/RHR HX OUTLET CONTMT ISOL	11715-FM-07981/21/B7	AUX	252'	7/L	S I,27	OPEN	CLOSED	NO	11715-CC-082/4	1-CC-SOV-103B	
5100	1	07	1-CC-TV-103B	CC/RHR HX OUTLET CONTMT ISOL	11715-FM-07981/21/B7	AUX	252'	7/L	-- A,27	OPEN	OPEN	NO	11715-CC-082/4	1-CC-SOV-103B	
5101	2	08B	1-CC-SOV-103B	CC/RHR HX OUTLET CONTMT ISOL PILOT	11715-FM-07981/21/C7	AUX	252'	7/L	S R I,27	AIR	VENT	NO	11715-CC-082/4	N/A	
5101	1	08B	1-CC-SOV-103B	CC/RHR HX OUTLET CONTMT ISOL PILOT	11715-FM-07981/21/C7	AUX	252'	7/L	R A,27	AIR	AIR	YES	11715-CC-082/4	N/A	
5102	1	19	1-CC-TE-149B	CC/RHR HX COOLING WATER OUTLET TEMP	11715-FM-07981/21/C7	AUX	254'	7/XL	S R --	ON	ON	YES	11715-CC-101/4	N/A	
5103	1	20	1-CC-TI-149B	CC/RHR HX COOLING WATER OUTLET TEMP	11715-FM-07981/21/C7	5B	277'	CR	S R 36	ON	ON	YES	11715-CC-101/4	1-EI-CB-04	
5104	1	21	1-SS-E-34	SS/SAMPLE COOLER	11715-FM-07981/21/E8	AUX	274'	9/X	S 23	N/A	N/A	NO	N/A	N/A	
5105	1	21	1-SS-E-35	SS/SAMPLE COOLER	11715-FM-07981/21/E8	AUX	274'	9/X	S 23	N/A	N/A	NO	N/A	N/A	
5106	1	21	1-SS-E-36	SS/SAMPLE COOLER	11715-FM-07981/21/E8	AUX	274'	9/X	S 23	N/A	N/A	NO	N/A	N/A	
5107	1, 2	R	1-CC-629	CC/SGBD VENT CONDENSER MANUAL ISOL	11715-FM-079A3/14/B5	AUX	291'	7.8/G	-- 15	OPEN	CLOSED	NO	N/A	N/A	
5108	1, 2	R	1-CC-634	CC/SGBD VENT CONDENSER MANUAL ISOL	11715-FM-079A3/14/C5	AUX	291'	7.7/G	-- 15	OPEN	CLOSED	NO	N/A	N/A	
5108A	1	R	1-CC-67	CC/NONREGEN HX CC MANUAL ISOL	11715-FM-079A3/14/E7	AUX	259'	9/L	-- 15	OPEN	CLOSED	NO	N/A	N/A	
5108B	1	R	1-CC-74	CC/NONREGEN HX CC MANUAL ISOL	11715-FM-079A3/14/E6	AUX	259'	9/L	-- 15	OPEN	CLOSED	NO	N/A	N/A	
5111	1	21	1-DG-E-1	DG/PRIMARY DRAIN TRANSFER COOLER	11715-FM-07985/21/A6	CONTMT	226'	5	S 23	N/A	N/A	NO	11715-FM-001D	N/A	
5116	1	21	1-HS-E-1A	HS/NEUTRON SHIELD TANK COOLER	11715-FM-07985/21/A7	CONTMT	262'	15	S 23	N/A	N/A	NO	N/A	N/A	
5117	1	21	1-HS-E-1B	HS/NEUTRON SHIELD TANK COOLER	11715-FM-07985/21/E5	CONTMT	262'	15	S 23	N/A	N/A	NO	N/A	N/A	
5118	1	19	1-CC-TE-150A	CC/RHR PUMP SEAL COOLER OUTLET TEMP	11715-FM-07985/21/C4	CONTMT	237'	6	S R --	ON	ON	YES	11715-CC-023/3	N/A	
5119	1	19	1-CC-TE-150B	CC/RHR PUMP SEAL COOLER OUTLET TEMP	11715-FM-07985/21/B4	CONTMT	237'	6	S R --	ON	ON	YES	11715-CC-024/3	N/A	

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DANN W. JACOBS / ENGINEER

*Dann W. Jacobs*  
Signature

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

*David J. Werder*  
Signature

MARCH 11, 1993

NORTH AREA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 SUPPORTING SYSTEMS  
 (Sorted by Line Number)

Data Base File Name/Date/Time: NA1\_SSEL.DBF / 03/11/93 / 09:31:18  
 Sort Criteria: Line Number  
 Filter Criteria: (Line Number >= '5000') AND (Line Number < '6000')  
 Program File Name & Version: SSEL v0.0

LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Equipment Bulletin	LOCATION	Sort Notes	Normal	Desired	REQ'D INTERCONNECTIONS					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
5119A	1	07	1-MS-LCV-101	MS/NEUTRON SHIELD SURGE TANK OUTLET ISOL	11715-FH-07985/21/03	CONTINT	262'	14	--	--	CLOSED	CLOSED	NO	N/A	N/A
5119B	1	08B	1-MS-SOV-101	MS/NEUTRON SHIELD SURGE TANK OUTLET ISOL PILOT	11715-FH-07985/21/03	CONTINT	262'	14	R	34	VERT	VERT	NO	11715-MS-001	N/A
5159	1	06	1-SW-P-1A	SW/SERVICE WATER PUMP A	11715-FH-078A3/28/07	SWPH	328'	--	S R	--	RUNNING	RUNNING	YES	N/A	N/A
5160	2	06	1-SW-P-1B	SW/SERVICE WATER PUMP B	11715-FH-078A3/28/05	SWPH	328'	--	S R	--	OFF	RUNNING	YES	N/A	N/A
5161	1	06	2-SW-P-1A	SW/SERVICE WATER PUMP A	11715-FH-078A3/28/04	SWPH	328'	--	S R	--	RUNNING	RUNNING	YES	N/A	N/A
5162	2	06	2-SW-P-1B	SW/SERVICE WATER PUMP B	11715-FH-078A3/28/03	SWPH	328'	--	S R	--	OFF	RUNNING	YES	N/A	N/A
5163	1	18	1-SW-PT-101A	SW/SW PUMP DISCHARGE PRESSURE	11715-FH-078A3/28/06	SWPH	328'	--	S R	--	ON	ON	YES	11715-SW-027/6	N/A
5164	1	20	1-SW-PT-101A	SW/SW PUMP DISCHARGE PRESSURE	11715-FH-078A3/28/06	SB	277'	CR	S R	36	OFF	ON	YES	11715-SW-027/6	1-EI-CB-05
5165	2	18	1-SW-PT-101B	SW/SW PUMP DISCHARGE PRESSURE	11715-FH-078A3/28/05	SWPH	328'	--	S R	--	OFF	ON	YES	11715-SW-028/6	N/A
5166	2	20	1-SW-PT-101B	SW/SW PUMP DISCHARGE PRESSURE	11715-FH-078A3/28/05	SB	277'	CR	S R	36	OFF	ON	YES	11715-SW-028/6	1-EI-CB-05
5167	1	18	2-SW-PT-201A	SW/SW PUMP DISCHARGE PRESSURE	11715-FH-078A3/28/04	SWPH	328'	--	S R	--	ON	ON	YES	12050-SW-012/3	N/A
5168	1	20	2-SW-PT-201A	SW/SW PUMP DISCHARGE PRESSURE	11715-FH-078A3/28/04	SB	277'	CR	S R	36	ON	ON	YES	12050-SW-012/3	1-EI-CB-05
5169	2	18	2-SW-PT-201B	SW/SW PUMP DISCHARGE PRESSURE	11715-FH-078A3/28/03	SWPH	329'	--	S R	--	OFF	ON	YES	12050-SW-013/3	N/A
5170	2	20	2-SW-PT-201B	SW/SW PUMP DISCHARGE PRESSURE	11715-FH-078A3/28/03	SB	277'	CR	S R	36	OFF	ON	YES	12050-SW-013/3	1-EI-CB-05
5170A	1	R	1-SW-1139	SW/CHEM ADD SYS ISOL	11715-FH-078A3/28/07	SWPH	270'	--	--	15	OPEN	CLOSED	NO	N/A	N/A
5170B	1	R	1-SW-1067	SW/CHEM ADD SYS ISOL	11715-FH-078A3/28/07	SWPH	265'	--	--	15	OPEN	CLOSED	NO	N/A	N/A
5170C	1	R	1-SW-1070	SW/CHEM ADD SYS ISOL	11715-FH-078A3/28/07	SWPH	270'	--	--	15	OPEN	CLOSED	NO	N/A	N/A
5171	1	08A	1-SW-MOV-115A	SW/AUX SW PUMP ISOL	11715-FH-078A1/26/06	SWPH	254'	8.S/C	R	11	CLOSED	CLOSED	NO	N/A	N/A
5172	1	08A	2-SW-MOV-215A	SW/AUX SW PUMP ISOL	11715-FH-078A1/26/07	SWPH	254'	8.S/C	R	11	CLOSED	CLOSED	NO	N/A	N/A
5175	2	08A	1-SW-MOV-101A	SW/UNIT 1 RECIRC SPRAY HX ISOL	11715-FH-078A4/43/03	QSPH	265'	NOTE JK	S R	--	CLOSED	OPEN	YES	N/A	1-EP-AC-19
5176	1	08A	1-SW-MOV-101B	SW/UNIT 1 RECIRC SPRAY HX ISOL	11715-FH-078A4/43/03	QSPH	265'	NOTE JK	S R	--	CLOSED	OPEN	YES	N/A	1-EP-AC-21
5177	2	08A	1-SW-MOV-101C	SW/UNIT 1 RECIRC SPRAY HX ISOL	11715-FH-078A4/43/03	QSPH	265'	NOTE JK	S R	--	CLOSED	OPEN	YES	N/A	1-EP-AC-19

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAVID W. JACOBS / ENGINEER

*David W. Jacobs*  
 Signature

MARCH 11, 1993

DAVID J. VERDER / ENGINEER

*David J. Verder*  
 Signature

MARCH 11, 1993

NORTH ANNA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
SUPPORTING SYSTEMS  
(Sorted by Line Number)

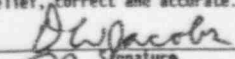
Data Base File Name/Date/Time: NA1\_SSEL.DBF / 03/11/93 / 09:33:18  
Sort Criteria: Line Number  
Filter Criteria: (Line Number >= '5000') AND (Line Number < '6000')  
Program File Name & Version: SSEM v0.0

LINE NO.	TRAIN CLASS	EQUIP MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Deg. No./Rev./Zone	Building	EQUIPMENT Fir.Elv.	LOCATION Rm. or Row/Col.	SORT NOTES		OP. ST.		POWER REQD?	SUPPORTING SYS. ENG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS
								(10)	(11)	Normal	Desired			
(1)	(2)	(3)	(4)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
5178	1	OBA	1-SW-MOV-101D	SW/UNIT 1 RECIRC SPRAY HX ISOL	11715-FH-078A4/43/B3	QSPH	265'	NOTE 1K	S R --	CLOSED	OPEN	YES	N/A	1-EP-MC-21
5178A	2	OBA	1-SW-MOV-103A	SW/RECIRC SPRAY COOLER A INLET ISOL	11715-FH-078B1/20/E3	QSPH	265'	--	R --	OPEN	OPEN	NO	N/A	N/A
5178B	2	OBA	1-SW-MOV-103B	SW/RECIRC SPRAY COOLER B INLET ISOL	11715-FH-078B1/20/E4	QSPH	265'	--	R --	OPEN	OPEN	NO	N/A	N/A
5178C	2	OBA	1-SW-MOV-103C	SW/RECIRC SPRAY COOLER C INLET ISOL	11715-FH-078B1/20/E6	QSPH	265'	--	R --	OPEN	OPEN	NO	N/A	N/A
5178D	2	OBA	1-SW-MOV-103D	SW/RECIRC SPRAY COOLER D INLET ISOL	11715-FH-078B1/20/E7	QSPH	265'	--	R --	OPEN	OPEN	NO	N/A	N/A
5179	1	OBA	1-SW-MOV-105A	SW/RECIRC SPRAY COOLER A OUTLET ISOL	11715-FH-078A4/43/C3	QSPH	265'	NOTE 1K	R A	CLOSED	CLOSED	NO	N/A	N/A
5179	1	OBA	1-SW-MOV-105A	SW/RECIRC SPRAY COOLER A OUTLET ISOL	11715-FH-078A4/43/C3	QSPH	265'	NOTE 1K	S R I	CLOSED	OPEN	YES	N/A	1-EP-MC-19
5180	1	OBA	1-SW-MOV-105B	SW/RECIRC SPRAY COOLER B OUTLET ISOL	11715-FH-078A4/43/C3	QSPH	265'	NOTE 1K	R A	CLOSED	CLOSED	NO	N/A	N/A
5180	1	OBA	1-SW-MOV-105B	SW/RECIRC SPRAY COOLER B OUTLET ISOL	11715-FH-078A4/43/C3	QSPH	265'	NOTE 1K	S R I	CLOSED	OPEN	YES	N/A	1-EP-MC-21
5181	1	OBA	1-SW-MOV-105C	SW/RECIRC SPRAY COOLER C OUTLET ISOL	11715-FH-078A4/43/C3	QSPH	265'	NOTE 1K	R A	CLOSED	CLOSED	NO	N/A	N/A
5181	1	OBA	1-SW-MOV-105C	SW/RECIRC SPRAY COOLER C OUTLET ISOL	11715-FH-078A4/43/C3	QSPH	265'	NOTE 1K	S R I	CLOSED	OPEN	YES	N/A	1-EP-MC-19
5182	1	OBA	1-SW-MOV-105D	SW/RECIRC SPRAY COOLER D OUTLET ISOL	11715-FH-078A4/43/C3	QSPH	265'	NOTE 1P	R A	CLOSED	CLOSED	NO	N/A	N/A
5182	1	OBA	1-SW-MOV-105D	SW/RECIRC SPRAY COOLER D OUTLET ISOL	11715-FH-078A4/43/C3	QSPH	265'	NOTE 1P	S R I	CLOSED	OPEN	YES	N/A	1-EP-MC-21
5183A	1	20	1-E1-CB-202	E1/EMERG SMGR RM DG ISOL PANEL (H-TRAIN)	11715-FE-027A/22/E4	SB	254'	7/D	S R 6,41	N/A	N/A	YES	N/A	N/A
5201	1	OBA	1-SW-MOV-110A	SW/UNIT 1 RECIRC AIR COOLING COIL ISOL	11715-FH-078A4/43/D4	SB	265'	--	R --	CLOSED	CLOSED	NO	N/A	N/A

CERTIFICATION:


The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DANN W. JACOBS / ENGINEER

  
Signature

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

  
Signature

MARCH 11, 1993

NORTH ANNA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
SUPPORTING SYSTEMS  
(Sorted by Line Number)

Data Base File Name/Date/Time: NAI\_SSEL.DBF / 03/11/93 / 09:33:18  
Sort Criteria: Line Number  
Filter Criteria: (Line Number >= '5000') AND (Line Number < '6000')  
Program File Name & Version: SSEN v0.0

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	EQUIPMENT		LOCATION		SORT	NOTES	OP. ST.		POWER REQD?	SUPPORTING SYS. ENG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS
					Building	Fir. Elev.	Rm. or Row/Col.	Normal			Desired				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
5202	1	08A	1-SW-MOV-110B	SW/UNIT 1 RECIRC AIR COOLING COIL ISOL	11715-FM-078A4/43/D4 SB	265'	--		R	--	CLOSED	CLOSED	NO	N/A	N/A
5203	1	08A	1-SW-MOV-114A	SW/UNIT 1 RECIRC AIR COOLING COIL ISOL	11715-FM-078A4/43/D4 SB	265'	--		R	--	CLOSED	CLOSED	NO	N/A	N/A
5204	1	08A	1-SW-MOV-114B	SW/UNIT 1 RECIRC AIR COOLING COIL ISOL	11715-FM-078A4/43/D4 SB	265'	--		R	--	CLOSED	CLOSED	NO	N/A	N/A
5205	2	07	1-SW-TV-101A	SW/UNIT 1 RECIRC AIR COOLING COIL ISOL	11715-FM-078A4/43/D4 SB	265'	5.5/GA		--	--	CLOSED	CLOSED	NO	11715-SW-037/7	N/A
5206	2	08B	1-SW-SOV-101A-1	SW/UNIT 1 RECIRC AIR COOLING COIL ISOL PILOT	11715-FM-078A4/43/D4 SB	265'	5.5/GA		R	--	VENT	VENT	NO	11715-SW-037/7	N/A
5207	2	06B	1-SW-SOV-101A-2	SW/UNIT 1 RECIRC AIR COOLING COIL ISOL PILOT	11715-FM-078A4/43/D4 SB	265'	5.5/GA		R	--	VENT	VENT	NO	11715-SW-037/7	N/A
5208	2	07	1-SW-TV-101B	SW/UNIT 1 RECIRC AIR COOLING COIL ISOL	11715-FM-078A4/43/D4 SB	265'	5.5/GA		--	--	CLOSED	CLOSED	NO	11715-SW-038/7	N/A
5209	2	08B	1-SW-SOV-101B-1	SW/UNIT 1 RECIRC AIR COOLING COIL ISOL PILOT	11715-FM-078A4/43/D4 SB	265'	5.5/GA		R	--	VENT	VENT	NO	11715-SW-038/7	N/A
5210	2	08B	1-SW-SOV-101B-2	SW/UNIT 1 RECIRC AIR COOLING COIL ISOL PILOT	11715-FM-078A4/43/D4 SB	265'	5.5/GA		R	--	VENT	VENT	NO	11715-SW-038/7	N/A
5211	1	08A	2-SW-MOV-201A	SW/UNIT 2 RECIRC SPRAY HX ISOL	11715-FM-078A4/43/E7 QSPH	256'	--		S	R	CLOSED	OPEN	YES	N/A	2-EP-MC-19
5212	2	08A	2-SW-MOV-201B	SW/UNIT 2 RECIRC SPRAY HX ISOL	11715-FM-078A4/43/E7 QSPH	256'	--		S	R	CLOSED	OPEN	YES	N/A	2-EP-MC-21
5213	1	08A	2-SW-MOV-201C	SW/UNIT 2 RECIRC SPRAY HX ISOL	11715-FM-078A4/43/E7 QSPH	256'	--		S	R	CLOSED	OPEN	YES	N/A	2-EP-MC-19
5214	2	08A	2-SW-MOV-201D	SW/UNIT 2 RECIRC SPRAY HX ISOL	11715-FM-078A4/43/E7 QSPH	256'	--		S	R	CLOSED	OPEN	YES	N/A	2-EP-MC-21
5214A	2	08A	2-SW-MOV-203A	SW/RECIRC SPRAY COOLER A INLET ISOL	11715-FM-078B3/21/E7 QSPH	265'	--		R	--	OPEN	OPEN	NO	N/A	N/A
5214B	2	08A	2-SW-MOV-203B	SW/RECIRC SPRAY COOLER B INLET ISOL	11715-FM-078B3/21/E6 QSPH	265'	--		R	--	OPEN	OPEN	NO	N/A	N/A
5214C	2	08A	2-SW-MOV-203C	SW/RECIRC SPRAY COOLER C INLET ISOL	11715-FM-078B3/21/E5 QSPH	265'	--		R	--	OPEN	OPEN	NO	N/A	N/A

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DANN W. JACOBS / ENGINEER

*D. W. Jacobs*  
Signature

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

*D. J. Werder*  
Signature

MARCH 11, 1993

NORTH ANNA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
SUPPORTING SYSTEMS  
(Sorted by Line Number)

Data Base File Name/Date/Time: NA1\_SSEL.DBF / 03/11/93 / 09:33:18  
Sort Criteria: Line Number  
Filter Criteria: (Line Number >= '5000') AND (Line Number < '6000')  
Program File Name & Version: SSEL v0.0

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	EQUIPMENT		LOCATION		SORT	NOTES	OP. ST.		POWER REQD?	SUPPORTING SYS. ENG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	
					Building	Fir. Elev.	Rm. or Row/Col.	Normal			Desired					
(1)	(2)	(3)	(4)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)		
52140	2	OBA	2-SW-MOV-203D	SW/RECIRC SPRAY COOLER D INLET ISOL	11715-FM-07883/21/E3	QSPH	265'	--	R	--	OPEN	OPEN	NO	N/A	N/A	
5215	1	OBA	2-SW-MOV-205A	SW/UNIT 2 RECIRC SPRAY HX ISOL	11715-FM-078A4/43/E7	QSPH	256'	--	R	A	CLOSED	CLOSED	NO	N/A	N/A	
5215	1	OBA	2-SW-MOV-205A	SW/UNIT 2 RECIRC SPRAY HX ISOL	11715-FM-078A4/43/E7	QSPH	256'	--	S	R	I	CLOSED	OPEN	YES	N/A	2-EP-MC-19
5216	2	OBA	2-SW-MOV-205B	SW/UNIT 2 RECIRC SPRAY HX ISOL	11715-FM-078A4/43/E7	QSPH	256'	--	R	A	CLOSED	CLOSED	NO	N/A	N/A	
5216	2	OBA	2-SW-MOV-205B	SW/UNIT 2 RECIRC SPRAY HX ISOL	11715-FM-078A4/43/E7	QSPH	256'	--	S	R	I	CLOSED	OPEN	YES	N/A	2-EP-MC-21
5217	1	OBA	2-SW-MOV-205C	SW/UNIT 2 RECIRC SPRAY HX ISOL	11715-FM-078A4/43/E7	QSPH	256'	--	R	A	CLOSED	CLOSED	NO	N/A	N/A	
5217	1	OBA	2-SW-MOV-205C	SW/UNIT 2 RECIRC SPRAY HX ISOL	11715-FM-078A4/43/E7	QSPH	256'	--	S	R	I	CLOSED	OPEN	YES	N/A	2-EP-MC-19
5218	2	OBA	2-SW-MOV-205D	SW/UNIT 2 RECIRC SPRAY HX ISOL	11715-FM-078A4/43/E7	QSPH	256'	--	R	A	CLOSED	CLOSED	NO	N/A	N/A	
5218	2	OBA	2-SW-MOV-205D	SW/UNIT 2 RECIRC SPRAY HX ISOL	11715-FM-078A4/43/E7	QSPH	256'	--	S	R	I	CLOSED	OPEN	YES	N/A	2-EP-MC-21
5219	1	OBA	2-SW-MOV-210A	SW/UNIT 2 RECIRC AIR COOLING COIL ISOL	11715-FM-078A4/43/F8	QSPH	--	--	R	--	CLOSED	CLOSED	NO	N/A	N/A	
5220	1	OBA	2-SW-MOV-210B	SW/UNIT 2 RECIRC AIR COOLING COIL ISOL	11715-FM-078A4/43/F8	QSPH	--	--	R	--	CLOSED	CLOSED	NO	N/A	N/A	
5221	1	OBA	2-SW-MOV-214A	SW/UNIT 2 RECIRC AIR COOLING COIL ISOL	11715-FM-078A4/43/F8	QSPH	--	--	R	--	CLOSED	CLOSED	NO	N/A	N/A	
5222	1	OBA	2-SW-MOV-214B	SW/UNIT 2 RECIRC AIR COOLING COIL ISOL	11715-FM-078A4/43/F8	QSPH	--	--	R	--	CLOSED	CLOSED	NO	N/A	N/A	
5229	1	OS	1-SW-P-10	SW/RADIATION MONITORING PUMP	11715-FM-078A4/42/E3	TB	254'	--	R	I	OFF	OFF	NO	N/A	N/A	
5230	1	OBA	2-SW-MOV-220A	SW/RADIATION MONITORING PUMP OUTLET ISOL	11715-FM-078A4/43/F3	TB	254'	--	R	--	CLOSED	CLOSED	NO	N/A	N/A	
5231	1	OBA	2-SW-MOV-220B	SW/RADIATION MONITORING PUMP OUTLET ISOL	11715-FM-078A4/43/F3	TB	254'	--	R	--	CLOSED	CLOSED	NO	N/A	N/A	
5232	1	OBA	1-SW-MOV-113A	SW/CCW FUEL PIT COOLERS ISOL	11715-FM-078A4/43/B7	AUX	244'	B.3/F	R	--	CLOSED	CLOSED	NO	N/A	N/A	
5233	1	OBA	2-SW-MOV-213A	SW/CCW FUEL PIT COOLERS ISOL	11715-FM-078A4/43/B7	AUX	--	--	R	--	CLOSED	CLOSED	NO	N/A	N/A	
5234	1	OBA	1-SW-MOV-113B	SW/CCW FUEL PIT COOLERS ISOL	11715-FM-078A4/43/B5	AUX	244'	B.7/F	R	--	CLOSED	CLOSED	NO	N/A	N/A	

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAWN W. JACOBS / ENGINEER

*Dawn W. Jacobs*  
Signature

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

*David J. Werder*  
Signature

MARCH 11, 1993

NORTH ANGA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
SUPPORTING SYSTEMS  
(Sorted by Line Number)

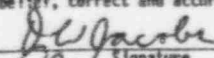
Data Base File Name/Date/Time: HA1\_SSEL.DBF / 03/11/93 / 09:33:18  
Sort Criteria: Line Number  
Filter Criteria: (Line Number >= '5000') AND (Line Number < '6000')  
Program File Name & Version: SSEL v0.0

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	PLMER REQD?	SUPPORTING SYS. ING. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	
5235	1	08A	2-SW-MOV-213B	SW/CCW FUEL PIT COOLERS ISOL	11715-FM-078A4/43/B5	AUX	244'	9.5/F	R	--	CLOSED	CLOSED	NO	N/A	N/A
5236	1	0	1-CH-PSC-1A1*	CH/CHARGING PUMP 1A SEAL COOLER 1	11715-FM-078G1/12/D3	AUX	245'	9.5/J	S	--	N/A	N/A	NO	N/A	N/A
5237	1	0	1-CH-PSC-1A2*	CH/CHARGING PUMP 1A SEAL COOLER 2	11715-FM-078G1/12/D3	AUX	245'	9.5/J	S	--	N/A	N/A	NO	N/A	N/A
5238	1	0	1-CH-PGBC-1A*	CH/CHARGING PUMP 1A GEAR BOX COOLER	11715-FM-078G1/12/D3	AUX	245'	9.5/J	S	--	N/A	N/A	NO	N/A	N/A
5239	1	18	1-SW-FS-102A	SW/CCP SEAL & GEAR BOX COOLER FLOW	11715-FM-078G1/12/D2	AUX	244'	8/K	S R	--	ON	ON	YES	11715-SW-080/2	N/A
5240	1	0	1-CH-PSC-1B1*	CH/CHARGING PUMP 1B SEAL COOLER 1	11715-FM-078G1/12/D5	AUX	245'	9.5/J	S	--	N/A	N/A	NO	N/A	N/A
5241	1	0	1-CH-PSC-1B2*	CH/CHARGING PUMP 1B SEAL COOLER 2	11715-FM-078G1/12/D5	AUX	245'	9.5/J	S	--	N/A	N/A	NO	N/A	N/A
5242	1	0	1-CH-PGBC-1B*	CH/CHARGING PUMP 1B GEAR BOX COOLER	11715-FM-078G1/12/D5	AUX	245'	9.5/J	S	--	N/A	N/A	NO	N/A	N/A
5243	1	18	1-SW-FS-102B	SW/CCP SEAL & GEAR BOX COOLER FLOW	11715-FM-078G1/12/D7	AUX	244'	8.5/K	S R	--	ON	ON	YES	11715-SW-081/2	N/A
5244	1	0	1-CH-PSC-1C1*	CH/CHARGING PUMP 1C SEAL COOLER 1	11715-FM-078G1/12/D7	AUX	245'	9.5/J	S	--	N/A	N/A	NO	N/A	N/A
5245	1	0	1-CH-PSC-1C2*	CH/CHARGING PUMP 1C SEAL COOLER 2	11715-FM-078G1/12/D7	AUX	245'	9.5/J	S	--	N/A	N/A	NO	N/A	N/A
5246	1	0	1-CH-PGBC-1C*	CH/CHARGING PUMP 1C GEAR BOX COOLER	11715-FM-078G1/12/D7	AUX	245'	9.5/J	S	--	N/A	N/A	NO	N/A	N/A
5247	1	18	1-SW-FS-102C	SW/CCP SEAL & GEAR BOX COOLER FLOW	11715-FM-078G1/12/D7	AUX	244'	9/K	S R	--	ON	ON	YES	11715-SW-082/2	N/A
5248	1	0	2-CH-PSC-2A1*	CH/CHARGING PUMP 2A SEAL COOLER 1	11715-FM-078G2/10/D3	AUX	245'	9.5/J	S	--	N/A	N/A	NO	N/A	N/A
5249	1	0	2-CH-PSC-2A2*	CH/CHARGING PUMP 2A SEAL COOLER 2	11715-FM-078G2/10/D3	AUX	245'	9.5/J	S	--	N/A	N/A	NO	N/A	N/A
5250	1	0	2-CH-PGBC-2A*	CH/CHARGING PUMP 2A GEAR BOX COOLER	11715-FM-078G2/10/D3	AUX	245'	9.5/J	S	--	N/A	N/A	NO	N/A	N/A
5251	1	18	2-SW-FS-202A	SW/CCP SEAL & GEAR BOX COOLER FLOW	11715-FM-078G2/10/D7	AUX	248'	9/K	S R	--	ON	ON	YES	12050-SW-04*/2	N/A
5252	1	0	2-CH-PSC-2B1*	CH/CHARGING PUMP 2B SEAL COOLER 1	11715-FM-078G2/10/D5	AUX	245'	9.5/J	S	--	N/A	N/A	NO	N/A	N/A
5253	1	0	2-CH-PSC-2B2*	CH/CHARGING PUMP 2B SEAL COOLER 2	11715-FM-078G2/10/D5	AUX	245'	9.5/J	S	--	N/A	N/A	NO	N/A	N/A
5254	1	0	2-CH-PGBC-2B*	CH/CHARGING PUMP 2B GEAR BOX COOLER	11715-FM-078G2/10/D5	AUX	245'	9.5/J	S	--	N/A	N/A	NO	N/A	N/A

CERTIFICATION:

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DAWN W. JACOBS / ENGINEER

  
Signature

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

  
Signature

MARCH 11, 1993

NORTH AHA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
SUPPORTING SYSTEMS  
(Sorted by Line Number)

Data Base File Name/Date/Time: NA1\_SSEL.DBF / 03/11/93 / 09:33:18  
Sort Criteria: Line Number  
Filter Criteria: (Line Number >= '5000') AND (Line Number < '6000')  
Program File Name & Version: SSEM v0.0

LINE NO.	TRAIN CLASS	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Fir. Elev.	LOCATION Re. or Row/Col.	SORT	NOTES	OP. ST.		POWER REQ'D?	SUPPORTING SYS. DNG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS
											Normal	Desired			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
5255	1	18	2-SW-FS-202B	SM/CCP SEAL & GEAR BOX COOLER FLOW	11715-FM-078G2/10/D7	AUX	248'	9/K	S R	--	ON	ON	YES	12050-SW-047/2	N/A
5256	1	0	2-CH-PSC-2C1*	CH/CHARGING PUMP 2C SEAL COOLER 1	11715-FM-078G2/10/D7	AUX	245'	10/J	S	--	N/A	N/A	NO	N/A	N/A
5257	1	0	2-CH-PSC-2C2*	CH/CHARGING PUMP 2C SEAL COOLER 2	11715-FM-078G2/10/D7	AUX	245'	10/J	S	--	N/A	N/A	NO	N/A	N/A
5258	1	0	2-CH-PGBC-2C*	CH/CHARGING PUMP 2C GEAR BOX COOLER	11715-FM-078G2/10/D7	AUX	245'	10/J	S	--	N/A	N/A	NO	N/A	N/A
5259	1	18	2-SW-FS-202C	SM/CCP SEAL & GEAR BOX COOLER FLOW	11715-FM-078G2/10/D7	AUX	248'	9/K	S R	--	ON	ON	YES	12050-SW-048/2	N/A
5260	1	18	1-SW-FT-109A	SM/CCP SEAL & GEAR BOX COOLER FLOW	11715-FM-078G1/12/B2	AUX	247'	8/H	S	--	N/A	N/A	NO	11715-SW-086/1	N/A
5261	1	18	1-SW-FT-109B	SM/CCP SEAL & GEAR BOX COOLER FLOW	11715-FM-078G1/12/A2	AUX	247'	8.5/F	S	--	N/A	N/A	NO	11715-SW-087/1	N/A
5261A	1	R	1-SW-266	SM/IA COMP ISOL	11715-FM-078C2/27/E7	AUX	259'	9.5/J	--	15	OPEN	CLOSED	NO	N/A	N/A
5261B	1	R	1-SW-273	SM/IA COMP ISOL	11715-FM-078C2/27/D7	AUX	259'	9.5/J	--	15	OPEN	CLOSED	NO	N/A	N/A
5261C	1	R	2-SW-205	SM/IA COMP ISOL	11715-FM-078C2/27/E3	AUX	--	--	--	15	OPEN	CLOSED	NO	N/A	N/A
5261D	1	R	2-SW-212	SM/IA COMP ISOL	11715-FM-078C2/27/D3	AUX	--	--	--	15	OPEN	CLOSED	NO	N/A	N/A
5282	1	21	1-CH-E-5A	CH/CCP LUBE OIL COOLER	11715-FM-078G1/12/D4	AUX	244'	8/K	S	--	N/A	N/A	NO	11715-SW-070/1	OIL
5283	1	21	1-CH-E-5B	CH/CCP LUBE OIL COOLER	11715-FM-078G1/12/D5	AUX	244'	8.5/K	S	--	N/A	N/A	NO	11715-SW-071/1	OIL
5284	1	21	1-CH-E-5C	CH/CCP LUBE OIL COOLER	11715-FM-078G1/12/D8	AUX	244'	9/K	S	--	N/A	N/A	NO	11715-SW-072/1	OIL
5285	1	07	1-SW-TCV-102A	SM/CCP LUBE OIL COOLER CONTROL	11715-FM-078G1/12/D4	AUX	244'	8/K	--	--	OPEN	OPEN	NO	11715-SW-070/1	N/A
5286	1	07	1-SW-TCV-102B	SM/CCP LUBE OIL COOLER CONTROL	11715-FM-078G1/12/D6	AUX	244'	8.5/K	--	--	OPEN	OPEN	NO	11715-SW-071/1	N/A
5287	1	07	1-SW-TCV-102C	SM/CCP LUBE OIL COOLER CONTROL	11715-FM-078G1/12/D8	AUX	244'	9/K	--	--	OPEN	OPEN	NO	11715-SW-072/1	N/A
5288	1	18	1-SW-TIC-102A	SM/CCP LUBE OIL COOLER CONTROL	11715-FM-078G1/12/D4	AUX	244'	8/K	S R	--	ON	ON	YES	11715-SW-070/1	N/A
5289	1	18	1-SW-TIC-102B	SM/CCP LUBE OIL COOLER CONTROL	11715-FM-078G1/12/D6	AUX	244'	8.5/K	S R	--	ON	ON	YES	11715-SW-071/1	N/A
5290	1	18	1-SW-TIC-102C	SM/CCP LUBE OIL COOLER CONTROL	11715-FM-078G1/12/D8	AUX	244'	9/K	S R	--	ON	ON	YES	11715-SW-072/1	N/A
5294	1	19	1-SW-TE-103A	SM/CCP LUBE OIL COOLER CONTROL	11715-SW-007/6	AUX	246'	8.2/J	S R	--	ON	ON	YES	N/A	N/A
5295	1	19	1-SW-TE-103B	SM/CCP LUBE OIL COOLER CONTROL	11715-SW-008/6	AUX	246'	8.5/J	S R	--	ON	ON	YES	N/A	N/A

CERTIFICATION:

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DAWN W. JACOBS / ENGINEER

*DW Jacobs*  
Signature

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

*DJ Werder*  
Signature

MARCH 11, 1993

LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr./Elev.	LOCATION Ra. or Row/Col.	Normal	Desired	OP. ST.	POWER SUPPORTING SYS. REQ'D INTERCONNECTIONS				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
5296	1	19	1-SW-TE-103C	SW/CCP LUBE OIL COOLER CONTROL	11715-SW-009/6	AUX	246'	9/J	S R --	ON	ON	YES	N/A	N/A	N/A
5297	1	18	1-SW-TI-103A	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-07861/12/04	AUX	246'	0.2/J	S R 36	ON	ON	YES	11715-SW-007/6	1-CH-P-1A	
5298	1	18	1-SW-TI-103B	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-07861/12/06	AUX	246'	0.3/J	S R 36	ON	ON	YES	11715-SW-008/6	1-CH-P-1B	
5299	1	18	1-SW-TI-103C	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-07861/12/08	AUX	246'	9/J	S R 36	ON	ON	YES	11715-SW-009/6	1-CH-P-1C	
5300	1	18	1-SW-TSH-103A	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-07861/12/04	SB	252'	6.5/D	S R --	ON	ON	YES	N/A	N/A	
5301	1	18	1-SW-TSH-103B	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-07861/12/06	SB	252'	6.5/D	S R --	ON	ON	YES	N/A	N/A	
5302	1	18	1-SW-TSH-103C	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-07861/12/08	SB	252'	6.5/D	S R --	ON	ON	YES	N/A	N/A	
5303	1	20	1-SW-TI-103A	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-07861/12/04	SB	277'	CR	S R 36	ON	ON	YES	11715-SW-007/6	1-EI-CB-05	
5304	1	20	1-SW-TI-103B	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-07861/12/06	SB	277'	CR	S R 36	ON	ON	YES	11715-SW-008/6	1-EI-CB-05	
5305	1	20	1-SW-TI-103C	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-07861/12/08	SB	277'	CR	S R 36	ON	ON	YES	11715-SW-009/6	1-EI-CB-05	
5306	1	21	2-CH-E-5A	CH/CCP LUBE OIL COOLER	11715-FM-07862/10/04	AUX	244'	9.2/K	S --	N/A	N/A	NO	12050-SW-034/2	OIL	
5307	1	21	2-CH-E-5B	CH/CCP LUBE OIL COOLER	11715-FM-07862/10/06	AUX	244'	9.5/K	S --	N/A	N/A	NO	12050-SW-035/2	OIL	
5308	1	21	2-CH-E-5C	CH/CCP LUBE OIL COOLER	11715-FM-07862/10/08	AUX	244'	10/K	S --	N/A	N/A	NO	12050-SW-036/2	OIL	
5309	1	07	2-SW-TCV-202A	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-07862/10/04	AUX	244'	9.2/K	--	OPEN	OPEN	NO	12050-SW-034/2	N/A	
5310	1	07	2-SW-TCV-202B	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-07862/10/06	AUX	244'	9.5/K	--	OPEN	OPEN	NO	12050-SW-035/2	N/A	
5311	1	07	2-SW-TCV-202C	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-07862/10/08	AUX	244'	10/K	--	OPEN	OPEN	NO	12050-SW-036/2	N/A	
5312	1	18	2-SW-TIC-202A	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-07862/10/04	AUX	244'	9.2/K	S R --	ON	ON	YES	12050-SW-034/2	N/A	
5313	1	18	2-SW-TIC-202B	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-07862/10/06	AUX	244'	9.5/K	S R --	ON	ON	YES	12050-SW-035/2	N/A	
5314	1	18	2-SW-TIC-202C	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-07862/10/08	AUX	244'	10/K	S R --	ON	ON	YES	12050-SW-036/2	N/A	
5318	1	19	2-SW-TE-203A	SW/CCP LUBE OIL COOLER CONTROL	12050-SW-022/5	AUX	246'	9/J	S R --	ON	ON	YES	N/A	N/A	
5319	1	19	2-SW-TE-203B	SW/CCP LUBE OIL COOLER CONTROL	12050-SW-023/5	AUX	246'	9.5/J	S R --	ON	ON	YES	N/A	N/A	
5320	1	19	2-SW-TE-203C	SW/CCP LUBE OIL COOLER CONTROL	12050-SW-024/5	AUX	246'	10/J	S R --	ON	ON	YES	N/A	N/A	
5321	1	18	2-SW-TI-203A	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-07862/10/04	AUX	246'	9/J	S R --	ON	ON	YES	12050-SW-022/5	N/A	

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAWN W. JACOBS / ENGINEER

*Dawn W. Jacobs*  
 Signature

MARCH 11, 1993

DAVID J. WEDDER / ENGINEER

*David J. Wedder*  
 Signature

MARCH 11, 1993



NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 SUPPORTING SYSTEMS  
 (Sorted by Line Number)

Data Base File Name/Date/Time: NA1\_SSEL.DBF / 03/11/93 / 09:33:18  
 Sort Criteria: Line Number  
 Filter Criteria: (Line Number >= '5000') AND (Line Number <= '6000')  
 Program File Name & Version: SSEL V0.0

LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Ftr. Elev.	LOCATION Rm. or Row/Col.	Sort Notes	OP. ST. Normal	Desired	REQ'D	DMG. NO./REV.	SUPPORTING COMPONENTS		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
5322	1	18	2-SW-TT-203B	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G2/10/06	AUX	246'	9-5/3	S R --	ON	ON	YES	12050-SW-023/5	N/A	
5323	1	18	2-SW-TT-203C	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G2/10/08	AUX	246'	10/J	S R --	ON	ON	YES	12050-SW-024/5	N/A	
5324	1	18	2-SW-TSH-203A	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G2/10/04	SB	252'	11/0	S R --	ON	ON	YES	N/A	N/A	
5325	1	18	2-SW-TSH-203B	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G2/10/06	SB	252'	11/0	S R --	ON	ON	YES	N/A	N/A	
5326	1	18	2-SW-TSH-203C	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G2/10/08	SB	252'	6/0	S R --	ON	ON	YES	N/A	N/A	
5327	1	20	2-SW-TI-203A	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G2/10/04	SB	277'	CR	S R --	ON	ON	YES	12050-SW-022/5	N/A	
5328	1	20	2-SW-TI-203B	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G2/10/06	SB	277'	CR	S R --	ON	ON	YES	12050-SW-023/5	N/A	
5329	1	20	2-SW-TI-203C	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G2/10/08	SB	277'	CR	S R --	ON	ON	YES	12050-SW-024/5	N/A	
5330	1	19	1-SW-TE-106	SW/SM HEADER TO VALVE HOUSE TEMP	11715-FM-078H/04/E6	SHPH	321'	NOTE 1F	S R --	ON	ON	YES	11715-SW-048/5	JB-5104; JB-5072	
5331	1	20	1-SW-TI-106A	SW/SM HEADER TO VALVE HOUSE TEMP	11715-FM-078H/04/E6	SB	277'	CR	S R 36	ON	ON	YES	11715-SW-048/5	1-EI-CB-05	
5332	1	20	1-SW-TI-106B	SW/SM HEADER TO VALVE HOUSE TEMP	11715-FM-078H/04/E6	SB	277'	CR	S R 36	ON	ON	YES	11715-SW-048/5	2-EI-CB-05	
5333	1	19	1-SW-TE-107	SW/SM HEADER TO VALVE HOUSE TEMP	11715-FM-078H/04/E7	SHPH	326'	NOTE 1G	S R --	ON	ON	YES	11715-SW-047/5	JB-5102; JB-1534	
5334	1	20	1-SW-TI-107A	SW/SM HEADER TO VALVE HOUSE TEMP	11715-FM-078H/04/E7	SB	277'	CR	S R 36	ON	ON	YES	11715-SW-047/5	1-EI-CB-05	
5335	1	20	1-SW-TI-107B	SW/SM HEADER TO VALVE HOUSE TEMP	11715-FM-078H/04/E7	SB	277'	CR	S R 36	ON	ON	YES	11715-SW-047/5	2-EI-CB-05	
5336	1	16	1-SW-FI-110	SW/SM HEADER TO VALVE HOUSE FLOW	11715-FM-078H/04/05	SHPH	320'	NOTE 1H	S R --	ON	ON	YES	11715-SW-096/1	F-SW103; JB-5102; JB-1534	
5338	1	20	1-SW-FI-110A	SW/SM HEADER TO VALVE HOUSE FLOW	11715-FM-078H/04/05	SB	277'	CR	S R 36	ON	ON	YES	11715-SW-096/1	1-EI-CB-05	
5339	1	20	1-SW-FI-110B	SW/SM HEADER TO VALVE HOUSE FLOW	11715-FM-078H/04/05	SB	277'	CR	S R 36	ON	ON	YES	11715-SW-096/1	2-EI-CB-05	
5340	1	18	1-SW-FI-103	SW/SM RETURN HEADER FLOW	11715-SW-096/1	SHPH	320'	NOTE 1I	S R --	ON	ON	YES	11715-SW-011/8	N/A	
5340A	1	20	1-SW-FI-103A	SW/SM RETURN HEADER FLOW	11715-FM-078H/04/06	SB	277'	CR	S R --	ON	ON	YES	N/A	N/A	
5340B	1	20	1-SW-FI-103B	SW/SM RETURN HEADER FLOW	11715-FM-078H/04/06	SB	277'	CR	S R --	ON	ON	YES	N/A	N/A	
5342	1	18	1-SW-FI-111	SW/SM HEADER TO VALVE HOUSE FLOW	11715-FM-078H/04/08	SHPH	316'	NOTE 1H	S R --	ON	ON	YES	11715-SW-097/1	F-SW104; JB-5102; JB-1534	
5344	1	20	1-SW-FI-111A	SW/SM HEADER TO VALVE HOUSE FLOW	11715-FM-078H/04/08	SB	277'	CR	S R 36	ON	ON	YES	11715-SW-097/1	1-EI-CB-05	
5345	1	20	1-SW-FI-111B	SW/SM HEADER TO VALVE HOUSE FLOW	11715-FM-078H/04/08	SB	277'	CR	S R 36	ON	ON	YES	11715-SW-097/1	2-EI-CB-05	

CERTIFICATION

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

MARCH 11, 1993

DAWN W. JACOBS / ENGINEER

*Dawn W. Jacobs*  
 Signature

DAVID J. WERDER / ENGINEER

MARCH 11, 1993

*David J. Werder*  
 Signature

NORTH AREA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
SUPPORTING SYSTEMS  
(Sorted by Line Number)

Data Base File Name/Date/Time: NA1\_SSEL.DBF / 03/11/93 / 09:33:18  
Sort Criteria: Line Number  
Filter Criteria: (Line Number >= '5000') AND (Line Number < '6000')  
Program File Name & Version: SSEM v0.0

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. Dwg. No./Rev.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10) (11)	(12)	(13)	(14)	(15)	(16)
5346	1	18	1-SW-FT-104	SW/SW RETURN HEADER FLOW	11715-FM-078H/04/D7	SWVH	320'	IRR #1	S R --	ON	ON	YES	11715-SW-010/B	N/A
5346A	1	20	1-SW-FI-104A	SW/SW RETURN HEADER FLOW	11715-FM-078H/04/D7	SB	277'	CR	S R --	ON	ON	YES	N/A	N/A
5346B	1	20	1-SW-FI-104B	SW/SW RETURN HEADER FLOW	11715-FM-078H/04/D7	SB	277'	CR	S R --	ON	ON	YES	N/A	N/A
5347	1	08A	1-SW-MOV-123A	SW/SW RESERVOIR ISOL	11715-FM-078H/04/E4	SWVH	326'	--	R --	OPEN	OPEN	NO	N/A	N/A
5349	1	08A	2-SW-MOV-223B	SW/SW RESERVOIR ISOL	11715-FM-078H/04/D4	SWVH	326'	--	R --	OPEN	OPEN	NO	N/A	N/A
5350	1	08A	1-SW-MOV-123B	SW/SW RESERVOIR ISOL	11715-FM-078H/04/E8	SWVH	326'	--	R --	OPEN	OPEN	NO	N/A	N/A
5351	1	08A	2-SW-MOV-223A	SW/SW RESERVOIR ISOL	11715-FM-078H/04/D8	SWVH	326'	--	R --	OPEN	OPEN	NO	N/A	N/A
5353	1	08A	2-SW-MOV-221A	SW/SW TO ARRAYS	11715-FM-078H/04/C8	SWVH	326'	--	R --	OPEN	OPEN	NO	N/A	N/A
5354	1	08A	2-SW-MOV-222A	SW/SW TO ARRAYS	11715-FM-078H/04/C7	SWVH	326'	--	R --	OPEN	OPEN	NO	N/A	N/A
5355	1	08A	1-SW-MOV-121B	SW/SW TO ARRAYS	11715-FM-078H/04/C7	SWVH	326'	--	R --	OPEN	OPEN	NO	N/A	N/A
5356	1	08A	1-SW-MOV-122B	SW/SW TO ARRAYS	11715-FM-078H/04/C6	SWVH	326'	--	R --	OPEN	OPEN	NO	N/A	N/A
5357	1	08B	1-SW-SOV-110A	SW/SW TO SLMP ISOL	11715-FM-078H/04/C6	SWVH	326'	--	R --	CLOSED	CLOSED	NO	N/A	N/A
5358	1	08A	1-SW-MOV-121A	SW/SW TO ARRAYS	11715-FM-078H/04/C5	SWVH	326'	--	R --	OPEN	OPEN	NO	N/A	N/A
5359	1	08A	1-SW-MOV-122A	SW/SW TO ARRAYS	11715-FM-078H/04/C5	SWVH	326'	--	R --	OPEN	OPEN	NO	N/A	N/A
5360	1	08A	2-SW-MOV-221B	SW/SW TO ARRAYS	11715-FM-078H/04/C4	SWVH	326'	--	R --	OPEN	OPEN	NO	N/A	N/A
5361	1	08A	2-SW-MOV-222B	SW/SW TO ARRAYS	11715-FM-078H/04/C4	SWVH	326'	--	R --	OPEN	OPEN	NO	N/A	N/A
5362	1	08B	2-SW-SOV-210B	SW/SW TO SLMP ISOL	11715-FM-078H/04/C3	SWVH	--	--	R --	CLOSED	CLOSED	NO	N/A	N/A
5363	1	08A	1-SW-MOV-108A	SW/CC HX INLET ISOL	11715-FM-078C1/32/A4	AUX	244'	--	R --	OPEN	OPEN	NO	N/A	N/A
5364	1	08A	1-SW-MOV-108B	SW/CC HX INLET ISOL	11715-FM-078C1/32/A4	AUX	244'	--	R --	OPEN	OPEN	NO	N/A	N/A
5365	1	08A	2-SW-MOV-208A	SW/CC HX INLET ISOL	11715-FM-078C1/32/A4	AUX	244'	9.3/F	R --	OPEN	OPEN	NO	N/A	N/A
5366	1	08A	2-SW-MOV-208B	SW/CC HX INLET ISOL	11715-FM-078C1/32/A4	SWVH	--	--	R --	OPEN	OPEN	NO	N/A	N/A
5367	1	20	2-SW-TI-205B	SW/CC HX INLET TEMP	11715-FM-078C1/32/E8	SB	277'	CR	S R --	ON	ON	YES	N/A	N/A
5368	1	20	2-SW-TI-205A	SW/CC HX INLET TEMP	11715-FM-078C1/32/E7	SB	277'	CR	S R --	ON	ON	YES	N/A	N/A

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAWN W. JACOBS / ENGINEER

*Dawn W. Jacobs*  
Signature

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

*David J. Werder*  
Signature

MARCH 11, 1993

NORTH ANNA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
SUPPORTING SYSTEMS  
(Sorted by Line Number)

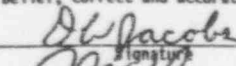
Data Base File Name/Date/Time: NA1\_SSEL.DBF / 03/11/93 / 09:33:18  
Sort Criteria: Line Number  
Filter Criteria: (Line Number >= '5000') AND (Line Number < '6000')  
Program File Name & Version: SSEM v0.0

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr./Elev.	LOCATION Rm. or Row/Col.	OP. ST.	POWER SUPPORTING SYS.	REQ'D INTERCONNECTIONS					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
5369	1	20	1-SW-TI-105B	SW/CC HX INLET TEMP	11715-FM-078C1/32/E6	SB	277'	CR	S R --	ON	ON	YES	N/A		JB-5102;JB-5134
5370	1	20	1-SW-TI-105A	SW/CC HX INLET TEMP	11715-FM-078C1/32/E5	SB	277'	CR	S R --	ON	ON	YES	N/A		N/A
5371	1	20	2-SW-TI-207B	SW/CC HX OUTLET TEMP	11715-FM-078C1/32/E7	SB	277'	CR	S R --	ON	ON	YES	N/A		N/A
5372	1	20	2-SW-TI-207A	SW/CC HX OUTLET TEMP	11715-FM-078C1/32/E6	SB	277'	CR	S R --	ON	ON	YES	N/A		N/A
5373	1	20	1-SW-TI-114B	SW/CC HX OUTLET TEMP	11715-FM-078C1/32/E6	SB	277'	CR	S R --	ON	ON	YES	N/A		N/A
5374	1	20	1-SW-TI-114A	SW/CC HX OUTLET TEMP	11715-FM-078C1/32/E5	SB	277'	CR	S R --	ON	ON	YES	N/A		N/A
5377	1	20	1-EI-CB-01	EI/BENCH BOARD 1-1	11715-FE-027B/33/4	SB	277'	CR	S R --	N/A	N/A	YES	N/A		N/A
5378	1	20	1-EI-CB-02	EI/BENCH BOARD 1-2	11715-FE-027B/33/4	SB	277'	CR	S R --	N/A	N/A	YES	N/A		N/A
5379	1	20	1-EI-CB-03	EI/VERTICAL BOARD 1-1	11715-FE-027B/33/4	SB	277'	CR	S R --	N/A	N/A	YES	N/A		N/A
5380	1	20	1-EI-CB-04	EI/VERTICAL BOARD 1-2	11715-FE-027B/33/4	SB	277'	CR	S R --	N/A	N/A	YES	N/A		N/A
5381	1	20	1-EI-CB-05	EI/VERTICAL BOARD 1-3	11715-FE-027B/33/4	SB	277'	CR	S R --	N/A	N/A	YES	N/A		N/A
5382	1	20	1-EI-CB-06A	EI/AUXILIARY SHUTDOWN PANEL	11715-FE-027A/22/A3	SB	254'	B/CD	S R --	N/A	N/A	YES	N/A		N/A
5383	1	20	1-EI-CB-06B	EI/AUXILIARY SHUTDOWN PANEL	11715-FE-027A/22/A3	SB	254'	B/CD	S R --	N/A	N/A	YES	N/A		N/A
5384	1	20	1-EI-CB-18A	EI/COMPUTER I/O CABINET 00	11715-FE-027B/33/5	SB	277'	COMP #2	S R --	N/A	N/A	YES	N/A		N/A
5385	1	20	1-EI-CB-18B	EI/COMPUTER I/O CABINET 01	11715-FE-027B/33/5	SB	277'	COMP #2	S R --	N/A	N/A	YES	N/A		N/A
5386	1	20	1-EI-CB-18C	EI/COMPUTER I/O CABINET 02	11715-FE-027B/33/5	SB	277'	COMP #2	S R --	N/A	N/A	YES	N/A		N/A
5387	1	20	1-EI-CB-21	EI/CONTROL PANEL	11715-FE-027B/33/6	SB	277'	LOGIC	S R --	N/A	N/A	YES	N/A		N/A
5388	1	20	1-EI-CB-21A	EI/CONTROL PANEL	DWG NOT AVAILABLE	SW	252'	B.4/D	S R --	N/A	N/A	YES	N/A		N/A
5389	1	20	1-EI-CB-23A	EI/PROCESS CABINET A	11715-FE-004A/22	SB	252'	IRR #1	S R 41	N/A	N/A	YES	N/A		N/A
5390	1	20	1-EI-CB-23B	EI/PROCESS CABINET B	11715-FE-004B/26	SB	252'	IRR #1	S R 41	N/A	N/A	YES	N/A		N/A
5391	1	20	1-EI-CB-23C	EI/PROCESS CABINET C	11715-FE-004C/24	SB	252'	IRR #1	S R 41	N/A	N/A	YES	N/A		N/A
5392	1	20	1-EI-CB-23D	EI/PROCESS CABINET D	11715-FE-004D/27	SB	252'	IRR #1	S R 41	N/A	N/A	YES	N/A		N/A
5393	1	20	1-EI-CB-23E	EI/PROCESS CABINET E	11715-FE-004E/18	SB	252'	IRR #1	S R 41	N/A	N/A	YES	N/A		N/A

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DANN W. JACOBS / ENGINEER

  
Signature

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

  
Signature

MARCH 11, 1993

NORTH ANNA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
SUPPORTING SYSTEMS  
(Sorted by Line Number)

Data Base File Name/Date/Time: NA1\_SSEL.DBF / 03/11/93 / 09:33:18  
Sort Criteria: Line Number  
Filter Criteria: (Line Number > '5000') AND (Line Number < '6000')  
Program File Name & Version: SSEM v0.0

LINE NO.	TRAIN	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	EQUIPMENT		LOCATION	SORT	NOTES	OP. ST.		POWER REQD?	SUPPORTING DWG. NO./REV.	SYS. & SUPPORTING COMPONENTS	REQ'D INTERCONNECTIONS
						Building	Fir. Elev.				Normal	Desired				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	
5394	1	20	1-EI-CB-25	EI/CONTROL PANEL	11715-FE-027B/33/4	SB	277'	LOGIC	S R	--	N/A	N/A	YES	N/A	N/A	
5395	1	20	1-EI-CB-300	EI/CONTROL PANEL	DWG. NOT AVAILABLE	SB	277'	8.8/D	S R	--	N/A	N/A	YES	N/A	N/A	
5396	1	20	1-EI-CB-301C	EI/CONTROL PANEL	11715-FE-027A/22	SW	252'	5.2/DE	S R	--	N/A	N/A	YES	N/A	N/A	
5397	1	20	1-EI-CB-34	EI/POST ACCIDENT MONITORING & CONTROL PANEL	11715-FE-027B/33/4	SB	277'	CR	S R	--	N/A	N/A	YES	N/A	N/A	
5398	1	20	1-EI-CB-44	EI/PROCESS CABINET F	11715-FE-004G/21	SB	252'	IRR 01	S R	41.42	N/A	N/A	YES	N/A	N/A	
5399	1	20	1-EI-CB-47A	EI/SOLID STATE PROTECTION INPUT CABINET (TRAIN A)	11715-1.31 SERIES	SB	252'	IRR 01	S R	41	N/A	N/A	YES	N/A	N/A	
5400	1	20	1-EI-CB-47B	EI/SOLID STATE PROTECTION INPUT CABINET (TRAIN B)	11715-1.31 SERIES	SB	252'	IRR 01	S R	41	N/A	N/A	YES	N/A	N/A	
5401	1	20	1-EI-CB-47C	EI/SOLID STATE PROTECTION LOGIC CABINET (TRAIN A)	11715-1.31 SERIES	SB	252'	IRR 01	S R	41	N/A	N/A	YES	N/A	N/A	
5402	1	20	1-EI-CB-47D	EI/SOLID STATE PROTECTION LOGIC CABINET (TRAIN B)	11715-1.31 SERIES	SB	252'	IRR 01	S R	41	N/A	N/A	YES	N/A	N/A	
5403	1	20	1-EI-CB-47E	EIP/SOLID STATE PROTECTION OUTPUT CABINET (TRAIN A)	11715-1.31 SERIES	SB	252'	IRR 01	S R	41	N/A	N/A	YES	N/A	N/A	
5404	1	20	1-EI-CB-47F	EI/SOLID STATE PROTECTION OUTPUT CABINET (TRAIN B)	11715-1.31 SERIES	SB	252'	IRR 01	S R	41	N/A	N/A	YES	N/A	N/A	
5405	1	20	1-EI-CB-48A	EI/AUXILIARY RELAY RACK 1	11715-FE-027A	SB	252'	IRR 01	S R	41	N/A	N/A	YES	N/A	N/A	
5406	1	20	1-EI-CB-51	EI/PRIMARY PLANT PROCESS CABINET 1	11715-FE-047Y/1	SB	252'	IRR 01	S R	--	N/A	N/A	YES	N/A	N/A	
5407	1	20	1-EI-CB-52	EI/PRIMARY PLANT PROCESS CABINET 2	11715-FE-047Y/1	SB	252'	IRR 01	S R	--	N/A	N/A	YES	N/A	N/A	
5408	1	20	1-EI-CB-53	EI/PRIMARY PLANT PROCESS CABINET 3	11715-FE-004S/19	SB	252'	IRR 01	S R	--	N/A	N/A	YES	N/A	N/A	
5409	1	20	1-EI-CB-54	EI/PRIMARY PLANT PROCESS CABINET 4	11715-FE-047Y/1	SB	252'	IRR 01	S R	--	N/A	N/A	YES	N/A	N/A	
5410	1	20	1-EI-CB-55	EI/PRIMARY PLANT PROCESS CABINET 5	11715-FE-004U/11	SB	252'	IRR 01	S R	--	N/A	N/A	YES	N/A	N/A	
5411	1	20	1-EI-CB-56	EI/PRIMARY PLANT PROCESS CABINET 6	11715-FE-004V/16	SB	252'	IRR 01	S R	--	N/A	N/A	YES	N/A	N/A	
5412	1	20	1-EI-CB-57	EI/PRIMARY PLANT PROCESS CABINET 7	11715-FE-047Y/1	SB	252'	IRR 01	S R	--	N/A	N/A	YES	N/A	N/A	

CERTIFICATION:

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DAWN W. JACOBS / ENGINEER

*Dawn W. Jacobs*  
Signature

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

*David J. Werder*  
Signature

MARCH 11, 1993

NORTH AREA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
SUPPORTING SYSTEMS  
(Sorted by Line Number)

Data Base File Name/Date/Time: NA1\_SSEL.DBF / 03/11/93 / 09:33:18  
Sort Criteria: Line Number  
Filter Criteria: (Line Number >= '5000') AND (Line Number < '6000')  
Program File Name & Version: SSEM v0.0

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr.Elv.	LOCATION Rm. or Row/Col.	NOTE	OP. Normal	SY. Desired	POWER REQ'D?	SUPPORTING SYS. DMG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
5413	1	20	1-EI-CB-58	EI/PRIMARY PLANT PROCESS CABINET B	11715-FE-047Y/1	SB	252'	IRR 01	S R --	N/A	N/A	YES	N/A	N/A
5414	1	20	1-EI-CB-62A	EI/SAFEGUARDS TEST CABINET A	11715-1.31 SERIES	SB	252'	IRR 01	S R --	N/A	N/A	YES	N/A	N/A
5415	1	20	1-EI-CB-62B	EI/SAFEGUARDS TEST CABINET B	11715-1.31 SERIES	SB	252'	IRR 01	S R --	N/A	N/A	YES	N/A	N/A
5416	1	20	1-EI-CB-64A	EI/SOLID STATE PROT SYS AUX RELAY RACK	11715/12050-1.28-458	SB	252'	IRR 01	S R 41	N/A	N/A	YES	N/A	N/A
5417	1	20	1-EI-CB-64B	EI/SOLID STATE PROT SYS AUX RELAY RACK	11715/12050-1.28-458	SB	252'	IRR 01	S R 41	N/A	N/A	YES	N/A	N/A
5418	1	20	1-EI-CP-04	EI/MICROPROCESSOR CABINET	11715-FE-0278/33	SB	277'	CR	S R --	N/A	N/A	YES	N/A	N/A
5418A	1	20	1-EI-CP-7	EI/AHSAC LOGIC PANEL	11715-FE-027A/22/G2	SB	252'	IRR 01	S R 6,41	N/A	N/A	YES	N/A	N/A
5418B	1	20	1-EI-CB-201	EI/DIESEL ISOL PANEL (H-TRAIN)	11715-FE-3KG/3	SB	272'	EDG	S R 6,41	N/A	N/A	YES	N/A	N/A
5418C	1	20	2-EI-CB-201	EI/DIESEL ISOL PANEL (H-TRAIN)	12050-FE-055F/17	SB	272'	EDG	S R 6,41	N/A	N/A	YES	N/A	N/A
5419	1	20	1-EP-CB-10C	EP/PZR DISTRIBUTION PANEL #2	DWG NOT AVAILABLE	RCRM	280'	12/JK	S R --	N/A	N/A	YES	12050-RC-10B/B	N/A
5420	1	20	1-EP-CB-10F	EP/RCS PZR CONTROL PANEL	DWG NOT AVAILABLE	RCRM	280'	12/	S R --	N/A	N/A	YES	12050-RC-10B/B	N/A
5421	1	20	1-EP-CB-204	EP/APPENDIX R ISOL PANEL	11715-FE-027A/22/A2	SB	254'	B/C	S R --	N/A	N/A	YES	N/A	N/A
5422	1	20	1-EP-CB-28A	EP/AUXILIARY RELAY RACK A	11715-FE-30C/29	SB	252'	IRR 01	S R 41	N/A	N/A	YES	N/A	N/A
5423	1	20	1-EP-CB-28B	EP/AUXILIARY RELAY RACK B	11715-FE-30D/28	SB	252'	IRR 01	S R 41	N/A	N/A	YES	N/A	N/A
5424	1	20	1-EP-CB-28C	EP/AUXILIARY RELAY RACK C	11715-FE-30E/26	SB	252'	IRR 01	S R 41	N/A	N/A	YES	N/A	N/A
5424A	1	20	1-EP-CB-28E	EP/AUXILIARY RELAY RACK E	11715-FE-30G/8	SB	252'	IRR 01	S R 6,41	N/A	N/A	YES	N/A	N/A
5424B	1	20	1-EP-CB-28F	EP/AUXILIARY RELAY RACK F	11715-FE-30H/9	SB	252'	IRR 01	S R 6,41	N/A	N/A	YES	N/A	N/A
5424C	1	20	1-EP-CB-28G	EP/AUXILIARY RELAY RACK G	11715-FE-30J/15	SB	252'	IRR 01	S R 6,41	N/A	N/A	YES	N/A	N/A
5425	1	20	1-EP-CB-28H	EP/SW LOGIC CABINET 1A	11715-FE-30K/22	SB	252'	IRR 01	S R 41	N/A	N/A	YES	N/A	N/A
5425A	1	20	1-EP-CB-28HX	EP/SW LOGIC CABINET 1AX	11715-FE-31A/11	SB	252'	IRR 01	S R 6,41	N/A	N/A	YES	N/A	N/A
5425B	1	20	1-EP-CB-28J	EP/SW LOGIC CABINET 1B	11715-FE-30L/26	SB	252'	IRR 01	S R 6,41	N/A	N/A	YES	N/A	N/A
5425C	1	20	1-EP-CB-28JX	EP/SW LOGIC CABINET 1BX	11715-FE-31B/11	SB	252'	IRR 01	S R 6,41	N/A	N/A	YES	N/A	N/A

CERTIFICATION:

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DAWN W. JACOBS / ENGINEER

DW Jacobs  
Signature

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

DJ Werder  
Signature

MARCH 11, 1993

LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	LOCATION	OP. ST.	POWER SUPPLYING SYS.	REQ'D INTERCONNECTIONS						
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
54250	1	20	1-EP-CB-63A	EP/LOOP STOP VALVE LOGIC CABINET BACK A	11715-1-32 SERIES SB	252'	IPR #1	S R 6,41	N/A	N/A	YES	N/A	YES	N/A	N/A
54251	1	20	1-EP-CB-63B	EP/LOOP STOP VALVE LOGIC CABINET BACK B	11715-1-32 SERIES SB	252'	IPR #1	S R 6,41	N/A	N/A	YES	N/A	YES	N/A	N/A
54252	1	20	1-EI-CB-115C	EI/CONT ISOL TRIP VALVE RELAY PANEL	11715-FE-108K1/5/22 AUX	260'	117K	S R 6,41	N/A	N/A	NO	11715-RC-152/1	N/A	N/A	N/A
54253	1	20	1-EP-CB-115B	EP/CONT ISOL TRIP VALVE RELAY PANEL A-1	11715-FE-108K1/5/72 AUX	260'	ELEC TUNNEL #1	S R 6,41	N/A	N/A	YES	N/A	YES	N/A	N/A
54254	1	20	1-EP-CB-115C	EP/CONT ISOL TRIP VALVE RELAY PANEL A-2	11715-FE-108K1/5/12 AUX	260'	ELEC TUNNEL #1	S R 6,41	N/A	N/A	YES	N/A	YES	N/A	N/A
54255	1	20	1-EI-CB-121A	EI/CONT ISOL TRIP VALVE RELAY PANEL	13075-FE-39E AUX	277'	LOGIC RM #1	S R 6,41	N/A	N/A	YES	11715-SS-006/3	1-EP-CB-19A	N/A	N/A
54256	1	20	1-EP-CB-116A	EP/CONT ISOL TRIP VALVE RELAY PANEL B	11715-FE-108K1/5/75 AUX	260'	ELEC TUNNEL #1	S R 6,41	N/A	N/A	YES	N/A	YES	N/A	N/A
54257	1	20	1-EP-CB-121B	EP/CONT ISOL TRIP VALVE RELAY PANEL	13075-FE-39E AUX	277'	LOGIC RM #1	S R 6,41	N/A	N/A	YES	11715-SS-006/3	1-EP-CB-19C	N/A	N/A
54258	1	18	1-HV-PDS-1229B	HV/CND WTR STRAINER DIFF PRESS	11715-FB-04001/15 SB	258'	CHILLER RM	S R --	ON	ON	YES	N/A	YES	N/A	N/A
54259	1	18	1-HV-PDS-1229A	HV/CND WTR STRAINER DIFF PRESS	11715-FB-04001/15 SB	258'	CHILLER RM	S R --	ON	ON	YES	N/A	YES	N/A	N/A
54260	1	18	1-HV-FS-1215A	HV/CND WTR PUMP SEAL FLOW SWITCH	11715-FB-04001/15 SB	256'	CHILLER RM	S R --	ON	ON	YES	N/A	YES	N/A	N/A
54261	1	18	1-HV-FS-1215B	HV/CND WTR PUMP SEAL FLOW SWITCH	11715-FB-04001/15 SB	256'	CHILLER RM	S R --	ON	ON	YES	N/A	YES	N/A	N/A
54262	2	18	1-HV-FS-1215C	HV/CND WTR PUMP SEAL FLOW SWITCH	11715-FB-04001/15 SB	256'	CHILLER RM	S R --	ON	ON	YES	N/A	YES	N/A	N/A
54263	1	088	1-HV-SOV-1200A	HV/CND WTR PUMP SEAL FLOW CONTROL	11715-FB-04001/15 SB	256'	CHILLER RM	S R --	OP/CL	OPEN	YES	N/A	YES	N/A	N/A
54264	1	088	1-HV-SOV-1200B	HV/CND WTR PUMP SEAL FLOW CONTROL	11715-FB-04001/15 SB	256'	CHILLER RM	S R --	OP/CL	OPEN	YES	N/A	YES	N/A	N/A
54265	2	088	1-HV-SOV-1200C	HV/CND WTR PUMP SEAL FLOW CONTROL	11715-FB-04001/15 SB	256'	CHILLER RM	S R --	OP/CL	OPEN	YES	N/A	YES	N/A	N/A
54266	1, 2	0	1-HV-S-1A	HV/SELF CLEARING STRAINER	11715-FB-04001/15/26 SB	254'	AC RM 5/D	S R --	ON	ON	YES	N/A	YES	N/A	N/A
54267	1, 2	0	1-HV-S-1B	HV/SELF CLEARING STRAINER	11715-FB-04001/15/26 SB	254'	AC RM 4/D	S R --	ON	ON	YES	N/A	YES	N/A	N/A

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAVID W. JACOBS / ENGINEER  
 Signature: *David W. Jacobs*  
 MARCH 11, 1993

DAVID J. WERGER / ENGINEER  
 Signature: *David J. Werger*  
 MARCH 11, 1993

NORTH AREA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 SUPPORTING SYSTEMS  
 (Sorted by Line Number)

LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	LOCATION	OP. ST.	POWER SUPPORTING SYS.	REQ'D INTERCONNECTIONS						
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
5428	1	05	1-HV-P-22A	HV/CR & RR WATER SYSTEM BOOSTER PUMP	11715-FB-04001/15/E6 SB	264'	CHILLER RM	S R	ON	ON	ON	YES	N/A	N/A	N/A
5429	1	05	1-HV-P-22B	HV/CR & RR WATER SYSTEM BOOSTER PUMP	11715-FB-04001/15/B6 SB	264'	CHILLER RM	S R	ON	ON	ON	YES	N/A	N/A	N/A
5430	2	05	1-HV-P-22C	HV/CR & RR WATER SYSTEM BOOSTER PUMP	11715-FB-04001/15/D6 SB	264'	CHILLER RM	S R	OFF	ON	ON	YES	N/A	N/A	N/A
5431	2	R	1-SW-410	HV/CR & RR WATER SYSTEM CROSS-TIE VALVE	11715-FB-04001/15/C7 SB	254'	5/C	--	15	CLOSED	OPEN	NO	N/A	N/A	N/A
5432	1	11	1-HV-E-4A	HV/CHILLER UNIT	11715-FB-04001/15/E5 SB	254'	AC RM 4/C	S R	ON	ON	ON	YES	11715-FB-04001/13	1-EP-ME-10	
5433	1	11	1-HV-E-4B	HV/CHILLER UNIT	11715-FB-04001/15/B5 SB	254'	AC RM 4/C	S R	ON	ON	ON	YES	11715-FB-04001/13	1-EP-ME-11	
5434	2	11	1-HV-E-4C	HV/CHILLER UNIT	11715-FB-04001/15/D5 SB	254'	AC RM 4/D	S R	ON	ON	ON	YES	11715-FB-04001/13	1-EP-ME-41	
5441	1	07	1-HV-PCV-12354Z	HV/CR & RR WATER SYSTEM FLOW CONTROL	11715-FB-04001/15/E3 SB	--	AC RM	--	--	OPEN	OPEN	NO	11715-HV-058/2	N/A	
5442	1	07	1-HV-PCV-1235BZ	HV/CR & RR WATER SYSTEM FLOW CONTROL	11715-FB-04001/15/B3 SB	--	AC RM	--	--	OPEN	OPEN	NO	11715-HV-059/2	N/A	
5443	2	07	1-HV-PCV-1235CZ	HV/CR & RR WATER SYSTEM FLOW CONTROL	11715-FB-04001/15/D3 SB	--	AC RM	--	--	OPEN	OPEN	NO	11715-HV-060/2	N/A	
5444	1	18	1-HV-PC-1235A	HV/CR & RR WATER SYSTEM FLOW CONTROL	11715-FB-04001/15/E5 SB	--	AC RM	S	--	VENT	VENT	NO	N/A	N/A	
5445	1	18	1-HV-PC-1235B	HV/CR & RR WATER SYSTEM FLOW CONTROL	11715-FB-04001/15/B5 SB	--	AC RM	S	--	VENT	VENT	NO	N/A	N/A	
5446	2	18	1-HV-PC-1235C	HV/CR & RR WATER SYSTEM FLOW CONTROL	11715-FB-04001/15/E5 SB	--	AC RM	S	--	VENT	VENT	NO	N/A	N/A	
5447	1	08A	1-HV-MOV-113A	HV/CR & RR WATER SYSTEM ISOL.	11715-FB-04001/15/E3 SB	--	AC RM	R	--	OPEN	OPEN	NO	N/A	N/A	
5448	1	08A	1-HV-MOV-113B	HV/CR & RR WATER SYSTEM ISOL.	11715-FB-04001/15/B3 SB	--	AC RM	R	--	OPEN	OPEN	NO	N/A	N/A	
5449	2	08A	1-HV-MOV-113C	HV/CR & RR WATER SYSTEM ISOL.	11715-FB-04001/15/D3 SB	--	AC RM	R	--	OPEN	OPEN	NO	N/A	N/A	

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DAWN W. JACOBS / ENGINEER  
 Signature: *Dawn W. Jacobs*  
 MARCH 11, 1993

DAVID J. HERDER / ENGINEER  
 Signature: *David J. Herder*  
 MARCH 11, 1993

LINE NO.	EQUIP. TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Fir. Elev.	LOCATION No. or Row/Col.	OP. ST. (Normal)	POWER SUPPORTING SYS. REQ'D	SUPPORTING COMPONENTS				
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
5449A	1	21	1-HV-TK-6A	HV/CHILLED WATER EXPANSION TANK	11715-FB-040A1/13	5B	254'	CHILLER RH	S	--	N/A	N/A	MD	N/A
5449B	2	21	1-HV-TK-6B	HV/CHILLED WATER EXPANSION TANK	11715-FB-040A1/13	5B	254'	CHILLER RH	S	--	N/A	N/A	MD	N/A
5449C	1	05	1-HV-P-20A	HV/CHILLED WATER PUMP	11715-FB-040A1/13	5B	254'	CHILLER RH	S R	--	RUNNING	RUNNING	YES	N/A
5449E	1	19	1-HV-TC-1200A	HV/CHILLED WATER P. DISCH. TEMP.	11715-FB-040A1/13	5B	254'	CHILLER RH	S R	--	ON	ON	YES	N/A
5449F	1	10	1-HV-FS-1213A	HV/CHILLER FLOW SWITCH	11715-FB-040A1/13	5B	254'	CHILLER RH 4/C	S R	--	ON	ON	YES	N/A
5449H	1	08A	1-HV-MOV-111A	HV/CHILLER OUTLET ISOLATION VALVE	11715-FB-040A1/13	5B	254'	CHILLER RH 4/C	R	--	OPEN	OPEN	MD	N/A
5449I	2	05	1-HV-P-20B	HV/CHILLED WATER PUMP	11715-FB-040A1/13	5B	254'	CHILLER RH 5/D	S R	--	RUNNING	RUNNING	YES	N/A
5449K	2	19	1-HV-TC-1200B	HV/CHILLED WATER P. DISCH. TEMP.	11715-FB-040A1/13	5B	254'	CHILLER RH	S R	--	ON	ON	YES	N/A
5449M	2	18	1-HV-FS-1213B	HV/CHILLER FLOW SWITCH	11715-FB-040A1/13	5B	254'	CHILLER RH 5/D	S R	--	ON	ON	YES	N/A
5449N	2	08A	1-HV-MOV-111B	HV/CHILLER OUTLET ISOLATION VALVE	11715-FB-040A1/13	5B	254'	CHILLER RH 5/D	R	--	OPEN	OPEN	MD	N/A
5449Q	2	R	1-HV-V-1*	HV/STANDBY CHILLER MANUAL ISOL	11715-FB-040A1/13/07	5B	--	--	15	--	CLOSED	OPEN	MD	N/A
5449T	2	R	1-HV-V-2*	HV/STANDBY CHILLER MANUAL ISOL	11715-FB-040A1/13/07	5B	--	--	15	--	CLOSED	OPEN	MD	N/A
5449Z	2	R	1-HV-V-3*	HV/STANDBY CHILLER MANUAL ISOL	11715-FB-040A1/13/0A	5B	--	--	15	--	CLOSED	OPEN	MD	N/A
5449Z1	2	R	1-HV-V-4*	HV/STANDBY CHILLER MANUAL ISOL	11715-FB-040A1/13/0A	5B	--	--	15	--	CLOSED	OPEN	MD	N/A
5449Z2	2	05	1-HV-P-20C	HV/CHILLED WATER PUMP	11715-FB-040A1/13/05	5B	254'	CHILLER RH 5/D	S R	--	OFF	OFF	RUNNING	YES
5449Z4	2	19	1-HV-TC-1200C	HV/CHILLED WATER PUMP DISCH TEMP	11715-FB-040A1/13/06	5B	254'	CHILLER RH	S R	--	OFF	ON	YES	N/A
5449Z6	2	18	1-HV-FS-1213C	HV/CHILLER FLOW SWITCH	11715-FB-040A1/13/06	5B	254'	CHILLER RH 4/C	S R	--	ON	ON	YES	N/A
5449Z7	2	08A	1-HV-MOV-111C	HV/CHILLER OUTLET ISOL	11715-FB-040A1/13/06	5B	254'	CHILLER RH 4/C	R	--	OPEN	OPEN	MD	N/A
5450	2	R	1-SW-405	HV/DR & RR WATER SYSTEM CROSS-TIE VALVE	11715-FB-04001/15/03	5B	254'	CHILLER RH	--	15	CLOSED	OPEN	MD	N/A
5476	1	0	1-HV-SAD-1H*	HV/DG ROOM 1H SUPPLY AIR DAMPER	11715-FB-024L1/11/05	5B	272'	14/E	S	--	N/A	N/A	MD	N/A
5477	1	0	2-HV-SAD-2H*	HV/DG ROOM 2H SUPPLY AIR DAMPER	11715-FB-024L1/11/06	5B	272'	15/E	S	--	N/A	N/A	MD	N/A
5478	2	0	1-HV-SAD-1J*	HV/DG ROOM 1J SUPPLY AIR DAMPER	11715-FB-024L1/11/07	5B	272'	16/E	S	--	N/A	N/A	MD	N/A

CERTIFICATION:  
 The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAWN V. JACOBS / ENGINEER  
 Signature: *Dawn Jacobs*  
 MARCH 11, 1993

DAVID J. WERDER / ENGINEER  
 Signature: *David Werder*  
 MARCH 11, 1993



NORTH ANNA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
SUPPORTING SYSTEMS  
(Sorted by Line Number)

Data Base File Name/Date/Time: NA1\_SSEL.DBF / 03/11/93 / 09:33:18  
Sort Criteria: Line Number  
Filter Criteria: (Line Number >= '5000') AND (Line Number < '6000')  
Program File Name & Version: SSEL v0.0

LINE NO.	EQUIP TRAM CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	EQUIPMENT		LOCATION		SORT NOTES		OP. ST.		POWER REQ'D	SUPPORTING SYS. ENG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS
					Building	Ftr. Elev.	Rm. or Row/Col.	(10)	(11)	Normal	Desired				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
5479	2	0	2-HV-SAD-2J*	HV/DG ROOM 2J SUPPLY AIR DAMPER	11715-FB-024L1/11/DB SB		272'	17/E	S	--	N/A	N/A	NO	N/A	N/A
5479A	1	20	1-EI-CB-08A	EG/EMERG DG CONTROL PANEL (H-TRAIN)	11715-FB-027B/33/H2 SB		277'	CR	S	R 6	N/A	N/A	YES	N/A	N/A
5480	1, 2	21	1-EG-TK-2A	EG/UNDERGROUND FO STORAGE TANK	11715-FB-035A1/19/C7 YARD		--	--	S	--	N/A	N/A	NO	N/A	N/A
5481	1, 2	21	1-EG-TK-2B	EG/UNDERGROUND FO STORAGE TANK	11715-FB-035A1/19/B7 YARD		--	--	S	--	N/A	N/A	NO	N/A	N/A
5482	1	05	1-EG-P-1HA	EG/EDG 1H LEAD FO TRANSFER PUMP	11715-FB-035A2/21/B7 FOPH		270'	--	S	R --	OFF	RUNNING	YES	N/A	N/A
5483	2	05	1-EG-P-1HB	EG/EDG 1H STANDBY FO TRANSFER PUMP	11715-FB-035A2/21/B6 FOPH		270'	--	S	R --	OFF	RUNNING	YES	N/A	N/A
5484	1	05	1-EG-P-1JA	EG/EDG 1J LEAD FO TRANSFER PUMP	11715-FB-035A2/21/D7 FOPH		270'	--	S	R --	OFF	RUNNING	YES	N/A	N/A
5485	2	05	1-EG-P-1JB	EG/EDG 1J STANDBY FO TRANSFER PUMP	11715-FB-035A2/21/D6 FOPH		270'	--	S	R --	OFF	RUNNING	YES	N/A	N/A
5486	1	05	2-EG-P-2HA	EG/EDG 2H LEAD FO TRANSFER PUMP	11715-FB-035A2/21/C7 FOPH		270'	--	S	R --	OFF	RUNNING	YES	N/A	N/A
5487	2	05	2-EG-P-2HB	EG/EDG 2H STANDBY FO TRANSFER PUMP	11715-FB-035A2/21/C6 FOPH		270'	--	S	R --	OFF	RUNNING	YES	N/A	N/A
5488	1	05	2-EG-P-2JA	EG/EDG 2J LEAD FO TRANSFER PUMP	11715-FB-035A2/21/F7 FOPH		270'	--	S	R --	OFF	RUNNING	YES	N/A	N/A
5489	2	05	2-EG-P-2JB	EG/EDG 2J STANDBY FO TRANSFER PUMP	11715-FB-035A2/21/F6 FOPH		270'	--	S	R --	OFF	RUNNING	YES	N/A	N/A
5490	1	21	1-EG-TK-1H	EG/FUEL OIL DAY TANK	11715-FB-035A2/21/C3 SB		270'	DG	S	--	N/A	N/A	NO	N/A	N/A
5491	2	21	1-EG-TK-1J	EG/FUEL OIL DAY TANK	11715-FB-035A2/21/B5 SB		270'	DG	S	--	N/A	N/A	NO	N/A	N/A
5492	1	21	2-EG-TK-2H	EG/FUEL OIL DAY TANK	11715-FB-035A2/21/B3 SB		270'	DG	S	--	N/A	N/A	NO	N/A	N/A
5493	2	21	2-EG-TK-2J	EG/FUEL OIL DAY TANK	11715-FB-035A2/21/C5 SB		270'	DG	S	--	N/A	N/A	NO	N/A	N/A
5495	1	18	1-EG-LS-1HA	EG/FUEL OIL DAY TANK LEVEL	11715-FB-035A2/21/D3 SB		270'	DG	S	R --	OFF	ON	YES	N/A	N/A
5496	2	18	1-EG-LS-1HB	EG/FUEL OIL DAY TANK LEVEL	11715-FB-035A2/21/D3 SB		270'	DG	S	R --	OFF	ON	YES	N/A	N/A
5497	1	18	1-EG-LS-103-HA	EG/FUEL OIL DAY TANK LEVEL	11715-FB-035A2/21/C4 SB		270'	DG	S	R --	OFF	ON	YES	N/A	N/A
5498	2	18	1-EG-LS-103-HB	EG/FUEL OIL DAY TANK LEVEL	11715-FB-035A2/21/C4 SB		270'	DG	S	R --	OFF	ON	YES	N/A	N/A
5499	1	18	1-EG-LS-1JA	EG/FUEL OIL DAY TANK LEVEL	11715-FB-035A2/21/B5 SB		270'	DG	S	R --	OFF	ON	YES	N/A	N/A
5500	2	18	1-EG-LS-1JB	EG/FUEL OIL DAY TANK LEVEL	11715-FB-035A2/21/B5 SB		270'	DG	S	R --	OFF	ON	YES	N/A	N/A

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DAWN W. JACOBS / ENGINEER

*Dawn W. Jacobs*  
Signature

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

*David J. Werder*  
Signature

MARCH 11, 1993

NORTH AREA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
SUPPORTING SYSTEMS  
(Sorted by Line Number)

Data Base File Name/Date/Time: NA1\_SSEL.DBF / 03/11/93 / 09:33:18  
Sort Criteria: Line Number  
Filter Criteria: (Line Number >= 5000) AND (Line Number < 6000)  
Program File Name & Version: SSEL V0.0

LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT LOCATION	OP. ST.	POWER SUPPORTING SYS.	REQ'D INTERCONNECTIONS					
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
5501	1	18	1-EG-LS-103-JA	EG/FUEL OIL DAY TANK LEVEL	11715-FB-035A2-21/B4 SB	270'	DC	DC	DC	ON	YES	N/A	N/A	
5502	2	18	1-EG-LS-103-JB	EG/FUEL OIL DAY TANK LEVEL	11715-FB-035A2/21/B4 SB	270'	DC	DC	DC	ON	YES	N/A	N/A	
5503	1	18	2-EG-LS-2HA	EG/FUEL OIL DAY TANK LEVEL	11715-FB-035A2/21/C3 SB	270'	DC	DC	DC	ON	YES	N/A	N/A	
5504	2	18	2-EG-LS-2HB	EG/FUEL OIL DAY TANK LEVEL	11715-FB-035A2/21/C3 SB	270'	DC	DC	DC	ON	YES	N/A	N/A	
5505	1	18	2-EG-LS-203-HA	EG/FUEL OIL DAY TANK LEVEL	11715-FB-035A2/21/B4 SB	270'	DC	DC	DC	ON	YES	N/A	N/A	
5506	2	18	2-EG-LS-203-HB	EG/FUEL OIL DAY TANK LEVEL	11715-FB-035A2/21/B4 SB	270'	DC	DC	DC	ON	YES	N/A	N/A	
5507	1	18	2-EG-LS-2JA	EG/FUEL OIL DAY TANK LEVEL	11715-FB-035A2/21/D5 SB	270'	DC	DC	DC	ON	YES	N/A	N/A	
5508	2	18	2-EG-LS-2JB	EG/FUEL OIL DAY TANK LEVEL	11715-FB-035A2/21/D5 SB	270'	DC	DC	DC	ON	YES	N/A	N/A	
5509	1	18	2-EG-LS-203-JA	EG/FUEL OIL DAY TANK LEVEL	11715-FB-035A2/21/D4 SB	270'	DC	DC	DC	ON	YES	N/A	N/A	
5510	2	18	2-EG-LS-203-JB	EG/FUEL OIL DAY TANK LEVEL	11715-FB-035A2/21/D4 SB	270'	DC	DC	DC	ON	YES	N/A	N/A	
5511	1	05	1-EG-EDP-1H*	EG/ENGINE DRIVEN FO PUMP	11715-1-30-212C	FOPH	FO	FO	FO	OFF	RUNNING	NO	N/A	EDG-1H
5512	2	05	1-EG-EDP-1J*	EG/ENGINE DRIVEN FO PUMP	11715-1-30-212C	FOPH	FO	FO	FO	OFF	RUNNING	NO	N/A	EDG-1J
5513	1	05	2-EG-EDP-2H*	EG/ENGINE DRIVEN FO PUMP	11715-1-30-212C	FOPH	FO	FO	FO	OFF	RUNNING	NO	N/A	EDG-2H
5514	2	05	2-EG-EDP-2J*	EG/ENGINE DRIVEN FO PUMP	11715-1-30-212C	FOPH	FO	FO	FO	OFF	RUNNING	NO	N/A	EDG-2J
5515	1	05	1-EG-P-01HC	EG/DC FUEL OIL PUMP	11715-1-30-212C	FOPH	FO	FO	FO	OFF	RUNNING	YES	N/A	EDG-1H
5516	2	05	1-EG-P-01JC	EG/DC FUEL OIL PUMP	11715-1-30-212C	FOPH	FO	FO	FO	OFF	RUNNING	YES	N/A	EDG-1J
5517	1	05	2-EG-P-02HC	EG/DC FUEL OIL PUMP	11715-1-30-212C	FOPH	FO	FO	FO	OFF	RUNNING	YES	N/A	EDG-2H
5518	2	05	2-EG-P-02JC	EG/DC FUEL OIL PUMP	11715-1-30-212C	FOPH	FO	FO	FO	OFF	RUNNING	YES	N/A	EDG-2J
5519	1	05	1-EG-PS-603H	EG/FUEL OIL DIFF PRESS	11715-1-30-212C	FOPH	FO	FO	FO	OFF	RUNNING	YES	N/A	EDG-1H
5520	2	05	1-EG-PS-603J	EG/FUEL OIL DIFF PRESS	11715-1-30-212C	FOPH	FO	FO	FO	OFF	RUNNING	YES	N/A	EDG-1J
5521	1	05	2-EG-PS-603H	EG/FUEL OIL DIFF PRESS	11715-1-30-212C	FOPH	FO	FO	FO	OFF	RUNNING	YES	N/A	EDG-2H
5522	2	05	2-EG-PS-603J	EG/FUEL OIL DIFF PRESS	11715-1-30-212C	FOPH	FO	FO	FO	OFF	RUNNING	YES	N/A	EDG-2J
5523	1	05	1-EG-FF-H*	EG/FUEL OIL FILTER	11715-1-30-212C	FOPH	FO	FO	FO	OFF	RUNNING	NO	N/A	EDG-1H

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DAVE W. JACOBS / ENGINEER

*Dave W. Jacobs*  
Signature

MARCH 11, 1993

DAVID J. WEDDER / ENGINEER

*David J. Wedder*  
Signature

MARCH 11, 1993

LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dep. No./Rev./Zone	Building	LOCATION Ra. or Row/Col.	OP. ST. Normal	Desired	POWER SUPPORTING SYS. REQ'D INTERCONNECTIONS						
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
5524	2	05	1-EG-FF-J*	EG/FUEL OIL FILTER	11715-1-30-212C	FOPH	270'	--	S	36,29	N/A	N/A	NO	N/A	EDG-1J
5525	1	05	2-EG-FF-H*	EG/FUEL OIL FILTER	11715-1-30-212C	FOPH	270'	--	S	36,29	N/A	N/A	NO	N/A	EDG-2H
5526	2	05	2-EG-FF-J*	EG/FUEL OIL FILTER	11715-1-30-212C	FOPH	270'	--	S	36,29	N/A	N/A	NO	N/A	EDG-2J
5527	1	21	1-EG-TK-1HA	EG/AIR COMPRESSOR AIR RECEIVER	11715-FM-107A1/09/03	SB	270'	DG	S	--	N/A	N/A	NO	N/A	N/A
5528	2	21	1-EG-TK-1HB	EG/AIR COMPRESSOR AIR RECEIVER	11715-FM-107A2/09/03	SB	270'	DG	S	--	N/A	N/A	NO	N/A	N/A
5529	1	21	1-EG-TK-1JA	EG/AIR COMPRESSOR AIR RECEIVER	11715-FM-107A3/10/03	SB	270'	DG	S	--	N/A	N/A	NO	N/A	N/A
5530	2	21	1-EG-TK-1JB	EG/AIR COMPRESSOR AIR RECEIVER	11715-FM-107A4/10/03	SB	270'	DG	S	--	N/A	N/A	NO	N/A	N/A
5531	1	21	2-EG-TK-2HA	EG/AIR COMPRESSOR AIR RECEIVER	11715-FM-107A1/09	SB	270'	DG	S	--	N/A	N/A	NO	N/A	N/A
5532	2	21	2-EG-TK-2HB	EG/AIR COMPRESSOR AIR RECEIVER	11715-FM-107A2/09	SB	270'	DG	S	--	N/A	N/A	NO	N/A	N/A
5533	1	21	2-EG-TK-2JA	EG/AIR COMPRESSOR AIR RECEIVER	11715-FM-107A3/10	SB	270'	DG	S	--	N/A	N/A	NO	N/A	N/A
5534	2	21	2-EG-TK-2JB	EG/AIR COMPRESSOR AIR RECEIVER	11715-FM-107A4/10	SB	270'	DG	S	--	N/A	N/A	NO	N/A	N/A
5535	1	18	1-EG-PS-602HA	EG/AIR COMPRESSOR AIR RECEIVER PRESSURE	11715-FM-107A1/09/ES	SB	270'	DG	S R	--	ON	ON	YES	N/A	N/A
5536	2	18	1-EG-PS-602HB	EG/AIR COMPRESSOR AIR RECEIVER PRESSURE	11715-FM-107A2/09/ES	SB	270'	DG	S R	--	ON	ON	YES	N/A	N/A
5537	1	18	1-EG-PS-602JA	EG/AIR COMPRESSOR AIR RECEIVER PRESSURE	11715-FM-107A3/10/ES	SB	270'	DG	S R	--	ON	ON	YES	N/A	N/A
5538	2	18	1-EG-PS-602JB	EG/AIR COMPRESSOR AIR RECEIVER PRESSURE	11715-FM-107A4/10/ES	SB	270'	DG	S R	--	ON	ON	YES	N/A	N/A
5539	1	18	2-EG-PS-602HA	EG/AIR COMPRESSOR AIR RECEIVER PRESSURE	DNG NOT AVAILABLE	SB	270'	DG	S R	--	ON	ON	YES	N/A	N/A
5540	2	18	2-EG-PS-602HB	EG/AIR COMPRESSOR AIR RECEIVER PRESSURE	DNG NOT AVAILABLE	SB	270'	DG	S R	--	ON	ON	YES	N/A	N/A
5541	1	18	2-EG-PS-602JA	EG/AIR COMPRESSOR AIR RECEIVER PRESSURE	DNG NOT AVAILABLE	SB	270'	DG	S R	--	ON	ON	YES	N/A	N/A
5542	2	18	2-EG-PS-602JB	EG/AIR COMPRESSOR AIR RECEIVER PRESSURE	DNG NOT AVAILABLE	SB	270'	DG	S R	--	ON	ON	YES	N/A	N/A

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 Signature: *Dawn V. Jacobs*  
 MARCH 11, 1993

DAVID J. WEDDER / ENGINEER  
 Signature: *David J. Wedder*  
 MARCH 11, 1993

LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	Equipment Flr./Eiv.	LOCATION	OP. ST.	POWER SUPPORTING SYS.	REQ'D INTERCONNECTIONS					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
5543	1	08A	1-EG-SOV-6008A	EG/AIR START SOLENOID VALVE	11715-FM-107A1	09/E6 S8	270'	DC	S R 36	OFF	ON	YES	N/A		EDG-1H
5544	2	08A	1-EG-SOV-6008B	EG/AIR START SOLENOID VALVE	11715-FM-107A2	09/E6 S8	270'	DC	S R 36	OFF	ON	YES	N/A		EDG-1H
5545	1	08A	1-EG-SOV-6008A	EG/AIR START SOLENOID VALVE	11715-FM-107A3	10/E6 S8	270'	DC	S R 36	OFF	ON	YES	N/A		EDG-1J
5546	2	08A	1-EG-SOV-6008B	EG/AIR START SOLENOID VALVE	11715-FM-107A4	10/E6 S8	270'	DC	S R 36	OFF	ON	YES	N/A		EDG-1J
5547	1	08A	2-EG-SOV-6008A	EG/AIR START SOLENOID VALVE	12050-FM-107A1	S8	270'	DC	S R 36	OFF	ON	YES	N/A		EDG-2H
5548	2	08A	2-EG-SOV-6008B	EG/AIR START SOLENOID VALVE	12050-FM-107A2	S8	270'	DC	S R 36	OFF	ON	YES	N/A		EDG-2H
5549	1	08A	2-EG-SOV-6008A	EG/AIR START SOLENOID VALVE	15050-FM-107A3	S8	270'	DC	S R 36	OFF	ON	YES	N/A		EDG-2J
5550	2	08A	2-EG-SOV-6008B	EG/AIR START SOLENOID VALVE	12050-FM-107A4	S8	270'	DC	S R 36	OFF	ON	YES	N/A		EDG-2J
5550A	1	20	1-EE-EG-1B	EG/EDG RH ENGINE CONTROL RELAY	11715-1.30-212C	S8	272'	EDG	S R 6,36, 41	N/A	N/A	YES	N/A		EDG-1H
5550B	1	20	1-EE-EG-3B	EG/EDG RH ENGINE CONTROL RELAY	11715-1.30-212C	S8	272'	EDG	S R 6,36, 41	N/A	N/A	YES	N/A		EDG-1J
5550C	1	20	1-EE-EG-2B	EG/EDG RH ENGINE CONTROL RELAY	11715-1.30-212C	S8	272'	EDG	S R 6,36, 41	N/A	N/A	YES	N/A		EDG-2H
5550D	1	20	1-EE-EG-4B	EG/EDG RH ENGINE CONTROL RELAY	11715-1.30-212C	S8	272'	EDG	S R 6,36, 41	N/A	N/A	YES	N/A		EDG-2J
5550E	1	20	1-EE-EG-1A	EG/EDG RH DIESEL GAGEBOARD	11715-1.30-212C	S8	272'	EDG	S R 6,36, 41	N/A	N/A	YES	N/A		EDG-1H
5550F	1	20	1-EE-EG-3A	EG/EDG RH DIESEL GAGEBOARD	11715-1.30-212C	S8	272'	EDG	S R 6,36, 41	N/A	N/A	YES	N/A		EDG-1J
5550G	1	20	1-EE-EG-2A	EG/EDG RH DIESEL GAGEBOARD	11715-1.30-212C	S8	272'	EDG	S R 6,36, 41	N/A	N/A	YES	N/A		EDG-2H
5550H	1	20	1-EE-EG-4A	EG/EDG RH DIESEL GAGEBOARD	11715-1.30-212C	S8	272'	EDG	S R 6,36, 41	N/A	N/A	YES	N/A		EDG-2J
5550I	1	20	1-EE-EG-01C	EG/CBE PANEL 1H	DWG NOT AVAILABLE	S8	272'	EDG	S R 6,41	N/A	N/A	YES	N/A		N/A
5550J	1	20	1-EE-EG-03C	EG/CBE PANEL 1J	DWG NOT AVAILABLE	S8	272'	EDG	S R 6,41	N/A	N/A	YES	N/A		N/A
5550K	1	20	1-EE-EG-02C	EG/CBE PANEL 2H	DWG NOT AVAILABLE	S8	272'	EDG	S R 6,41	N/A	N/A	YES	N/A		N/A

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*Dawn W. Jacobs*  
 Signature

MARCH 11, 1993

DAVID J. WENDER / ENGINEER

MARCH 11, 1993

LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Fr. Elev.	LOCATION	Sort Notes	Normal	Desired	REQ'D INTERCONNECTIONS				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
5550L	1	20	1-EE-EG-04C	EG/CBE PANEL 2J	DMG NOT AVAILABLE	SB	272'	EDG	S R	6, 41	N/A	N/A	YES	N/A	N/A
5551	1	04	TRANS-11N	/HEAT TRACE TRANSFORMER	11715-FE-001Q/21	AUX	259'	117M	S R	--	ON	OH	YES	N/A	N/A
5552	2	04	TRANS-11R	/HEAT TRACE TRANSFORMER	11715-FE-001R/21	AUX	270'		S R	--	ON	OH	YES	N/A	N/A
5553	1	04	TRANS-12N	/HEAT TRACE TRANSFORMER	11715-FE-001N/16	AUX	270'		S R	--	ON	OH	YES	N/A	N/A
5554	2	04	TRANS-12R	/HEAT TRACE TRANSFORMER	11715-FE-001R/16	AUX	270'		S R	--	ON	OH	YES	N/A	N/A
5555	1	04	TRANS-13N	/HEAT TRACE TRANSFORMER	11715-FE-001N/16	AUX	259'	10/L	S R	--	ON	OH	YES	N/A	N/A
5556	2	04	TRANS-13R	/HEAT TRACE TRANSFORMER	11715-FE-001R/21	AUX	274'	8.7/G	S R	--	ON	OH	YES	N/A	N/A
5557	1	04	TRANS-14N	/HEAT TRACE TRANSFORMER	11715-FE-001Q/21	AUX	270'	9/LH	S R	--	ON	OH	YES	N/A	N/A
5558	2	04	TRANS-14R	/HEAT TRACE TRANSFORMER	11715-FE-001R/21	AUX	260'	9.7/LH	S R	--	ON	OH	YES	N/A	N/A
5559	1	04	TRANS-41H	/HEAT TRACE TRANSFORMER	11715-FE-001Q/21	AFPH	--	--	S R	--	ON	OH	YES	N/A	N/A
5560	2	04	TRANS-41R	/HEAT TRACE TRANSFORMER	11715-FE-001R/21	AFPH	--	--	S R	--	ON	OH	YES	N/A	N/A
5563	1	20	1-EP-CB-11AH	EP/HEAT TRACE DISTRIBUTION CABINET	11715-FE-10/27	AUX	259'	7.5/L	S R	--	ON	OH	YES	N/A	N/A
5564	1	20	1-EP-CB-11BH	EP/HEAT TRACE DISTRIBUTION CABINET	11715-FE-10/27	AUX	259'	7.5/L	S R	--	ON	OH	YES	N/A	N/A
5567	1	20	1-EP-CB-13AH	EP/HEAT TRACE DISTRIBUTION CABINET	11715-FE-10/27	AUX	274'	8.7/N	S R	--	ON	OH	YES	N/A	N/A
5566	1	20	1-EP-CB-13BH	EP/HEAT TRACE DISTRIBUTION CABINET	11715-FE-10/27	AUX	274'	8.7/N	S R	--	ON	OH	YES	N/A	N/A
5569	1	20	1-EP-CB-14AH	EP/HEAT TRACE DISTRIBUTION CABINET	11715-FE-10/27	AUX	259'	9.5/L	S R	--	ON	OH	YES	N/A	N/A
5570	1	20	1-EP-CB-14BH	EP/HEAT TRACE DISTRIBUTION CABINET	11715-FE-10/27	AUX	259'	9.5/L	S R	--	ON	OH	YES	N/A	N/A
5571	1	20	1-EP-CB-41AH	EP/HEAT TRACE DISTRIBUTION CABINET	11715-FE-10/27	AFPH	271'	1.1/LA	S R	--	ON	OH	YES	N/A	N/A
5572	1	20	1-EP-CB-41BH	EP/HEAT TRACE DISTRIBUTION CABINET	11715-FE-10/27	AFPH	271'	1.1/LA	S R	--	ON	OH	YES	N/A	N/A
5575	2	20	1-EP-CB-11AR	EP/HEAT TRACE DISTRIBUTION CABINET	11715-FE-10/27	AUX	259'	8.5/L	S R	--	ON	OH	YES	N/A	N/A
5576	2	20	1-EP-CB-11BR	EP/HEAT TRACE DISTRIBUTION CABINET	11715-FE-10/27	AUX	259'	7.9/L	S R	--	ON	OH	YES	N/A	N/A
5577	2	20	1-EP-CB-12AR	EP/HEAT TRACE DISTRIBUTION CABINET	11715-FE-63 SERIES	AUX	259'	NOTE 1C	S R	30	ON	OH	YES	N/A	N/A
5578	2	20	1-EP-CB-12BR	EP/HEAT TRACE DISTRIBUTION CABINET	11715-FE-63 SERIES	AUX	259'	NOTE 1C	S R	30	ON	OH	YES	N/A	N/A

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

MARCH 11, 1993

DANN W. JACOBS / ENGINEER

*D. Jacobs*  
 Signature

DAVID J. WERDER / ENGINEER

MARCH 11, 1993

LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Desig. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	NOTES	OP. ST. Normal	Desired REQ'D	DWG. NO./REV.	SUPPORTING COMPONENTS			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
5579	2	20	1-EP-CB-134R	EP/HEAT TRACE DISTRIBUTION CABINET	11715-FE-63 SERIES	AUX	274'	NOTE 10	S R 30	OH	OH	YES	N/A	N/A	N/A
5580	2	20	1-EP-CB-138R	EP/HEAT TRACE DISTRIBUTION CABINET	11715-FE-63 SERIES	AUX	274'	NOTE 10	S R 30	OH	OH	YES	N/A	N/A	N/A
5581	2	20	1-EP-CB-144R	EP/HEAT TRACE DISTRIBUTION CABINET	11715-FE-63 SERIES	AUX	259'	8/L	S R 30	OH	OH	YES	N/A	N/A	N/A
5582	2	20	1-EP-CB-148R	EP/HEAT TRACE DISTRIBUTION CABINET	11715-FE-63 SERIES	AUX	259'	8/L	S R 30	OH	OH	YES	N/A	N/A	N/A
5583	2	20	1-EP-CB-414R	EP/HEAT TRACE DISTRIBUTION CABINET	11715-FE-63 SERIES	AFPH	271'	1.1/LA	S R 30	OH	OH	YES	N/A	N/A	N/A
5584	2	20	1-EP-CB-418R	EP/HEAT TRACE DISTRIBUTION CABINET	11715-FE-63 SERIES	AFPH	271'	1.1/LA	S R 30	OH	OH	YES	N/A	N/A	N/A
5587	1	20	1-EP-CB-1181	EP/HEAT TRACE CONTROL CABINET	11715-FE-63 SERIES	AUX	259'	7.5/L	S R 30	OH	OH	YES	N/A	N/A	N/A
5588	2	20	1-EP-CB-1181	EP/HEAT TRACE CONTROL CABINET	11715-FE-63 SERIES	AUX	259'	7.5/L	S R 30	OH	OH	YES	N/A	N/A	N/A
5589	1	20	1-EP-CB-1281	EP/HEAT TRACE CONTROL CABINET	11715-FE-63 SERIES	AUX	244'	NOTE 1J	S R 30	OH	OH	YES	N/A	N/A	N/A
5590	2	20	1-EP-CB-1281	EP/HEAT TRACE CONTROL CABINET	11715-FE-63 SERIES	AUX	244'	NOTE 1J	S R 30	OH	OH	YES	N/A	N/A	N/A
5591	1	20	1-EP-CB-1361	EP/HEAT TRACE CONTROL CABINET	11715-FE-63 SERIES	AUX	271'	NOTE 10	S R 30	OH	OH	YES	N/A	N/A	N/A
5592	2	20	1-EP-CB-1361	EP/HEAT TRACE CONTROL CABINET	11715-FE-63 SERIES	AUX	274'	8.7/H	S R 30	OH	OH	YES	N/A	N/A	N/A
5593	1	20	1-EP-CB-1401	EP/HEAT TRACE CONTROL CABINET	11715-FE-63 SERIES	AUX	259'	9.5/L	S R 30	OH	OH	YES	N/A	N/A	N/A
5594	2	20	1-EP-CB-1401	EP/HEAT TRACE CONTROL CABINET	11715-FE-63 SERIES	AUX	259'	8/L	S R 30	OH	OH	YES	N/A	N/A	N/A
5595	1	20	1-EP-CB-4181	EP/HEAT TRACE CONTROL CABINET	11715-FE-63 SERIES	AFPH	271'	1.1/LA	S R 30	OH	OH	YES	N/A	N/A	N/A
5596	2	20	1-EP-CB-4181	EP/HEAT TRACE CONTROL CABINET	11715-FE-63 SERIES	AFPH	271'	1.1/LA	S R 30	OH	OH	YES	N/A	N/A	N/A
5599	1, 2	20	ANCAB15*	/ANNUNCIATOR CABINET - 15	DWG NOT AVAILABLE	AUX	259'		S R --	OH	OH	YES	N/A	N/A	N/A
5600	1, 2	20	ANCAB16*	/ANNUNCIATOR CABINET - 16	DWG NOT AVAILABLE	AUX	259'		S R --	OH	OH	YES	N/A	N/A	N/A
5601	1, 2	20	ANCAB17*	/ANNUNCIATOR CABINET - 17	DWG NOT AVAILABLE	AUX	274'		S R --	OH	OH	YES	N/A	N/A	N/A
5602	1, 2	20	ANCAB45*	/ANNUNCIATOR CABINET - 45	DWG NOT AVAILABLE	AFPH	274'		S R --	OH	OH	YES	N/A	N/A	N/A
5603A	1	0	JB-2661	/JUNCTION BOX	DWG NOT AVAILABLE	QSPH	280'	4.5/CB	S R 6	N/A	N/A	YES	N/A	N/A	N/A
5603B	1	0	JB-2662	/JUNCTION BOX	DWG NOT AVAILABLE	QSPH	280'	4.5/CB	S R 6	N/A	N/A	YES	N/A	N/A	N/A
5603C	1	0	JB-2663	/JUNCTION BOX	DWG NOT AVAILABLE	QSPH	280'	4.5/CB	S R 6	N/A	N/A	YES	N/A	N/A	N/A

CERTIFICATION:

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DAWN W. JACOBS / ENGINEER

MARCH 11, 1993

*Dawn W. Jacobs*

DAVID J. WERDER / ENGINEER

MARCH 11, 1993

*David J. Werder*

Signature

NORTH ANNA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
SUPPORTING SYSTEMS  
(Sorted by Line Number)

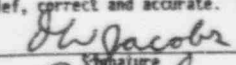
Data Base File Name/Date/Time: NAI\_SSEL.DBF / 03/11/93 / 09:33:18  
Sort Criteria: Line Number  
Filter Criteria: (Line Number >= '5000') AND (Line Number < '6000')  
Program File Name & Version: SSEL v0.0

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	EQUIPMENT		LOCATION		SORT NOTES		OP. ST.		POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS
					Building	Fir. Elev.	Rm. or Row/Col.		Normal	Desired					
(1)	(2)	(3)	(4)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	
5603B	1	0	JB-2664	/JUNCTION BOX	DWG NOT AVAILABLE	QSPH	280'	4.5/GB	S R 6	N/A	N/A	YES	N/A	N/A	
5603E	1	0	JB-2665	/JUNCTION BOX	DWG NOT AVAILABLE	QSPH	280'	4.5/GB	S R 6	N/A	N/A	YES	N/A	N/A	
5603F	1	0	JB-2666	/JUNCTION BOX	DWG NOT AVAILABLE	QSPH	280'	4.5/GB	S R 6	N/A	N/A	YES	N/A	N/A	
5604	1	21	1-RS-E-1A	RS/INSIDE RECIRC SPRAY COOLER A	11715-FM-091A3/20/C7	CONTHT	216'	9	S 26	N/A	N/A	NO	11715-FM-07882	SERVICE WATER	
5604	1	21	1-RS-E-1B	RS/INSIDE RECIRC SPRAY COOLER B	11715-FM-091A3/20/C5	CONTHT	216'	10	S 26	N/A	N/A	NO	11715-FM-07882	SERVICE WATER	
5606	2	21	1-RS-E-1C	RS/INSIDE RECIRC SPRAY COOLER C	11715-FM-091A4/24/D8	CONTHT	216'	9	S 26	N/A	N/A	NO	11715-FM-07882	SERVICE WATER	
5607	2	21	1-RS-E-1D	RS/INSIDE RECIRC SPRAY COOLER D	11715-FM-091A4/24/D7	CONTHT	216'	9	S 26	N/A	N/A	NO	11715-FM-07882	SERVICE WATER	

CERTIFICATION:

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DAWN W. JACOBS / ENGINEER

  
Signature

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

  
Signature

MARCH 11, 1993

LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	Fir. Elev.	EQUIPMENT LOCATION	ROOM, or Row/Col	OP. ST.	Normal	Desired REQ'D	DWG. NO./REV.	SUPPORTING COMPONENTS	
(1)	(2)	(3)	(4)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
5001	1	05	2-CC-P-1A	11715-FM-079A2/18/1E7 AUX		245'	9/N	S R 1	ON	OH	YES	N/A	N/A	
5002	1	21	2-CC-E-1A	11715-FM-079A2/18/1E5 AUX		274'	9/G	S --	N/A	N/A	NO	N/A	N/A	
5003	1	18	2-CC-F1-200A	11715-FM-079A2/18/1E4 AUX		263'	9.5/F	S R --	ON	ON	YES	12050-CC-002/4	N/A	
5004	1	20	2-CC-F1-200A	11715-FM-079A2/18/1E4 SB		277'	CR	S R 36	ON	ON	YES	12050-CC-002/4	2-EI-CB-04	
5005	1	05	2-CC-P-1B	11715-FM-079A2/18/1D7 AUX		245'	10/H	S R 1	ON	ON	YES	N/A	N/A	
5006	1	21	2-CC-E-1B	11715-FM-079A2/18/1D5 AUX		274'	10.5/F	S --	N/A	N/A	NO	N/A	N/A	
5007	1	18	2-CC-F1-200B	11715-FM-079A2/18/1D4 AUX		263'	9.5/F	S R --	ON	ON	YES	12050-CC-002/4	N/A	
5008	1	20	2-CC-F1-200B	11715-FM-079A2/18/1D4 SB		277'	CR	S R 36	ON	ON	YES	12050-CC-002/4	2-EI-CB-04	
5009	1	19	2-CC-TE-200	11715-FM-079A2/18/1D3 AUX		256'	10/G	S R --	ON	ON	YES	12050-CC-082/3	N/A	
5010	1	20	2-CC-T1-200	11715-FM-079A2/18/1D3 SB		277'	CR	S R 36	ON	ON	YES	12050-CC-082/3	2-EI-CB-04	
5011	1	18	2-CC-P1-200	11715-FM-079A2/18/1D3 AUX		245'	10.1/G	S R --	ON	ON	YES	12050-CC-096/3	N/A	
5012	1	20	2-CC-P1-200	11715-FM-079A2/18/1D3 SB		277'	CR	S R 36	ON	ON	YES	12050-CC-096/3	2-EI-CB-04	
5049	3	21	2-HV-E-6A	12050-FM-079A2/16/F6 CONTINT				S 23	N/A	N/A	NO	N/A	N/A	
5050	3	21	2-HV-E-6B	12050-FM-079A3/17/F6 CONTINT				S 23	N/A	N/A	NO	N/A	N/A	
5051	3	21	2-HV-E-6C	12050-FM-079A4/16/F6 CONTINT				S 23	N/A	N/A	NO	N/A	N/A	
5052	1	19	2-CC-TE-201	11715-FM-079A2/18/1E7 AUX		258'	10/E	S R --	ON	ON	YES	12050-CC-083/3	N/A	
5053	1	20	2-CC-T1-201A	11715-FM-079A2/18/1E7 SB		277'	CR	S R 36	ON	ON	YES	12050-CC-083/3	2-EI-CB-04	
5054	1	18	2-CC-F1-232A	12050-FM-079A1/19/F6 CONTINT		233' A	17.5	S R --	ON	ON	YES	12050-CC-047/4;	N/A	
												12050-FK-1B		
5055	1	20	2-CC-F1-232A-1	12050-FM-079A1/19/F6 SB		277'	CR	S R 36	ON	ON	YES	N/A	2-EI-CB-04	
5057	1	08A	2-CC-HV-200A	12050-FM-079A1/19/83 CONTINT		241'	14.2	S R 17	CLOSED	OPEN	YES	N/A	N/A	
5058	1	07	2-CC-TV-203A	12050-FM-079B1/17/A7 AUX		252'	11/L	S 1,27	OPEN	CLOSED	NO	12050-CC-061/5	2-CC-SOV-203A	
5058	1	07	2-CC-TV-203A	12050-FM-079B1/17/A7 AUX		252'	11/L	--	A,27	OPEN	NO	12050-CC-061/5	2-CC-SOV-203A	

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAWN M. JACOBS / ENGINEER  
  
 MARCH 11, 1993

DAVID J. MERDER / ENGINEER  
  
 MARCH 11, 1993



LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	Equipment Fir. Elev.	LOCATION	Normal	Desired	Notes	Supporting Sys. Dwg. No./Rev.	Req'd Interconnections			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
5059	1	088	2-CC-SOV-203A	CC/RHR HX OUTLET CONTROL ISOL PILOT	12050-FM-079A1/17/B7 AUX	252'	11/L	R	A, 27	AIR	YES	12050-CC-061/5	N/A		
5059	1	088	2-CC-SOV-203A	CC/RHR HX OUTLET CONTROL ISOL PILOT	12050-FM-079A1/17/B7 AUX	252'	11/L	S	R	1, 27	AIR	VENT	NO	12050-CC-061/5	N/A
5060	1	19	2-CC-TE-249A	CC/RHR HX COOLING WATER OUTLET TEMP	12050-FM-079A1/19/A8 AUX	251'	11/L	S	R	--	ON	ON	YES	12050-CC-079/2	N/A
5061	1	20	2-CC-11-249A	CC/RHR HX COOLING WATER OUTLET TEMP	12050-FM-079A1/19/A8 SB	277'	CR	S	R	36	ON	ON	YES	12050-CC-079/2	2-EI-CB-04
5062	1	18	2-CC-F1-232B	CC/CC HX FLOW TO RHR HX	12050-FM-079A1/19/F5 CONTINT	233' A	17.5	S	R	--	ON	ON	YES	12050-CC-048/4; 12050-FE-1B	N/A
5063	1	20	2-CC-F1-232B-1	CC/CC 2X FLOW TO RHR HX	12050-FM-079A1/19/F5 SB	277'	CR	S	R	36	ON	ON	YES	N/A	2-EI-CB-04
5065	1	08A	2-CC-HON-200B	CC/RHR HX OUTLET CONTROL VALVE	12050-FM-079A1/19/A3 CONTINT	241'	14.2	S	R	17	CLOSED	OPEN	YES	N/A	N/A
5066	2	07	2-CC-TV-203B	CC/RHR HX OUTLET CONTROL ISOL	12050-FM-079A1/17/B7 AUX	252'	11/L	S	1, 27	OPEN	CLOSED	NO	12050-CC-062/5	2-CC-SOV-203B	
5066	1	07	2-CC-TV-203B	CC/RHR HX OUTLET CONTROL ISOL	12050-FM-079A1/17/B7 AUX	252'	11/L	--	A, 27	OPEN	OPEN	NO	12050-CC-062/5	2-CC-SOV-203B	
5067	2	088	2-CC-SOV-203B	CC/RHR HX OUTLET CONTROL ISOL PILOT	12050-FM-079A1/17/C7 AUX	252'	11/L	S	R	1, 27	AIR	VENT	NO	12050-CC-062/5	N/A
5067	1	088	2-CC-SOV-203B	CC/RHR HX OUTLET CONTROL ISOL PILOT	12050-FM-079A1/17/C7 AUX	252'	11/L	R	A, 27	AIR	AIR	YES	12050-CC-062/5	N/A	
5068	1	19	2-CC-TE-249B	CC/RHR HX COOLING WATER OUTLET TEMP	12050-FM-079A1/19/C7 AUX	251'	11/L	S	R	--	ON	ON	YES	12050-CC-080/2	N/A
5069	1	20	2-CC-11-249B	CC/RHR HX COOLING WATER OUTLET TEMP	12050-FM-079A1/19/C7 SB	277'	CR	S	R	36	ON	ON	YES	12050-CC-080/2	2-EI-CB-04
5070	1	21	2-SS-E-34	SS/SAMPLE COOLER	12050-FM-079A1/19/E8 AUX	274'	9/K	S	23	N/A	N/A	NO	N/A	N/A	
5071	1	21	2-SS-E-35	SS/SAMPLE COOLER	12050-FM-079A1/19/E8 AUX	274'	9/K	S	23	N/A	N/A	NO	N/A	N/A	
5072	1	21	2-SS-E-36	SS/SAMPLE COOLER	12050-FM-079A1/19/E8 AUX	274'	9/K	S	23	N/A	N/A	NO	N/A	N/A	
5073	1, 2	R	2-CC-316	CC/SGRD VERT CONDENSER MANUAL ISOL	11715-FM-079A3/14/B3 AUX	291'	9/G	--	15	OPEN	CLOSED	NO	N/A	N/A	
5074	1, 2	R	2-CC-321	CC/SGRD VERT CONDENSER MANUAL ISOL	11715-FM-079A3/14/C4 AUX	291'	9/G	--	15	OPEN	CLOSED	NO	N/A	N/A	
5074A	1	R	2-CC-43	CC/MONREGEN HX CC MANUAL ISOL	11715-FM-079A3/14/E5 CONTINT	--	---	--	15	OPEN	CLOSED	NO	N/A	N/A	
5074B	1	R	2-CC-50	CC/MONREGEN HX CC MANUAL ISOL	11715-FM-079A3/14/E2 CONTINT	--	---	--	15	OPEN	CLOSED	NO	N/A	N/A	

CERTIFICATION:  
 The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAWN V. JACOBS / ENGINEER  
 MARCH 11, 1993

*[Signature]*  
 Signature

DAVID J. WEDDER / ENGINEER  
 MARCH 11, 1993

*[Signature]*  
 Signature

NORTH ANNA UNIT 2  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
SUPPORTING SYSTEMS  
(Sorted by Line Number)

Data Base File Name/Date/Time: NA2\_SSEL.DBF / 03/11/93 / 09:30:38  
Sort Criteria: Line Number  
Filter Criteria: (Line Number >= '5000') AND (Line Number < '6000')  
Program File Name & Version: SSEL v0.0

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zonn	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQD?	SUPPORTING SYS. DMG. NO./REV.	SYS. & SUPPORTING COMPONENTS	REQ'D INTERCONNECTIONS	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10) (11)	(12)	(13)	(14)	(15)	(16)	(16)	
5077	1	21	2-BG-E-1	DG/PRIMARY DRAIN TRANSFER COOLER	12050-FM-079AS/17/A6	CONTHT	216'	12.5	S	23	N/A	N/A	NO	N/A	N/A	
5082	1	21	2-MS-E-1A	MS/NEUTRON SHIELD TANK COOLER	12050-FM-079AS/17/E7	CONTHT	216'	17.5	S	23	N/A	N/A	NO	N/A	N/A	
5083	1	21	2-MS-E-1B	MS/NEUTRON SHIELD TANK COOLER	12050-FM-079AS/17/E5	CONTHT	216'	17.5	S	23	N/A	N/A	NO	N/A	N/A	
5084	1	19	2-CC-TE-250A	CC/RHR PUMP SEAL COOLER OUTLET TEMP	12050-FM-079AS/17/C4	CONTHT	231'	1	S	R	ON	ON	YES	12050-CC-026/1	N/A	
5085	1	19	2-CC-TE-250B	CC/RHR PUMP SEAL COOLER OUTLET TEMP	12050-FM-079AS/17/B4	CONTHT	231'	1.5	S	R	ON	ON	YES	12050-CC-027/1	N/A	
5086	1	07	2-MS-LCY-201	MS/NEUTRON SHIELD SURGE TANK OUTLET ISOL	12050-FM-079AS/17/D3	CONTHT	--	--	--	--	CLOSED	CLOSED	NO	N/A	N/A	
5087	1	08B	2-MS-SOY-201	MS/NEUTRON SHIELD SURGE TANK OUTLET ISOL PILOT	12050-FM-079AS/17/D3	CONTHT	--	--	R	34	VENT	VENT	NO	N/A	N/A	
5143	1	20	2-EI-CB-01	EI/BENCH BOARD 2-1	11715-FE-027B/33	SB	277'	CR	S	R	--	N/A	N/A	YES	N/A	N/A
5144	1	20	2-EI-CB-02	EI/BENCH BOARD 2-2	11715-FE-027B/33	SB	277'	CR	S	R	--	N/A	N/A	YES	N/A	N/A
5145	1	20	2-EI-CB-03	EI/VERTICAL BOARD 2-1	11715-FE-027B/33	SB	277'	CR	S	R	--	N/A	N/A	YES	N/A	N/A
5146	1	20	2-EI-CB-04	EI/VERTICAL BOARD 2-2	11715-FE-027B/33	SB	277'	CR	S	R	--	N/A	N/A	YES	N/A	N/A
5147	1	20	2-EI-CB-05	EI/VERTICAL BOARD 2-3	11715-FE-027B/33	SB	277'	CR	S	R	--	N/A	N/A	YES	N/A	N/A
5148	1	20	2-EI-CB-06A	EI/AUXILIARY SHUTDOWN PANEL	12050-FE-027A/20	SB	254'	EMER SWGR	S	R	--	N/A	N/A	YES	N/A	N/A
5149	1	20	2-EI-CB-06B	EI/AUXILIARY SHUTDOWN PANEL	12050-FE-027A/20	SB	254'	EMER SWGR	S	R	--	N/A	N/A	YES	N/A	N/A
5150	1	20	2-EI-CB-18A	EI/COMPUTER I/O CABINET #0	11715-FE-027B/33	SB	277'	COMP #2	S	R	--	N/A	N/A	YES	N/A	N/A
5151	1	20	2-EI-CB-18B	EI/COMPUTER I/O CABINET #1	11715-FE-027B/33	SB	277'	COMP #2	S	R	--	N/A	N/A	YES	N/A	N/A
5152	1	20	2-EI-CB-18C	EI/COMPUTER I/O CABINET #2	11715-FE-027B/33	SB	277'	COMP #2	S	R	--	N/A	N/A	YES	N/A	N/A
5153	1	20	2-EI-CB-21	EI/CONTROL PANEL	11715-FE-027B/33	SB	277'	LOGIC	S	R	--	N/A	N/A	YES	N/A	N/A
5154	1	20	2-EI-CB-21A	EI/CONTROL PANEL	DMG NOT AVAILABLE	SM	252'	8.4/D	S	R	--	N/A	N/A	YES	N/A	N/A
5155	1	20	2-EI-CB-23A	EI/PROCESS CABINET A	12050-FE-027A/20	SB	252'	IRR #2	S	R	41	N/A	N/A	YES	N/A	N/A
5156	1	20	2-EI-CB-23B	EI/PROCESS CABINET B	12050-FE-027A/20	SB	252'	IRR #2	S	R	41	N/A	N/A	YES	N/A	N/A

CERTIFICATION:

The undersigned certifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DANN W. JACOBS / ENGINEER

*DW Jacobs*  
Signature

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

*DJ Werder*  
Signature

MARCH 11, 1993

NORTH AMMA UNIT 2  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
SUPPORTING SYSTEMS  
(Sorted by Line Number)

Data Base File Name/Date/Time: MA2\_SSEL.DBF / 03/11/93 / 09:30:38  
Sort Criteria: Line Number  
Filter Criteria: (Line Number >= '0000') AND (Line Number < '6000')  
Program File Name & Version: SSEL v3.0

LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT LOCATION	SOBT NOTES	Normal	OP. ST.	POWER SUPPORTING SYS. REQ'D	INTERCONNECTIONS				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
5157	1	20	2-EI-CB-23C	EI/PROCESS CABINET C	12050-FE-027A/20	SB	252'	IRR R2	S R 41	N/A	N/A	YES	N/A	N/A	N/A
5158	1	20	2-EI-CB-23D	EI/PROCESS CABINET D	12050-FE-027A/20	SB	252'	IRR R2	S R 41	N/A	N/A	YES	N/A	N/A	N/A
5159	1	20	2-EI-CB-23E	EI/PROCESS CABINET E	12050-FE-027A/20	SB	252'	IRR R2	S R 41	N/A	N/A	YES	N/A	N/A	N/A
5160	1	20	2-EI-CB-23F	EI/PROCESS CABINET F	12050-FE-027A/20	SB	252'	IRR R2	S R 41	N/A	N/A	YES	N/A	N/A	N/A
5161	1	20	2-EI-CB-25	EI/CONTROL PANEL	11715-FE-027B/33	SB	277'	LOGIC	S R --	N/A	N/A	YES	N/A	N/A	N/A
5162	1	20	2-EI-CB-300	EI/CONTROL PANEL	DWG NOT AVAILABLE	SB	277'	8.8/70	S R --	N/A	N/A	YES	N/A	N/A	N/A
5163	1	20	2-EI-CB-301C	EI/CONTROL PANEL	12050-FE-027A/20	SV	252'	30 B/C	S R --	N/A	N/A	YES	N/A	N/A	N/A
5164	1	20	2-EI-CB-34	EI/POST ACCIDENT MONITORING & CONTROL PANEL	11715-FE-027B/33	SB	277'	CR	S R --	N/A	N/A	YES	N/A	N/A	N/A
5165	1	20	2-EI-CB-47A	EI/SOLID STATE PROTECTION INPUT CABINET (TRAIN A)	12050-1.31 SERIES	SB	252'	IRR R1	S R 41	N/A	N/A	YES	N/A	N/A	N/A
5166	1	20	2-EI-CB-47B	EI/SOLID STATE PROTECTION INPUT CABINET (TRAIN B)	12050-1.31 SERIES	SB	252'	IRR R1	S R 41	N/A	N/A	YES	N/A	N/A	N/A
5167	1	20	2-EI-CB-47C	EI/SOLID STATE PROTECTION LOGIC CABINET (TRAIN A)	12050-1.31 SERIES	SB	252'	IRR R2	S R 41	N/A	N/A	YES	N/A	N/A	N/A
5168	1	20	2-EI-CB-47D	EI/SOLID STATE PROTECTION LOGIC CABINET (TRAIN B)	12050-1.31 SERIES	SB	252'	IRR R2	S R 41	N/P	N/A	YES	N/A	N/A	N/A
5169	1	20	2-EI-CB-47E	EIP/SOLID STATE PROTECTION OUTPUT CABINET (TRAIN A)	12050-1.31 SERIES	SB	252'	IRR R2	S R 41	N/A	N/A	YES	N/A	N/A	N/A
5170	1	20	2-EI-CB-47F	EI/SOLID STATE PROTECTION OUTPUT CABINET (TRAIN B)	12050-1.31 SERIES	SB	252'	IRR R2	S R 41	N/A	N/A	YES	N/A	N/A	N/A
5171	1	20	2-EI-CB-48A	EI/AUXILIARY RELAY RACK 1	12050-FE-027A/20	SB	252'	IRR R2	S R 41	N/A	N/A	YES	N/A	N/A	N/A
5172	1	20	2-EI-CB-51	EI/PRIMARY PLANT PROCESS CABINET 1	12050-FE-027A/20	SB	252'	IRR R2	S R --	N/A	N/A	YES	N/A	N/A	N/A
5173	1	20	2-EI-CB-52	EI/PRIMARY PLANT PROCESS CABINET 2	12050-FE-027A/20	SB	252'	IRR R2	S R --	N/A	N/A	YES	N/A	N/A	N/A
5174	1	20	2-EI-CB-53	EI/PRIMARY PLANT PROCESS CABINET 3	12050-FE-027A/20	SB	252'	IRR R2	S R --	N/A	N/A	YES	N/A	N/A	N/A
5175	1	20	2-EI-CB-54	EI/PRIMARY PLANT PROCESS CABINET 4	12050-FE-027A/20	SB	252'	IRR R2	S R --	N/A	N/A	YES	N/A	N/A	N/A

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this SSEL Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAVID W. JACOBS / ENGINEER  
  
 Signature

MARCH 11, 1993  
 MARCH 11, 1993

DAVID J. WERDER / ENGINEER

NORTH AREA UNIT 2  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
SUPPORTING SYSTEMS  
(Sorted by Line Number)

Data Base File Name/Date/Time: NA2\_SSEL.DBF / 03/11/93 / 09:30:38  
Sort Criteria: Line Number  
Filter Criteria: (Line Number >= 5000) AND (Line Number < 6000)  
Program File Name & Version: SSEL V0.0

LINE NO.	EQUIP TRAIL CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT LOCATION	OP. ST.	POWER SUPPORTING SYS.	REV'D INTERCONNECTIONS						
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
5176	1	20	2-EI-CB-55	EI/PRIMARY PLANT PROCESS CABINET 5	12050-FE-027A/20	SB	252'	1RR 82	5 R --	N/A	N/A	YES	N/A	N/A	N/A
5177	1	20	2-EI-CB-56	EI/PRIMARY PLANT PROCESS CABINET 6	12050-FE-027A/20	SB	252'	1RR 82	5 R --	N/A	N/A	YES	N/A	N/A	N/A
5178	1	20	2-EI-CB-57	EI/PRIMARY PLANT PROCESS CABINET 7	12050-FE-027A/20	SB	252'	1RR 82	5 R --	N/A	N/A	YES	N/A	N/A	N/A
5179	1	20	2-EI-CB-58	EI/PRIMARY PLANT PROCESS CABINET 8	12050-FE-027A/20	SB	252'	1RR 82	5 R --	N/A	N/A	YES	N/A	N/A	N/A
5180	1	20	2-EI-CB-60A	EI/SAFEGUARDS TEST CABINET A	12050-1.31 SERIES	SB	252'	1RR 82	5 R --	N/A	N/A	YES	N/A	N/A	N/A
5181	1	20	2-EI-CB-62B	EI/SAFEGUARDS TEST CABINET B	12050-1.31 SERIES	SB	252'	1RR 82	5 R --	N/A	N/A	YES	N/A	N/A	N/A
5182	1	20	2-EI-CB-64A	EI/SOLID STATE PROT SYS AUX RELAY RACK	12050-1.28-45B	SB	252'	1RR 82	5 R 41	N/A	N/A	YES	N/A	N/A	N/A
5183	1	20	2-EI-CB-64B	EI/SOLID STATE PROT SYS AUX RELAY RACK	12050-1.28-45B	SB	252'	1RR 82	5 R 41	N/A	N/A	YES	N/A	N/A	N/A
5184	1	20	2-EI-CP-04	EI/MICROPROCESSOR CABINET	11715-FE-027B/23	SB	277'	CR	5 R --	N/A	N/A	YES	N/A	N/A	N/A
5184A	1	20	2-EI-CP-7	EI/MSC LOGIC PANEL	12050-FE-027A/20	SB	252'	1RR 82	5 R 6,41	N/A	N/A	YES	N/A	N/A	N/A
5184B	1	20	2-EI-CB-202	EI/EMERG SWGR RM DG ISOL PANEL (N-TRAIN)	12050-FE-027A/20	SB	254'	EMER SWGR	5 R 6,41	N/A	N/A	YES	N/A	N/A	N/A
5185	1	20	2-EP-CB-10C	EP/PZR DISTRIBUTION PANEL 82	DWG NOT AVAILABLE	RCOM	280'	12/JK	5 R --	N/A	N/A	YES	12050-BC-108/8	N/A	N/A
5186	1	20	2-EP-CB-10F	EP/RCS PZR CONTROL PANEL	DWG NOT AVAILABLE	RCOM	280'	12/	5 R --	N/A	N/A	YES	12050-BC-108/8	N/A	N/A
5187	1	20	2-EP-CB-204	EP/APPENDIX R ISOL PANEL	12050-FE-027A/20	SB	254'	EMER SWGR	5 R --	N/A	N/A	YES	N/A	N/A	N/A
5188	1	20	2-EP-CB-28A	EP/AUXILIARY RELAY RACK A	12050-FE-027A/20	SB	252'	1RR 82	5 R 41	N/A	N/A	YES	N/A	N/A	N/A
5189	1	20	2-EP-CB-28B	EP/AUXILIARY RELAY RACK B	12050-FE-027A/20	SB	252'	1RR 82	5 R 41	N/A	N/A	YES	N/A	N/A	N/A
5190	1	20	2-EP-CB-28C	EP/AUXILIARY RELAY RACK C	12050-FE-027A/20	SB	252'	1RR 82	5 R 41	N/A	N/A	YES	N/A	N/A	N/A
5190A	1	20	2-EP-CB-28E	EP/AUXILIARY RELAY RACK E	12050-FE-027B/20	SB	252'	1RR 82	5 R 6,41	N/A	N/A	YES	N/A	N/A	N/A
5190B	1	20	2-EP-CB-28F	EP/AUXILIARY RELAY RACK F	12050-FE-027A/20	SB	252'	1RR 82	5 R 6,41	N/A	N/A	YES	N/A	N/A	N/A
5190C	1	20	2-EP-CB-28G	EP/AUXILIARY RELAY RACK G	12050-FE-027A/20	SB	252'	1RR 82	5 R 6,41	N/A	N/A	YES	N/A	N/A	N/A
5191	1	20	2-EP-CB-28H	EP/SW LOGIC CABINET 2A	12050-FE-027A/20	SB	252'	1RR 82	5 R 41	N/A	N/A	YES	N/A	N/A	N/A

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAWN W. JACOBS / ENGINEER

*Dawn W. Jacobs*  
Signature

MARCH 11, 1993

DAVID J. VERDER / ENGINEER

*David J. Verder*  
Signature

MARCH 11, 1993

LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT LOCATION	OP. ST.	POWER SUPPORTING SYS.	REQ'D INTERCONNECTIONS						
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
5191A	1	20	2-EP-CB-28HX	EP/SM LOGIC CABINET 2AX	12050-FE-027N/20	SB	252'	1RR R2	S R 6,41	N/A	N/A	YES	N/A	N/A	N/A
5191B	1	20	2-EP-CB-28J	EP/SM LOGIC CABINET 2B	12050-FE-027N/20	SB	252'	1RR R2	S R 6,41	N/A	N/A	YES	N/A	N/A	N/A
5191C	1	20	2-EP-CB-28JX	EP/SM LOGIC CABINET 2BX	12050-FE-027N/20	SB	252'	1RR R2	S R 6,41	N/A	N/A	YES	N/A	N/A	N/A
5191D	1	20	2-EP-CB-46A	EP/RT TRACE ANNOUNC CABINT	12050-FE-063AP/09	APPH	--	--	--	1B	N/A	N/A	N/A	N/A	N/A
5191E	1	20	2-EP-CB-63A	EP/LOOP STOP VALVE LOGIC CABINET BACK A	12050-1.32 SERIES	SB	252'	1RR R2	S R 6,41	N/A	N/A	YES	N/A	N/A	N/A
5191F	1	20	2-EP-CB-63B	EP/LOOP STOP VALVE LOGIC CABINET BACK B	12050-1.32 SERIES	SB	252'	1RR R2	S R 6,41	N/A	N/A	YES	N/A	N/A	N/A
5191G	1	20	2-EI-CB-115A	EI/COMT ISOL TRIP VALVE RELAY PANEL A	12050-FE-188K	AUX	261'	ELEC TUNNEL R2	S R 6,41	N/A	N/A	YES	N/A	N/A	N/A
5191H	1	20	2-EP-CB-28BT	EP/COMT ISOL TRIP VALVE RELAY PANEL	12050-FE-36J/16/2F	SB	252'	CABLE VAULT R2	S R 6,41	N/A	N/A	NO	12050-RE-148/2	N/A	N/A
5191I	1	20	2-EP-CB-121A	EP/COMT ISOL TRIP VALVE RELAY PANEL	13075-FE-39F	SB	277'	COMPUTER RM R2	S R 6,41	N/A	N/A	YES	12050-SS-007/5	2-EP-CB-19A	N/A
5191J	1	20	2-EP-CB-121B	EP/COMT ISOL TRIP VALVE RELAY PANEL	13075-FE-39F	SB	277'	COMPUTER RM R2	S R 6,41	N/A	N/A	YES	12050-SS-007/5	2-EP-CB-19B	N/A
5191K	1	20	2-EI-CB-116A	EI/COMT ISOL TRIP VALVE RELAY PANEL B	12050-FE-188K	AUX	259'	ELEC TUNNEL R2	S R 6,41	N/A	N/A	YES	N/A	N/A	N/A
5191L	1	20	2-EI-CB-116D	EI/COMT ISOL TRIP VALVE RELAY PANEL B-3	DMG NOT AVAILABLE	CONTINT	260'		S R 6,41	N/A	N/A	YES	N/A	N/A	N/A
5191M	1	20	2-EI-CB-116D	EI/COMT ISOL TRIP VALVE RELAY PANEL B-3	DMG NOT AVAILABLE	CONTINT	260'		S R 6,41	N/A	N/A	YES	N/A	N/A	N/A
5192	1	21	2-HV-TK-6A	RV/CHILLED WATER EXPANSION TANK	11715-FB-040A2/13	SB	264'	CHILLER R2	S --	N/A	N/A	NO	N/A	N/A	N/A
5193	2	21	2-HV-TK-6B	RV/CHILLED WATER EXPANSION TANK	11715-FB-040A2/13	SB	264'	CHILLER RM	S --	N/A	N/A	NO	N/A	N/A	N/A
5194	1	05	2-HV-P-20A	RV/CHILLED WATER PUMP	11715-FB-040A2/13	SB	257'	CHILLER RM	S R --	RUNNING	RUNNING	YES	N/A	N/A	N/A
5195	1	19	2-HV-TC-2200A	RV/CHILLED WATER P. DISCH. TEMP.	11715-FB-040A2/13	SB	254'	CHILLER RM	S R --	ON	ON	YES	N/A	N/A	N/A
5199	1	18	2-HV-FS-2213A	RV/CHILLER FLOW SWITCH	11715-FB-040A2/13	SB	264'	CHILLER RM	S R --	ON	ON	YES	N/A	N/A	N/A

CERTIFICATION:  
 The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAWN W. JACOBS / ENGINEER  
 Signature: *[Signature]*  
 MARCH 11, 1993

DAVID J. WERGER / ENGINEER  
 Signature: *[Signature]*  
 MARCH 11, 1993

LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	DOG. NO./REV./ZONE	BUILDING	FIR. ELEV.	EQUIPMENT LOCATION	LOC. RM. OR BAY/COIL	NOTES	STATUS	POWER SUPPLYING SYS.	REQ'D INTERCONNECTIONS			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
5200	1	08A	2-HV-MW-211A	HV/CHILLER OUTLET ISOLATION VALVE	11715-FB-040A2/13	SB	264'	CHILLER RM	R	--	OPEN	OPEN	NO	N/A	N/A
5201	2	05	2-HV-P-208	HV/CHILLED WATER PUMP	11715-FB-040A2/13	SB	257'	CHILLER RM	S R	--	RUNNING	RUNNING	YES	N/A	N/A
5202	2	19	2-HV-TC-2200B	HV/CHILLED WATER P. DISCH. TEMP.	11715-FB-040A2/13	SB	254'	CHILLER RM	S R	--	ON	ON	YES	N/A	N/A
5205	2	18	2-HV-FS-2213B	HV/CHILLER FLOW SWITCH	11715-FB-040A2/13	SB	264'	CHILLER RM	S R	--	ON	ON	YES	N/A	N/A
5205A	2	18	2-HV-FS-2213C	HV/CHILLER FLOW SWITCH	11715-FB-040A2/13	SB	254'	12/D	S R	--	ON	ON	YES	N/A	N/A
5206	2	08A	2-HV-MW-211B	HV/CHILLER OUTLET ISOLATION VALVE	11715-FB-040A2/13	SB	264'	CHILLER RM	R	--	OPER	OPER	NO	N/A	N/A
5217	2	R	2-HV-Y-1*	HV/STANDBY CHILLER MANUAL ISOL	11715-FB-040A2/13/07	SB	--	--	--	15	CLOSED	OPEN	NO	N/A	N/A
5218	2	R	2-HV-Y-2*	HV/STANDBY CHILLER MANUAL ISOL	11715-FB-040A2/13/07	SB	--	--	--	15	CLOSED	OPEN	NO	N/A	N/A
5219	2	R	2-HV-Y-3*	HV/STANDBY CHILLER MANUAL ISOL	11715-FB-040A2/13/04	SB	--	--	--	15	CLOSED	OPEN	NO	N/A	N/A
5220	2	R	2-HV-Y-4*	HV/STANDBY CHILLER MANUAL ISOL	11715-FB-040A2/13/04	SB	--	--	--	15	CLOSED	OPEN	NO	N/A	N/A
5221	2	05	2-HV-P-20C	HV/CHILLED WATER PUMP	11715-FB-040A2/13/05	SB	257'	CHILLER RM	S R	--	OFF	RUNNING	YES	N/A	N/A
5223	2	19	2-HV-TC-2200C	HV/CHILLED WATER P. DISCH. TEMP.	11715-FB-040A2/13/05	SB	254'	CHILLER RM	S R	--	OFF	ON	YES	N/A	N/A
5226	2	08A	2-HV-MW-211C	HV/CHILLER OUTLET ISOL	11715-FB-040A2/13/05	SB	264'	CHILLER RM	R	--	OPEN	OPEN	NO	N/A	N/A
5226A	1, 2	0	2-HV-S-1A	HV/SELF CLEARING STRAINER	11715-FB-04002/13/08	SB	254'	CHILLER RM 11/C	S R	--	ON	ON	YES	N/A	N/A
5226B	1, 2	0	2-HV-S-1B	HV/SELF CLEARING STRAINER	11715-FB-04002/13/08	SB	254'	CHILLER RM 11/C	S R	--	ON	ON	YES	N/A	N/A
5226C	1	05	2-HV-P-22A	HV/CR & RELAY ROOM WATER SYSTEM BOOSTER PUMP	11715-FB-04002/13/06	SB	254'	CHILLER RM 11/C	S R	--	ON	ON	YES	N/A	N/A
5226D	1	05	2-HV-P-22B	HV/CR & RELAY ROOM WATER SYSTEM BOOSTER PUMP	11715-FB-04002/13/06	SB	254'	CHILLER RM 12/C	S R	--	ON	ON	YES	N/A	N/A
5226E	2	05	2-HV-P-22C	HV/CR & RELAY ROOM WATER SYSTEM BOOSTER PUMP	11715-FB-04002/13/06	SB	254'	CHILLER RM 11/C	S R	--	OFF	ON	YES	N/A	N/A
5226F	2	R	2-SM-335	HV/CR & RELAY ROOM WATER SYSTEM CROSS-TIE VALVE	11715-FB-04002/13/C7	SB	254'	CHILLER RM	--	15	CLOSED	OPEN	NO	N/A	N/A
5226G	1	11	2-HV-E-4A	HV/CHILLER UNIT	11715-FB-04002/13/ES	SB	254'	CHILLER RM 11/D	S	--	ON	ON	YES	11715-FB-040A2	2-EP-MC-10
5226H	1	11	2-HV-E-4B	HV/CHILLER UNIT	11715-FB-04002/13/BS	SB	254'	CHILLER RM 12/D	S	--	ON	ON	YES	11715-FB-040A2	2-EP-MC-11

CERTIFICATION:

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DAWN V. JACOBS / ENGINEER  
 Signature: *Dawn V. Jacobs*  
 MARCH 11, 1993

DAVID J. WERDER / ENGINEER  
 Signature: *David J. Werder*  
 MARCH 11, 1993

LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	Fr. Elev.	EQUIPMENT LOCATION	OP. ST.	Normal	Desired	REQ'D	SYS.	REQ'D	INTERCONNECTIONS	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
52261	2	11	2-HV-E-4C	RV/CHILLER UNIT	11715-FB-04002/13/05	SB	254'	CHILLER RM	12/0	S	OH	OH	YES	11715-FB-04002	2-EP-NE-41
5226J	1	07	2-HV-PCV-2235A2	RV/CR & RR WATER SYSTEM FLOW CONTROL	11715-FB-04002/13/03	SB	254'	CHILLER RM			OPEN	OPEN	NO	12050-HV-015/2	N/A
5226K	1	07	2-HV-PCV-2235B2	RV/CR & RR WATER SYSTEM FLOW CONTROL	11715-FB-04002/13/03	SB	254'	CHILLER RM			OPEN	OPEN	NO	12050-HV-016/2	N/A
5226L	2	07	2-HV-PCV-2235C2	RV/CR & RR WATER SYSTEM FLOW CONTROL	11715-FB-04002/13/03	SB	254'	CHILLER RM			OPEN	OPEN	NO	12050-HV-017/2	N/A
5226M	1	18	2-HV-PC-2235A	RV/CR & RR WATER SYSTEM FLOW CONTROL	11715-FB-04002/13/05	SB	254'	CHILLER RM	S	--	VENT	VENT	NO	N/A	N/A
5226N	1	18	2-HV-PC-2235B	RV/CR & RR WATER SYSTEM FLOW CONTROL	11715-FB-04002/13/05	SB	254'	CHILLER RM	S	--	VENT	VENT	NO	N/A	N/A
5226O	2	18	2-HV-PC-2235C	RV/CR & RR WATER SYSTEM FLOW CONTROL	11715-FB-04002/13/05	SB	254'	CHILLER RM	S	--	VENT	VENT	NO	N/A	N/A
5226P	1	08A	2-HV-MOV-213A	RV/CR & RR WATER SYSTEM ISOL	11715-FB-04002/13/03	SB	254'	CHILLER RM	R	--	OPEN	OPEN	NO	N/A	N/A
5226Q	1	08A	2-HV-MOV-213B	RV/CR & RR WATER SYSTEM ISOL	11715-FB-04002/13/03	SB	254'	CHILLER RM	R	--	OPEN	OPEN	NO	N/A	N/A
5226R	2	08A	2-HV-MOV-213C	RV/CR & RR WATER SYSTEM ISOL	11715-FB-04002/13/03	SB	254'	CHILLER RM	R	--	OPEN	OPEN	NO	N/A	N/A
5226S	2	R	2-SW-357	RV/CR & RR WATER SYSTEM CROSS-TIE VALVE	11715-FB-04002/13/03	SB	254'	CHILLER RM	--	15	CLOSED	OPEN	NO	N/A	N/A
5227	1	18	2-HV-PDS-2228A	RV/CMD VTR STRAINER DIFF PRESS	11715-FB-04002/13	SB	258'	CHILLER RM	S	R	OH	OH	YES	N/A	N/A
5228	1	18	2-HV-PDS-2228B	RV/CMD VTR STRAINER DIFF PRESS	11715-FB-04002/13	SB	258'	CHILLER RM	S	R	OH	OH	YES	N/A	N/A
5232	1	18	2-HV-FS-2215A	RV/CMD VTR PUMP SEAL FLOW SWITCH	11715-FB-04002/13	SB	254'	11/C	S	R	OH	OH	YES	N/A	N/A
5233	1	18	2-HV-FS-2215B	RV/CMD VTR PUMP SEAL FLOW SWITCH	11715-FB-04002/13	SB	256'	CHILLER RM	S	R	OH	OH	YES	N/A	N/A
5234	2	18	2-HV-FS-2215C	RV/CMD VTR PUMP SEAL FLOW SWITCH	11715-FB-04002/13	SB	256'	CHILLER RM	S	R	OH	OH	YES	N/A	N/A
5235	1	08B	2-HV-SOV-2200A	RV/CMD VTR PUMP SEAL FLOW CONTROL	11715-FB-04002/13	SB	256'	CHILLER RM	S	R	OP/CL	OPEN	YES	N/A	N/A
5236	1	08B	2-HV-SOV-2200B	RV/CMD VTR PUMP SEAL FLOW CONTROL	11715-FB-04002/13	SB	256'	CHILLER RM	S	R	OP/CL	OPEN	YES	N/A	N/A
5237	2	08B	2-HV-SOV-2200C	RV/CMD VTR PUMP SEAL FLOW CONTROL	11715-FB-04002/13	SB	256'	CHILLER RM	S	R	OP/CL	OPEN	YES	N/A	N/A

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 The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAWN W. JACOBS / ENGINEER  
 MARCH 11, 1993

DAVID J. WEEDER / ENGINEER  
 MARCH 11, 1993

LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	Equipment Location	Sort Notes	Normal	Desired	REQ'D INTERCONNECTIONS			
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
5238	1	10	2-HV-AC-6	HW/RELAY ROOM AIR COND.	11715-FB-04AC3/07/87 SB	252'	12/70	5 R --	ON	ON	YES	N/A	N/A
5239	1	10	1-HV-AC-6	HW/RELAY ROOM AIR COND.	11715-FB-04AC3/07/87 SB	252'	12/70	5 R --	ON	ON	YES	11715-FB-40M/13 N/A	N/A
5240	1	0	1-HV-MOD-137	HW/AIR COND. FAN DISCH. DAMPER	11715-FB-04AC3/07/87 SB	252'	12/70	5	36	ON	YES	N/A	1-HV-AC-6
5241	1	0	2-HV-MOD-237	HW/AIR COND. FAN DISCH. DAMPER	11715-FB-04AC3/07/87 SB	252'	12/70	5	36	ON	YES	N/A	2-HV-AC-6
5242	1	07	1-HV-TCV-166	HW/CHILLED WATER CONTROL VALVE	11715-FB-04AC3/07/87 SB	252'	12/70	5 R --	OPEN	OPEN	NO	N/A	N/A
5243	1	07	2-HV-TCV-266	HW/CHILLED WATER CONTROL VALVE	11715-FB-04AC3/07/87 SB	252'	12/70	5 R --	OPEN	OPEN	NO	N/A	N/A
5244	1	18	1-HV-TT-166	HW/RELAY ROOM TEMP. TRANS.	11715-FB-04AC3/07/87 SB	252'	12/70	5 R 36	ON	ON	YES	N/A	1-HV-AC-6
5245	1	18	2-HV-TT-266	HW/RELAY ROOM TEMP. TRANS.	11715-FB-04AC3/07/87 SB	252'	12/70	5 R 36	ON	ON	YES	N/A	2-HV-AC-6
5248	2	10	2-HV-AC-7	HW/RELAY ROOM AIR COND.	11715-FB-04AC3/07/87 SB	252'	12/70	5 R --	ON	ON	YES	N/A	N/A
5249	2	10	1-HV-AC-7	HW/RELAY ROOM AIR COND.	11715-FB-04AC3/07/87 SB	252'	12/70	5 R --	ON	ON	YES	11715-FB-40M/13 N/A	N/A
5250	2	0	1-HV-MOD-138	HW/AIR COND. FAN DISCH. DAMPER	11715-FB-04AC3/07/87 SB	252'	12/70	5	36	ON	YES	N/A	1-HV-AC-7
5251	2	0	2-HV-MOD-238	HW/AIR COND. FAN DISCH. DAMPER	11715-FB-04AC3/07/87 SB	252'	12/70	5	36	ON	YES	N/A	2-HV-AC-7
5253	2	07	1-HV-TCV-167	HW/CHILLED WATER CONTROL VALVE	11715-FB-04AC3/07/87 SB	252'	12/70	5 R --	OPEN	OPEN	NO	N/A	N/A
5254	2	07	2-HV-TCV-267	HW/CHILLED WATER CONTROL VALVE	11715-FB-04AC3/07/87 SB	252'	12/70	5 R --	OPEN	OPEN	NO	N/A	N/A
5255	2	18	1-HV-TT-167	HW/RELAY ROOM TEMP. TRANS.	11715-FB-04AC3/07/87 SB	252'	12/70	5 R 36	ON	ON	YES	N/A	1-HV-AC-7
5256	2	18	2-HV-TT-267	HW/RELAY ROOM TEMP. TRANS.	11715-FB-04AC3/07/87 SB	252'	12/70	5 R 36	ON	ON	YES	N/A	2-HV-AC-7
5259	1	10	2-HV-AC-8	HW/CONTROL ROOM AIR CONDITIONER	11715-FB-04AC3/07/87 SB	277'	10/70	5 R --	ON	ON	YES	11715-FB-40M/13 N/A	N/A
5260	1	10	1-HV-AC-1	HW/CONTROL ROOM AIR CONDITIONER	11715-FB-04AC3/07/87 SB	277'	10/70	5 R --	ON	ON	YES	N/A	N/A
5261	1	0	1-HV-MOD-135	HW/AIR COND. FAN DISCH. DAMPER	11715-FB-04AC3/07/87 SB	277'	10/70	5	36	ON	YES	N/A	1-HV-AC-1
5262	1	0	2-HV-MOD-235	HW/AIR COND. FAN DISCH. DAMPER	11715-FB-04AC3/07/87 SB	277'	10/70	5	36	ON	YES	N/A	2-HV-AC-8
5263	1	07	1-HV-TCV-155	HW/CHILLED WATER CONTROL VALVE	11715-FB-04AC3/07/87 SB	277'	10/70	5 R --	OPEN	OPEN	NO	N/A	N/A
5264	1	07	2-HV-TCV-255	HW/CHILLED WATER CONTROL VALVE	11715-FB-04AC3/07/87 SB	277'	10/70	5 R --	OPEN	OPEN	NO	N/A	N/A

CERTIFICATION:  
 The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAWN W. JACOBS / ENGINEER  
 MARCH 11, 1993  
 DAWN W. JACOBS  
 Signature  
 MARCH 11, 1993  
 DAWN W. JACOBS / ENGINEER



NORTH ANNA UNIT 2  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
SUPPORTING SYSTEMS  
(Sorted by Line Number)

Data Base File Name/Date/Time: MA2\_SSEL.DBF / 03/11/93 / 09:30:38  
Sort Criteria: Line Number  
Filter Criteria: (Line Number >= '5000') AND (Line Number <= '6000')  
Program File Name & Version: SSEL V0.0

LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT LOCATION	OP. ST. Normal	Desired	POWER SUPPORTING SYS. REQ'D INTERCONNECTIONS						
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
5265	3	18	1-WV-TT-155	HW/CONTROL ROOM TEMP. TRANS.	11715-FB-04AC3/07/FEB SB	277'	10/0	ON	ON	YES	N/A	N/A			
5266	3	18	2-WV-TT-255	HW/CONTROL ROOM TEMP. TRANS.	11715-FB-04AC3/07/FEB SB	277'	10/0	ON	ON	YES	N/A	N/A			
5269	2	10	2-WV-AC-9	HW/CONTROL ROOM AIR CONDITIONER	11715-FB-04AC3/07/FEB SB	277'	10/0	ON	ON	YES	11715-FB-40A2/13	N/A			
5270	2	10	1-WV-AC-2	HW/CONTROL ROOM AIR CONDITIONER	11715-FB-04AC3/07/FEB SB	277'	10/0	ON	ON	YES	N/A	N/A			
5271	2	0	1-WV-ACB-136	HW/AIR COND. FAN DISCH. DAMPER	11715-FB-04AC3/07/FEB SB	277'	10/0	ON	ON	YES	N/A	1-WV-AC-2			
5272	2	0	2-WV-ACB-236	HW/AIR COND. FAN DISCH. DAMPER	11715-FB-04AC3/07/FEB SB	277'	10/0	ON	ON	YES	N/A	2-WV-AC-9			
5273	2	07	1-WV-TCV-164	HW/CHILLED WATER CONTROL VALVE	11715-FB-04AC3/07/FEB SB	277'	10/0	OPEN	OPEN	NO	N/A	N/A			
5274	2	07	2-WV-TCV-264	HW/CHILLED WATER CONTROL VALVE	11715-FB-04AC3/07/FEB SB	277'	10/0	OPEN	OPEN	NO	N/A	N/A			
5275	2	18	1-WV-TT-164	HW/CONTROL ROOM TEMP. TRANS.	11715-FB-04AC3/07/FEB SB	277'	10/0	ON	ON	YES	N/A	N/A			
5276	2	18	2-WV-TT-264	HW/CONTROL ROOM TEMP. TRANS.	11715-FB-04AC3/07/FEB SB	277'	10/0	ON	ON	YES	N/A	2-WV-AC-8			
5561*	1	04	TRANS-42N	/HEAT TRACE TRANSFORMER	11715-FE-001M/16	AFPH	--	ON	ON	YES	N/A	N/A			
5562*	2	04	TRANS-42R	/HEAT TRACE TRANSFORMER	11715-FE-001B/16	AFPH	--	ON	ON	YES	N/A	N/A			
5565*	1	20	1-EP-CB-12AN	EP/HEAT TRACE DISTRIBUTION CABINET	12050-FE-063 SERIES AUX	262'	--	ON	ON	YES	N/A	N/A			
5566*	1	20	1-EP-CB-12BN	EP/HEAT TRACE DISTRIBUTION CABINET	12050-FE-063 SERIES AUX	262'	--	ON	ON	YES	N/A	N/A			
5573*	1	20	1-EP-CB-42AN	EP/HEAT TRACE DISTRIBUTION CABINET	12050-FE-063 SERIES AFPH	274'	--	ON	ON	YES	N/A	N/A			
5574*	1	20	1-EP-CB-42BN	EP/HEAT TRACE DISTRIBUTION CABINET	12050-FE-063 SERIES AFPH	274'	--	ON	ON	YES	N/A	N/A			
5585*	2	20	1-EP-CB-42AR	EP/HEAT TRACE DISTRIBUTION CABINET	12050-FE-063 SERIES AFPH	275'	--	ON	ON	YES	N/A	N/A			
5586*	2	20	1-EP-CB-42BR	EP/HEAT TRACE DISTRIBUTION CABINET	12050-FE-063 SERIES AFPH	275'	--	ON	ON	YES	N/A	N/A			
5597*	1	20	1-EP-CB-42N1	EP/HEAT TRACE CONTROL CABINET	12050-FE-063 SERIES AFPH	271'	--	ON	ON	YES	N/A	N/A			
5598*	2	20	1-EP-CB-42R1	EP/HEAT TRACE CONTROL CABINET	12050-FE-063 SERIES AFPH	271'	--	ON	ON	YES	N/A	N/A			
5603*	1, 2	20	AMBAB46*	/AMBIATOR CABINET - 46	DWG NOT AVAILABLE	AFPH	--	ON	ON	YES	N/A	N/A			
5604	1	21	2-RS-E-1A	RS/RSIDE RECIRC SPRAY COOLER A	12050-FM-091A3/20/CT CONTR	216'	--	N/A	N/A	NO	11715-FM-078B3	SERVICE WATER			

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (Dwg or more signatures of Systems or Operations Engineers)

DAWN M. JACOBS / ENGINEER

*Dawn Jacobs*  
Signature

MARCH 11, 1993

DAVID J. WEBER / ENGINEER

*David J. Weber*  
Signature

MARCH 11, 1993

NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 SUPPORTING SYSTEMS  
 (Sorted by Line Number)

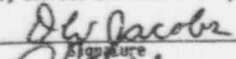
Data Base File Name/Date/Time: NA2\_SSEL.DBF / 03/11/93 / 09:30:38  
 Sort Criteria: Line Number  
 Filter Criteria: (Line Number >= '5000') AND (Line Number < '6000')  
 Program File Name & Version: SSEH v0.0

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	EQUIPMENT LOCATION		SORT	NOTES	OP. ST.		POWER REQ'D	SUPPORTING SYS. Dwg. No./Rev.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	
					Building	Fir. Ely.			Ro. or Row/Col.	Normal				Desired
(1)	(2)	(3)	(4)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
5605	1	21	2-RS-E-1B	RS/INSIDE RECIRC SPRAY COOLER B	12050-FM-091A3/20/C5	CONTMT	216'	S	26	N/A	N/A	NO	11715-FM-07883	SERVICE WATER
5606	2	21	2-RS-E-1C	RS/INSIDE RECIRC SPRAY COOLER C	12050-FM-091AA/21/DB	CONTMT	216'	S	26	N/A	N/A	NO	11715-FM-07883	SERVICE WATER
5607	2	21	2-RS-E-1D	RS/INSIDE RECIRC SPRAY COOLER D	12050-FM-091AA/21/D7	CONTMT	216'	S	26	N/A	N/A	NO	11715-FM-07883	SERVICE WATER

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DANN W. JACOBS / ENGINEER

  
 Signature

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

  
 Signature

MARCH 11, 1993

## Appendix G

**ELECTRICAL SYSTEMS**

This appendix describes the emergency electrical power supplies used to support more than one of the four safe shutdown functions addressed in Appendices B through E. The electrical systems were listed separate from the supporting systems of Appendix F to facilitate database manipulation. The electrical drawings used to develop the SSEL are included in Appendix N.

Each unit's AC Power Distribution System consists of three normal 4kV buses (A, B and C), a single 4kV bus (G) in the intake structure, and two emergency 4kV buses (H and J). The equipment which has been selected for safe shutdown is directly or indirectly powered from the emergency buses. The 4kV emergency buses can be supplied from the diesel generators or off-site power. This ensures a reliable supply of electric power to the safe shutdown equipment. The electrical distribution system required for safe shutdown is shown on the electrical one-line diagrams. The electrical distribution components required to function are listed in the SSEL.

The emergency diesel generators (EDGs) are an on-site power source which can supply power to the essential safe shutdown equipment if the normal off-site power sources are unavailable. There are two 100% capacity diesel generators for each unit. Each diesel generator has a continuous 2000-hour rating of 3000 KW and a half-hour rating of 3300 KW. The capability exists to provide power to all the safe shutdown equipment required to shut down both units.

The diesel generators are located in individual rooms and are supported by completely separate auxiliary systems. Each diesel can be started by either of two redundant compressed air starting systems.

The diesel engines are each fueled from day tanks located within the EDG Rooms. The day tanks are replenished via underground fuel lines from two 50,000 gallon storage tanks.

There are two redundant pumps for each diesel generator to transfer fuel oil from the storage tank to the diesel generator day tank. Each set of pumps is powered from the emergency bus associated with the diesel to which the pumps supply oil to ensure a continuous supply of fuel. In addition, a 210,000 gallon above-ground fuel oil storage tank is used for transferring fuel to the buried tanks.

Diesel engine lubrication is provided by engine-driven and motor-driven lube oil pumps. The engine-driven pump has sufficient capacity to provide the required lubrication.

During EDG operation, ventilation is provided by the main diesel cooling fan. The main diesel cooling fan is located on the engine skid and is powered by a mechanical power takeoff on the diesel engine.

Diesel engine cooling is provided to dissipate the heat produced by the engine and the lube oil coolers. An engine-driven pump circulates coolant through the engine to a radiator to maintain the required temperature. The diesel generator radiator cooling system is completely self-contained within the Emergency Diesel Generator Room.

The electrical distribution system used for safe shutdown is highlighted on electrical diagrams in Appendix N and safe shutdown equipment is listed in this Appendix. Electrical distribution system SSEL items have line numbers from 6001 to 6999.

NORTH ANNA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
ELECTRICAL SYSTEMS  
(Sorted by Line Number)

Data Base File Name/Date/Time: NA1\_SSEL.DBF / 03/11/93 / 09:33:18  
Sort Criteria: Line Number  
Filter Criteria: (Line Number > '6000') AND (Line Number < '7000')  
Program File Name & Version: SSEL v0.9

LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	LOCATION Rm. or Row/Col.	Sort Notes	Normal	Desired	REQ'D	INTERCONNECTIONS				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
6001	1	17	EDG-3H*	AP/EMERGENCY DIESEL GENERATOR 1H	11715-FE-001A1/21/03 SB	272'	14/D	S R --	OFF	ON	YES	N/A	1-8Y-8-01,-02		
6002	2	17	EDG-1J*	AP/EMERGENCY DIESEL GENERATOR 1J	11715-FE-001A1/21/03 SB	272'	16/D	S R --	OFF	ON	YES	N/A	1-8Y-8-03,-04		
6003	1	20	EDGCC-1J*	AP/EDG 1H CONTROL CABINET	11715-FN-005A/15 SB	272'	14/D	S R 41	N/A	N/A	YES	N/A	N/A		
6004	2	20	EDGCC-3H*	AP/EDG 1J CONTROL CABINET	11715-FN-005A/15 SB	272'	16/D	S R 41	N/A	N/A	YES	N/A	N/A		
6005	1	20	1-EE-SW-01	EE/4KV EMERGENCY BUS 1H (ORANGE)	11715-FE-008B/13 SB	252'	9/C	S R 41	N/A	N/A	YES	11715-FE-01D/18 EDG 1H; 1-8Y-8-01,-02			
6006	2	20	1-EE-SW-02	EE/4KV EMERGENCY BUS 1J (PURPLE)	11715-FE-008B/12 SB	252'	8/C	S R 41	N/A	N/A	YES	11715-FE-01D/18 EDG 1J; 1-8Y-8-01,-02			
6007	1	04	1-EE-ST-1H	EE/4160/400 SERVICE TRANSFORMER 1H	11715-FE-001A1/21/02 SB	252'	9/D	S R --	N/A	N/A	YES	N/A	1-EE-SW-01; EDG 1H		
6008	1	04	1-EE-ST-1H1	EE/4160/400 SERVICE TRANSFORMER 1H1	11715-FE-001A1/21/02 AUX	274'	12/H	S R --	N/A	N/A	YES	N/A	1-EE-SW-01; EDG 1H		
6009	2	04	1-EE-ST-1J	EE/4160/400 SERVICE TRANSFORMER 1J	11715-FE-001A1/21/02 SB	252'	8/D	S R --	N/A	N/A	YES	N/A	1-EE-SW-02; EDG 1J		
6010	2	04	1-EE-ST-1J1	EE/4160/400 SERVICE TRANSFORMER 1J1	11715-FE-001A1/21/02 AUX	274'	11/D	S R --	N/A	N/A	YES	N/A	1-EE-SW-02; EDG 1J		
6011	1	02	1-EE-SS-01	EE/480V EMERGENCY BUS 1H	11715-FE-001A1/21/02 SB	252'	9/C	S R 41	N/A	N/A	YES	N/A	1-8Y-8-01,-02; 1-EE-ST-1		
6012	1	02	1-EE-SS-03	EE/480V EMERGENCY BUS 1H1	11715-FE-001A1/21/02 AUX	274'	12/H	S R --	N/A	N/A	YES	N/A	1-8Y-8-01,-02; 1-EE-ST-0		
6013	2	02	1-EE-SS-02	EE/480V EMERGENCY BUS 1J	11715-FE-001A1/21/02 SB	252'	8/C	S R 41	N/A	N/A	YES	N/A	1-8Y-8-03,-04; 1-EE-ST-1		
6014	2	02	1-EE-SS-04	EE/480V EMERGENCY BUS 1J1	11715-FE-001A1/21/02 AUX	274'	11/H	S R --	N/A	N/A	YES	N/A	1-8Y-8-03,-04; 1-EE-ST-0		
6015	1	01	1-EP-MC-10	EP/EMERGENCY MCC 1H1-1	11715-FE-001Z1/14/08 SB	254'	9/C	S R 41	N/A	N/A	YES	N/A	1-EE-SS-01		
6016	1	01	1-EP-MC-41	EP/EMERGENCY MCC 1H1-4	11715-FE-001Z1/14/08 SB	254'	9/C	S R 41	N/A	N/A	YES	11715-FE-009EJ/ 1-EE-SS-01			
6017	1	01	1-EP-MC-20	EP/EMERGENCY MCC 1H1-2S	11715-FE-001Q1/21/07 AUX	260'	11/J	S R 41	N/A	N/A	YES	N/A	1-EE-SS-01		
6018	1	01	1-EP-MC-32	EP/EMERGENCY MCC 1H1-3	11715-FE-001T1/15/08 SBPH	--	--	S R --	N/A	N/A	YES	N/A	1-EE-SS-01		
6019	1	01	1-EP-MC-50	EP/EMERGENCY MCC 1H1-3A	11715-FE-001T1/15/08 SBPH	--	--	S R 41	N/A	N/A	YES	N/A	1-EP-MC-32		

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAWN W. JACOBS / ENGINEER

*Dawn W. Jacobs*  
Signature

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

*David J. Werder*  
Signature

MARCH 11, 1993

NORTH AREA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
ELECTRICAL SYSTEMS  
(Sorted by Line Number)

Data Base File Name/Date/Time: NA1\_SSEL.DBF / 03/11/93 / 09:33:18  
Sort Criteria: Line Number  
Filter Criteria: (Line Number >= '6000') AND (Line Number < '7000')  
Program File Name & Version: SSEL v0.0

LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Des. No./Rev./Zone	Building	EQUIPMENT LOCATION	OP. ST.	POWER SUPPORTING SYS.	REQ'D INTERCONNECTIONS						
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
6020	1	01	1-EP-MC-19	EP/EMERGENCY MCC 3H1-2W	11715-FE-00101/21/77	AUX	260'	11/J	S R 41	N/A	N/A	YES	N/A	1-EE-SS-03	
6021	1	01	1-EP-MC-12	EP/EMERGENCY MCC 3H1-1A	11715-FE-00111/15/74	SUPH	--	--	S R --	N/A	N/A	YES	N/A	1-EP-MC-1E	
6022	2	01	1-EP-MC-11	EP/EMERGENCY MCC 1J1-1	11715-FE-00191/25/78	SB	254'	9/C	S R 41	N/A	N/A	YES	N/A	1-EE-SS-02	
6023	2	01	1-EP-MC-22	EP/EMERGENCY MCC 1J1-2S	11715-FE-00181/21/77	AUX	260'	CABLE TUNNEL	S R 41	N/A	N/A	YES	N/A	1-EE-SS-02	
6024	2	01	1-EP-MC-21	EP/EMERGENCY MCC 1J1-2W	11715-FE-00151/21/77	AUX	260'	CABLE TUNNEL	S R 41	N/A	N/A	YES	N/A	1-EP-MC-22	
6025	2	01	1-EP-MC-33	EP/EMERGENCY MCC 1J1-3	11715-FE-00111/15/78	SUPH	--	--	S R --	N/A	N/A	YES	N/A	1-EE-SS-02	
6026	2	01	1-EP-MC-51	EP/EMERGENCY MCC 1J1-3A	11715-FE-00111/15/73	SUPH	--	--	S R 41	N/A	N/A	YES	N/A	1-EP-MC-31	
6027	2	01	1-EP-MC-13	EP/EMERGENCY MCC 1J1-1A	11715-FE-00111/15/78	SUPH	--	--	S R --	N/A	N/A	YES	N/A	1-EP-MC-11	
6028	1	04	1-AMS-79A*	EP/480/120 VOLT. REG. TRANSFORMER	11715-FE-001AE1/13	SB	252'	9/D	S R --	N/A	N/A	YES	N/A	1-EP-MC-10	
6029	1	04	TRANS-79B*	EP/480/120 VOLT. REG. TRANSFORMER	11715-FE-001AE1/13	SB	252'	9/D	S R --	N/A	N/A	YES	N/A	1-EP-MC-10	
6030	2	04	TRANS-80*	EP/480/120 VOLT. REG. TRANSFORMER	11715-FE-001AE1/13	SB	252'	9/D	S R --	N/A	N/A	YES	11715-FE-0096S/17	1-EP-MC-11	
6031	1	04	TRANS-118*	EP/480/120 SEMI-VITAL TRANSFORMER	11715-FE-001AE1/13	SB	254'	EMER SWGR	S R --	N/A	N/A	YES	N/A	1-EP-MC-41	
6032	1	04	TRANS-70*	EP/480/120 SEMI-VITAL TRANSFORMER	11715-FE-001AE1/13	SB	277'	8/D	S R --	N/A	N/A	YES	N/A	1-EP-MC-10	
6033	2	04	TRANS-119*	EP/480/120 SEMI-VITAL TRANSFORMER	11715-FE-001AE1/13	SB	254'	EMER SWGR	S R --	N/A	N/A	YES	N/A	1-EP-MC-22	
6034	2	04	TRANS-71*	EP/480/120 SEMI-VITAL TRANSFORMER	11715-FE-001AE1/13	SB	277'	8/D	S R --	N/A	N/A	YES	11715-FE-0096S/17	1-EP-MC-11	
6035	1	02	1-EP-CB-16A	EP/120V SEMI-VITAL AC 1A BUS	11715-FE-001W1/16/E1	SB	277'	8/D	S R --	N/A	N/A	YES	N/A	TRANS-70	
6036	1	02	1-EP-CB-16A	EP/120V SEMI-VITAL AC BUS DISTRIBUTION PANEL	11715-FE-001JA/00/75	SB	252'	EMER SWGR 5/D	S R --	N/A	N/A	YES	N/A	TRANS-118	
6037	2	02	1-EP-CB-16B	EP/120V SEMI-VITAL AC 1B BUS	11715-FE-001W1/16/E3	SB	277'	8/D	S R --	N/A	N/A	YES	N/A	TRANS-71	

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAWN W. JACOBS / ENGINEER

*Dawn W. Jacobs*  
Signature

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

*David J. Werder*  
Signature

MARCH 11, 1993

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 ELECTRICAL SYSTEMS  
 (Sorted by Line Number)

LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Day. No./Rev./Zone	Building	EQUIPMENT LOCATION Flr./Elev.	OP. ST.	Normal	Desired	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS						
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	
6038	2	20	1-EP-DB-168	EP/120V SCHEM-VITAL AC BUS DISTRIBUTION PANEL	11715-FE-001A/00/05 SB	252'	EMER	SMGR	S/D	S	R	N/A	N/A	YES	N/A	TRANS-119
6039	1	16	1-BY-C-03	BY/BATTERY CHARGER 1C-1	11715-FE-001E1/18/08 SB	254'	EMER	SMGR		S	R	N/A	N/A	YES	N/A	1-EP-AC-10
6040	1	16	1-BY-C-02	BY/BATTERY CHARGER 1-I	11715-FE-001E1/18/07 SB	254'	EMER	SMGR		S	R	N/A	N/A	YES	N/A	1-EP-AC-10
6041	1	16	1-BY-C-04	BY/BATTERY CHARGER 1-II	11715-FE-001E1/18/07 SB	254'	EMER	SMGR		S	R	N/A	N/A	YES	N/A	1-EP-AC-10
6042	2	16	1-BY-C-06	BY/BATTERY CHARGER 1E-11	11715-FE-010B1/19/09 SB	254'	EMER	SMGR		S	R	N/A	N/A	YES	N/A	1-EP-AC-11
6043	2	16	1-BY-C-05	BY/BATTERY CHARGER 1-E11	11715-FE-010B1/19/09 SB	254'	EMER	SMGR		S	R	N/A	N/A	YES	N/A	1-EP-AC-11
6044	2	16	1-BY-C-07	BY/BATTERY CHARGER 1-IV	11715-FE-010B1/19/06 SB	254'	EMER	SMGR		S	R	N/A	N/A	YES	N/A	1-EP-AC-11
6045	1	02	1-EP-CB-12A	EP/125V VITAL DC BUS (1-1)	11715-FE-001E1/18/07 SB	252'	9/C			S	R	N/A	N/A	YES	N/A	1-BY-C-02, -03, -04; 1-BY-8-01
6046	1	02	1-EP-CB-12B	EP/125V VITAL DC BUS (1-11)	11715-FE-001E1/18/07 SB	252'	9/C			S	R	N/A	N/A	YES	N/A	1-BY-C-02, -03, -04; 1-BY-8-02
6047	2	02	1-EP-CB-12C	EP/125V VITAL DC BUS (1-111)	11715-FE-001E2/17/07 SB	252'	9/C			S	R	N/A	N/A	YES	N/A	1-BY-C-05, -06, -07; 1-BY-8-03
6048	2	02	1-EP-CB-12D	EP/125V VITAL DC BUS (1-1V)	11715-FE-001E2/17/07 SB	252'	8/C			S	R	N/A	N/A	YES	N/A	1-BY-C-05, -06, -07; 1-BY-8-04
6049	1	15	1-BY-8-01	BY/125V BATTERY 1-1	11715-FE-001E1/18/07 SB	294'	9/C			S	--	N/A	N/A	YES	N/A	N/A
6050	1	15	1-BY-8-02	BY/125V BATTERY 1-11	11715-FE-001E1/18/07 SB	252'	9/C			S	--	N/A	N/A	YES	N/A	N/A
6051	2	15	1-BY-8-03	BY/125V BATTERY 1-111	11715-FE-001E2/17/07 SB	294'	8/DB			S	--	N/A	N/A	YES	N/A	N/A
6052	2	15	1-BY-8-04	BY/125V BATTERY 1-1V	11715-FE-001E2/17/07 SB	252'	8/DB			S	--	N/A	N/A	YES	N/A	N/A
6053	1	16	1-VB-1-01	VB/INVERTER TO VITAL 1-1 BUS	11715-FE-011E/05/08 SB	252'	9/C			S	R	N/A	N/A	YES	N/A	1-EP-CB-12A
6054	1	16	1-VB-1-02	VB/INVERTER TO VITAL 1-11 BUS	11715-FE-011E/05/08 SB	252'	9/C			S	R	N/A	N/A	YES	N/A	1-EP-CB-12B
6055	2	16	1-VB-1-03	VB/INVERTER TO VITAL 1-111 BUS	11715-FE-011E/05/08 SB	252'	8/C			S	R	N/A	N/A	YES	N/A	1-EP-CB-12C
6056	2	16	1-VB-1-04	VB/INVERTER TO VITAL 1-1V BUS	11715-FE-011E/05/08 SB	252'	8/C			S	R	N/A	N/A	YES	N/A	1-EP-CB-12D
6057	1	02	1-EP-SW-1	BP/BY-PASS SWITCH 1 (MANUAL)	11715-FE-001V1/02/02 SB	277'	9/C			S	36	INVERT	INVERT	YES	YES	11715-FE-11E/05 1-VB-1-01

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAWN W. JACOBS / ENGINEER  
 Signature: *Dawn W. Jacobs*  
 MARCH 11, 1993

DAVID J. WERDER / ENGINEER  
 Signature: *David J. Werder*  
 MARCH 11, 1993

NORTH AREA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
ELECTRICAL SYSTEMS  
(Sorted by Line Number)

Data Base File Name/Date/Time: NA1\_SSEL.DBF / 03/11/93 / 09:23:18  
Sort Criteria: Line Number  
Filter Criteria: (Line Number >= '6000') AND (Line Number < '7000')  
Program File Name & Version: SSEL v0.0

LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Des. No./Rev./Zone	Building	EQUIPMENT LOCATION	Sort Notes	Normal	OP. ST.	POWER SUPPORTING SYS. REQ'D INTERCONNECTIONS			
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
6058	02	1-EP-SW-2	RP/RV-PASS SWITCH 2 (MANUAL)	11715-FE-001V1/02/J4 SB	277'	9/C	S	36	INVERT	INVERT	YES	11715-FE-11E/05	1-WB-I-02
6059	02	1-EP-SW-3	RP/RV-PASS SWITCH 3 (MANUAL)	11715-FE-001V1/02/J5 SB	277'	8/C	S	36	INVERT	INVERT	YES	11715-FE-11E/05	1-WB-I-03
6060	02	1-EP-SW-4	RP/RV-PASS SWITCH 4 (MANUAL)	11715-FE-001V1/02/J7 SB	277'	8/D	S	36	INVERT	INVERT	YES	11715-FE-11E/05	1-WB-I-04
6061	02	1-EP-CB-04A	EP/120V VITAL AC 1-I BUS (RED & ORANGE)	11715-FE-001V1/02/01 SB	277'	9/C	S R --	--	N/A	N/A	YES	N/A	1-BP-SW-01
6062	02	1-EP-CB-04B	EP/120V VITAL AC 1-II BUS (WHITE)	11715-FE-001V1/02/02 SB	277'	9/C	S R --	--	N/A	N/A	YES	N/A	1-BP-SW-02
6063	02	1-EP-CB-04C	EP/120V VITAL AC 1-III BUS (BLUE & PURPLE)	11715-FE-001V1/02/04 SB	277'	9/C	S R --	--	N/A	N/A	YES	N/A	1-BP-SW-03
6064	02	1-EP-CB-04D	EP/120V VITAL AC 1-IV BUS (YELLOW)	11715-FE-001V1/02/05 SB	277'	9/C	S R --	--	N/A	N/A	YES	N/A	1-BP-SW-04
6065	14	1-EP-CB-002	EP/120 AC UNIT 1 APP-R DIST. PNL (RED)	11715-FE-001AEL/13/A SB	254'	10/C	S R --	--	N/A	N/A	YES	N/A	1-WB-1-01
6066	15	1-EG-1H	AP/EDG BATTERIES AND RACKS	11715-1-30-212C SB	272'	EDG	S --	--	N/A	N/A	NO	N/A	N/A
6067	15	1-EG-1J	AP/EDG BATTERIES AND RACKS	11715-1-30-212C SB	272'	EDG	S --	--	N/A	N/A	NO	N/A	N/A
6068	14	1-EP-CB-808	EP/120 VAC INSTRUM DIST PANEL 1-11	11715-FE-018S/19/J4 SB	277'	6/C	S R I	N/A	N/A	N/A	YES	11715-FE-1A8/12	1-EP-CB-04B
6069	14	1-EP-CB-800	EP/120 VAC INSTRUM DIST PANEL 1-1V	11715-FE-018T/21/J5 SB	277'	7/E	S R I	N/A	N/A	N/A	YES	11715-FE-1A0/10	1-EP-CB-049
6070	14	1-EP-CB-80E	EP/120 VAC INSTRUM DIST PANEL 1-V	13075-FE-018Y/8 SB	277'	7/D	S R I	N/A	N/A	N/A	YES	11715-FE-1AA/13	1-EP-CB-04A
6071	14	1-EP-CB-80G	EP/120 VAC INSTRUM DIST PANEL 1-VII	13075-FE-018Y/8 SB	277'	7/D	S R I	N/A	N/A	N/A	YES	11715-FE-1AC/12	1-EP-CB-04C

CERTIFICATION:

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DAWN W. JACOBS / ENGINEER

*Dawn W. Jacobs*  
Signature

MARCH 11, 1993

DAVID J. WEDDER / ENGINEER

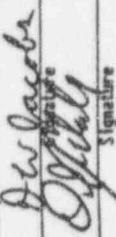
*David J. Wedder*  
Signature

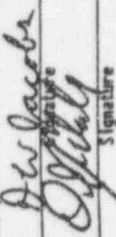
MARCH 11, 1993



LINE NO.	TRAIN CLASS	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flt.-Elev.	LOCATION Rm. or Row/Col.	SOBT NOTES	OP. ST. (Normal)	Desired	POWER SUPPORTING SYS. REQ'D	INTERCONNECTIONS & SUPPORTING COMPONENTS		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
6001	1	17	EDG-2H*	AP/EMERGENCY DIESEL GENERATOR 2H	12050-FE-001A1/10/E6 SB		271' 6"	15/D	S R --	OFF	ON	YES	N/A	2-BY-B-01,-02	
6002	2	17	EDG-2J*	AP/EMERGENCY DIESEL GENERATOR 2J	12050-FE-001A1/10/A6 SB		271' 6"	17/D	S R --	OFF	ON	YES	N/A	2-BY-B-03,-04	
6003	1	20	EDGCC-2J*	AP/EDG 2H CONTROL CABINET	11715-FN-005A/15 SB		271' 6"	15/D	S R 41	N/A	N/A	YES	N/A	N/A	
6004	2	20	EDGCC-2H*	AP/EDG 2J CONTROL CABINET	11715-FN-005A/15 SB		271' 6"	17/D	S R 41	N/A	N/A	YES	N/A	N/A	
6005	1	20	2-EE-SW-01	EE/REV EMERGENCY BUS 2H (ORANGE)	12050-FE-001A1/10/D5 SB		252'	9/C	S R 41	N/A	N/A	YES	N/A	EDG 2H; 2-BY-B-01,-02	
6006	2	20	2-EE-SW-02	EE/REV EMERGENCY BUS 2J (PURPLE)	12050-FE-001A1/10/A5 SB		252'	8/C	S R 41	N/A	N/A	YES	N/A	EDG 2J; 2-BY-B-01,-02	
6007	1	04	2-EE-ST-2H	EE/4160/480 TRANSFORMER 2H	12050-FE-001A1/10/D7 SB		252'	9/D	S R --	N/A	N/A	YES	N/A	2-EE-SW-01; EDG 2H	
6008	1	04	2-EE-ST-2H103	EE/4160/480 TRANSFORMER 2H1	12050-FE-001A1/10/C7 AUX		274'	12/N	S R --	N/A	N/A	YES	N/A	2-EE-SW-01; EDG 2H	
6009	2	04	2-EE-ST-2J	EE/4160/480 TRANSFORMER 2J	12050-FE-001A1/10/A7 SB		252'	8/D	S R --	N/A	N/A	YES	N/A	2-EE-SW-02; EDG 2J	
6010	2	04	2-EE-ST-2J102	EE/4160/480 TRANSFORMER 2J1	12050-FE-001A1/10/B7 AUX		274'	11/D	S R --	N/A	N/A	YES	N/A	2-EE-SW-02; EDG 2J	
6011	1	02	2-EE-SS-01	EE/480V EMERGENCY BUS 2H	12050-FE-001A1/10/D7 SB		252'	9/C	S R 41	N/A	N/A	YES	N/A	2-BY-B-01,02; 2-EE-ST-2H	
6012	1	02	2-EE-SS-03	EE/480V EMERGENCY BUS 2H1	12050-FE-001A1/10/C7 AUX		274'	12/N	S R --	N/A	N/A	YES	N/A	2-BY-B-01,02; 2-EE-ST-03	
6013	2	02	2-EE-SS-02	EE/480V EMERGENCY BUS 2J	12050-FE-001A1/10/A7 SB		252'	8/C	S R 41	N/A	N/A	YES	N/A	2-BY-B-03,04; 2-EE-ST-2J	
6014	2	02	2-EE-SS-04	EE/480V EMERGENCY BUS 2J1	12050-FE-001A1/10/B7 AUX		274'	11/K	S R --	N/A	N/A	YES	N/A	2-BY-B-03,04; 2-EE-ST-02	
6015	1	01	2-EP-MC-10	EP/EMERGENCY MCC 2H1-1	12050-FE-001Q1/12/A, SB L-1,3		254'	9/C	S R 41	N/A	N/A	YES	N/A	2-EE-SS-01	
6016	1	01	2-EP-MC-41	EP/EMERGENCY MCC 2H1-4	12050-FE-001Q1/12/A, SB H-3		254'	9/C	S R 41	N/A	N/A	YES	N/A	2-EE-SS-01	
6017	1	01	2-EP-MC-20	EP/EMERGENCY MCC 2H1-25	12050-FE-001M1/16/B, AUX D-1,8		259' 6"	11/J	S R 41	N/A	N/A	YES	N/A	2-EE-SS-01	
6018	1	01	2-EP-MC-32	EP/EMERGENCY MCC 2H1-3	12050-FE-001R1/11/A, SRPH E-1		--	--	S R --	N/A	N/A	YES	N/A	2-EE-SS-01	
6019	1	01	2-EP-MC-50	EP/EMERGENCY MCC 2H1-3A	12050-FE-001R1/11/A, SRPH D-7		--	--	S R 41	N/A	N/A	YES	N/A	2-EP-MC-32	
6020	1	01	2-EP-MC-19	EP/EMERGENCY MCC 2H1-2H	12050-FE-001M1/16/E, AUX F-1,8		259' 6"	11/J	S R 41	N/A	N/A	YES	N/A	2-EE-SS-03	

CERTIFICATION:  
 The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAWN V. JACOBS / ENGINEER  
  
 MARCH 11, 1993

DAVID J. WERDER / ENGINEER  
  
 MARCH 11, 1993

NORTH ANNA UNIT 2  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
ELECTRICAL SYSTEMS  
(Sorted by Line Number)

Data Base File Name/Date/Time: NA2\_SSEL.DBF / 03/11/93 / 09:30:38  
Sort Criteria: Line Number  
Filter Criteria: (Line Number >= '6000') AND (Line Number < '7000')

LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Div. No./Rev./Zone	Building	Equipment F.R./E.V.	LOCATION	Normal	Desired	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
6021	01	2-EP-AC-12	EP/EMERGENCY MCC 2H1-1A	12050-FE-001R1/11/A, SMPH F-3	--	--	--	S R --	N/A	N/A	YES	N/A	YES	N/A	2-EP-AC-10
6022	01	2-EP-AC-11	EP/EMERGENCY MCC 2J1-1	12050-FE-001Q1/12/A, SB L-5	254'	9/C	9/C	S R 41	N/A	N/A	YES	N/A	YES	N/A	2-EE-SS-02
6023	01	2-EP-AC-22	EP/EMERGENCY MCC 2J1-25	12050-FE-001P1/16/B, MID D-1,B	259' 6"	CABLE TUNNEL	CABLE TUNNEL	S R 41	N/A	N/A	YES	N/A	YES	N/A	2-EE-SS-02
6024	01	2-EP-AC-21	EP/EMERGENCY MCC 2J1-2N	12050-FE-001P1/16/E, MID F-1-B	259' 6"	CABLE TUNNEL	CABLE TUNNEL	S R 41	N/A	N/A	YES	N/A	YES	N/A	2-EP-AC-22
6025	01	2-EP-AC-33	EP/EMERGENCY MCC 2J1-3	12050-FE-001R1/11/G, SMPH I-1	--	--	--	S R --	N/A	N/A	YES	N/A	YES	N/A	2-EE-SS-02
6026	01	2-EP-AC-51	EP/EMERGENCY MCC 2J1-3A	12050-FE-001R1/11/E, SMPH I-7	--	--	--	S R 41	N/A	N/A	YES	N/A	YES	N/A	2-EP-AC-31
6027	01	2-EP-AC-13	EP/EMERGENCY MCC 2J1-1A	12050-FE-001R1/11/G, SMPH I-1	--	--	--	S R --	N/A	N/A	YES	N/A	YES	N/A	2-EP-AC-11
6028	04	TRANS-79A-2*	EP/480/120 VOLT. REG. TRANSFORMER (79-2)	12050-FE-001AE1/10/L SB 5	252'	9/D	9/D	S R --	N/A	N/A	YES	N/A	YES	N/A	2-EP-AC-10
6029	04	TRANS-79B-2*	EP/480/120 VOLT. REG. TRANSFORMER (79B-2)	12050-FE-001AE1/10/M SB 5	252'	9/D	9/D	S R --	N/A	N/A	YES	N/A	YES	N/A	2-EP-AC-10
6030	04	TRANS-80-2*	EP/480/120 VOLT. REG. TRANSFORMER (80-2)	12050-FE-001AE1/10/B SB 5	252'	9/D	9/D	S R --	N/A	N/A	YES	N/A	YES	N/A	2-EP-AC-11
6031	04	TRANS-118-2*	EP/480/120 SEMI-VITAL TRANSFORMER (118-2)	12050-FE-001AE1/10/I SB 3	254'	EMER SUGR	EMER SUGR	S R --	N/A	N/A	YES	N/A	YES	N/A	2-EP-AC-41
6032	04	TRANS-70-2*	EP/480/120 SEMI-VITAL TRANSFORMER (70-2)	12050-FE-001AE1/10/I SB 4	264'	CR	CR	S R --	N/A	N/A	YES	N/A	YES	N/A	2-EP-AC-10
6033	04	TRANS-119-2*	EP/480/120 SEMI-VITAL TRANSFORMER (119-2)	12050-FE-001AE1/10/E SB 3	254'	EMER SUGR	EMER SUGR	S R --	N/A	N/A	YES	N/A	YES	N/A	2-EP-AC-22
6034	04	TRANS-71-2*	EP/480/120 SEMI-VITAL TRANSFORMER (71-2)	12050-FE-001AE1/10/E SB 4	264'	CR	CR	S R --	N/A	N/A	YES	N/A	YES	N/A	2-EP-AC-11
6035	02	2-EP-CB-16A	EP/120V SEMI-VITAL AC 2A BUS	12050-FE-001R1/13/B2 SB	276' 9"	CR	CR	S R --	N/A	N/A	YES	N/A	YES	N/A	TRANS-70-2

CERTIFICATION:

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DAWN W. JACOBS / ENGINEER

*Dawn W. Jacobs*  
Signature

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

*David J. Werder*  
Signature

MARCH 11, 1993

NORTH AREA UNIT 2  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
ELECTRICAL SYSTEMS  
(Sorted by Line Number)

Data Base File Name/Date/Time: NA2\_SSEL.DBF / 03/11/93 / 09:30:38  
Sort Criteria: Line Number  
Filter Criteria: (Line Number >= '6000') AND (Line Number < '7000')  
Program File Name & Version: SSEL v0.0

LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	Equipment Location	Flt. E.V. No. or Rev./Co.	Sort Notes	Normal	Desired	DWG. NO./REV.	SUPPORTING COMPONENTS			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
6036	1	02	2-EP-08-16A	EP/120V SEMI-VITAL AC BUS DISTRIBUTION	12050-FE-001AJ1/00/F 5B-4,8	254'	11/70	S R --	N/A	N/A	YES	N/A	YES	N/A	TRANS-118-2
6037	2	02	2-EP-CB-16B	EP/120V SEMI-VITAL AC 2B BUS	12050-FE-001M1/13/0, 5B-4,8	276' 9"	CR	S R --	N/A	N/A	YES	N/A	YES	N/A	TRANS-71-2
6038	2	20	2-EP-08-16B	EP/120V SEMI-VITAL AC BUS DISTRIBUTION	12050-FE-001AJ1/00/0 5B-4,8	254'	11/70	S R --	N/A	N/A	YES	N/A	YES	N/A	TRANS-119-2
6039	1	16	2-BY-C-03	BY/BATTERY CHARGER 2C-1	12050-FE-001E1/15/A2 5B	254'	EMER SMGR	S R --	N/A	N/A	YES	N/A	YES	N/A	2-EP-MC-10
6040	1	16	2-BY-C-02	BY/BATTERY CHARGER 2-1	12050-FE-001E1/15/B2 5B	252'	9/C	S R --	N/A	N/A	YES	N/A	YES	N/A	2-EP-MC-10
6041	1	16	2-BY-C-04	BY/BATTERY CHARGER 2-11	12050-FE-001E1/15/B4 5B	254'	EMER SMGR	S R --	N/A	N/A	YES	N/A	YES	N/A	2-EP-MC-10
6042	2	16	2-BY-C-06	BY/BATTERY CHARGER 2C-11	12050-FE-001E1/15/A5 5B	254'	EMER SMGR	S R --	N/A	N/A	YES	N/A	YES	N/A	2-EP-MC-11
6043	2	16	2-BY-C-05	BY/BATTERY CHARGER 2-111	12050-FE-001E1/15/B5 5B	252'	9/C	S R --	N/A	N/A	YES	N/A	YES	N/A	2-EP-MC-11
6044	2	16	2-BY-C-07	BY/BATTERY CHARGER 2-1V	12050-FE-001E1/15/B7 5B	252'	8/C	S R --	N/A	N/A	YES	N/A	YES	N/A	2-EP-MC-11
6045	1	02	2-EP-CB-12A	EP/125V VITAL DC BUS (2-1)	12050-FE-001E1/15/B9 5B	252'	9/C	S R --	N/A	N/A	YES	N/A	YES	N/A	2-BY-C-02, -03, -04 2-BY-B-01
6046	1	02	2-EP-CB-12B	EP/125V VITAL DC BUS (2-11)	12050-FE-001E1/15/B9 5B	252'	9/C	S R --	N/A	N/A	YES	N/A	YES	N/A	2-BY-C-02, -03, -04 2-BY-B-02
6047	2	02	2-EP-CB-12C	EP/125V VITAL DC BUS (2-111)	12050-FE-001E1/15/B5 5B	252'	8/C	S R --	N/A	N/A	YES	N/A	YES	N/A	2-BY-C-05, -06, -07 2-BY-B-03
6048	2	02	2-EP-CB-12D	EP/125V VITAL DC BUS (2-1V)	12050-FE-001E1/15/B7 5B	252'	8/C	S R --	N/A	N/A	YES	N/A	YES	N/A	2-BY-C-05, -06, -07 2-BY-B-04
6049	1	15	2-BY-B-01	BY/125V BATTERY 2-1	12050-FE-001E1/15/B2 5B	294'	9/C	S --	N/A	N/A	YES	N/A	YES	N/A	N/A
6050	1	15	2-BY-B-02	BY/125V BATTERY 2-11	12050-FE-001E1/15/B4 5B	252'	9/C	S --	N/A	N/A	YES	N/A	YES	N/A	N/A
6051	2	15	2-BY-B-03	BY/125V BATTERY 2-111	12050-FE-001E1/15/B5 5B	294'	8/0b	S --	N/A	N/A	YES	N/A	YES	N/A	N/A
6052	2	15	2-BY-B-04	BY/125V BATTERY 2-1V	12050-FE-001E1/15/B7 5B	252'	8/0	S --	N/A	N/A	YES	N/A	YES	N/A	N/A
6053	1	16	2-VB-1-01	VB/INVERTOR TO VITAL 2-1 BUS	12050-FE-001E1/15/C2 5B	252'	9/C	S R --	N/A	N/A	YES	N/A	YES	N/A	2-EP-CB-12A
6054	1	16	2-VB-1-02	VB/INVERTOR TO VITAL 2-11 BUS	12050-FE-001E1/15/C3 5B	252'	9/C	S R --	N/A	N/A	YES	N/A	YES	N/A	2-EP-CB-12B

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAVID W. JACOBS / FWR/EEER

*David W. Jacobs*  
Signature

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

*David J. Werder*  
Signature

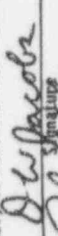
MARCH 11, 1993


NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 ELECTRICAL SYSTEMS  
 (Sorted by Line Number)

Data Base File Name/Date/Time: NA2\_SSEL.DBF / 03/11/93 / 09:30:38  
 Sort Criteria: Line Number  
 Filter Criteria: (Line Number >= 6000) AND (Line Number < 7000)  
 Program File Name & Version: SSEL V0.0

LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	Ftr. Elev.	ROOM	Row/Col.	Notes	Normal	Desired	REQD?	DWG. NO./REV.	SUPPORTING COMPONENTS
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
6055	2	16	2-VB-1-03	VB/INVERTOR TO VITAL 2-111 BUS	12050-FE-001E1/15/C5 SB	252'	8/C	S R	--	N/A	N/A	YES	N/A	2-EP-CB-12C
6056	2	16	2-VB-1-04	VB/INVERTOR TO VITAL 2-IV BUS	12050-FE-001E1/15/C7 SB	252'	8/C	S R	--	N/A	N/A	YES	N/A	2-EP-CB-12D
6057	1	02	2-BP-SW-1	BP/RY-PASS SWITCH 1 (MANUAL)	12050-FE-001V1/3/J2 SB	282'	CR	S	--	INVERT	INVERT	YES	N/A	2-VB-1-01
6058	1	02	2-BP-SW-2	BP/RY-PASS SWITCH 2 (MANUAL)	12050-FE-001V1/3/J4 SB	280'	CR	S	--	INVERT	INVERT	YES	N/A	2-VB-1-02
6059	2	02	2-BP-SW-3	BP/RY-PASS SWITCH 3 (MANUAL)	12050-FE-001V1/3/J6 SB	281'	CR	S	--	INVERT	INVERT	YES	N/A	2-VB-1-03
6060	2	02	2-BP-SW-4	BP/RY-PASS SWITCH 4 (MANUAL)	12050-FE-001V1/3/J8 SB	281'	CR	S	--	INVERT	INVERT	YES	N/A	2-VB-1-04
6061	1	02	2-EP-CB-04A	EP/120V VITAL AC 2-1 BUS (RED & ORANGE)	12050-FE-001T1/3/A1 SB	276' 9"	9/C	S R	I	N/A	N/A	YES	N/A	2-BP-SW-01
6062	1	02	2-EP-CB-04B	EP/120V VITAL AC 2-11 BUS (WHITE)	12050-FE-001V1/3/A3 SB	276' 9"	9/C	S R	I	N/A	N/A	YES	N/A	2-BP-SW-02
6063	2	02	2-EP-CB-04C	EP/120V VITAL AC 2-111 BUS (BLUE & PURPLE)	12050-FE-001V1/3/A5 SB	276' 9"	9/C	S R	I	N/A	N/A	YES	N/A	2-BP-SW-03
6064	2	02	2-EP-CB-04D	EP/120V VITAL AC 2-IV BUS (YELLOW)	12050-FE-001V1/3/A8 SB	276' 9"	CR	S R	I	N/A	N/A	YES	N/A	2-BP-SW-04
6065	1	15	2-EG-2R	AP/EDG BATTERIES AND RACKS	12050-1.30-212C SB	272'	EDG	S	--	N/A	N/A	NO	N/A	N/A
6066	2	15	2-EG-2J	AP/EDG BATTERIES AND RACKS	12050-1.30-212C SB	272'	EDG	S	--	N/A	N/A	NO	N/A	N/A

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 The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAWN V. JACOBS / ENGINEER  
  
 MARCH 11, 1993

DAVID J. WERDER / ENGINEER  
  
 MARCH 11, 1993

## Appendix H

## SMALL BREAK LOCA AND CONTAINMENT SYSTEMS

This appendix describes the equipment required to support the inventory control and decay heat removal functions to achieve safe shutdown with a seismic induced one-inch small break LOCA. EPRI NP-6041 postulates such an event in defining requirements for safe shutdown success path selection.

Reactor coolant makeup to replace coolant discharged to containment by the leak is initially provided by the high head safety injection pumps drawing from the refueling water storage tanks (RWST). If RWST reaches a low level, inventory control is continued by recirculating coolant from the containment sump using the low head safety injection pumps and the high head safety injection pumps in series.

Decay heat is transported from the RCS to containment by the leaking coolant. The containment recirculation spray system is used to transfer decay heat from containment to the service water system which is the ultimate heat sink.

This Appendix also describes equipment required to support the containment function. The containment function has been looked at independently of the Safe Shutdown functions to identify those systems necessary to avoid early containment failure. This is discussed further in section 3.4 of this report.

The flowpaths for small break LOCA and containment systems are highlighted on the flow diagrams in Appendix N and individual equipment items are listed in the SSEL provided in this Appendix. Small break LOCA and containment system SSEL items have line numbers from 7001 to 7999.

NORTH ANNA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
SMALL BREAK LOCA AND CONTAINMENT SYSTEMS  
(Sorted by Line Number)

Data Base File Name/Date/Time: NAL\_SSEL.DBF / 03/11/93 / 09:33:18  
Sort Criteria: Line Number  
Filter Criteria: (Line Numbers <= 7000)  
Program File Name & Version: SSEL v0.0

LINE NO.	EQUIP TRAHN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	D: No./Rev./Zone	Building	LOCATION	Eq. or Row/Col.	OP. ST.	Normal	Desired	RECD INTERCONNECTIONS					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	
7001	1	2	21	1-05-TK-2	05/REFUELLING WATER CHER AND TANK	11715-FM-091A1/20/06 YARD/TUML	272'	1.5/L	S	I	N/A	N/A	NO	N/A	N/A	
7002	1	08A	1-05-MOV-100A	05/05 PUMP INLET ISOL	11715-FM-091A2/23/03 QSPH	271'	--		S	R	I	CLOSED	OPEN	YES	11715-FE-1Q1/21 1-EP-MC-20	
7003	1	05	1-05-P-1A	05/05 PUMP A	11715-FM-091A2/23/05 QSPH	274'	4/N		S	R	I	OFF	ON	YES	N/A	1-EE-SS-03
7005	2	08A	1-05-MOV-100B	05/05 PUMP B INLET ISOL	11715-FM-091A2/23/03 QSPH	271'	--		R	I	O	VEN	OPEN	NO	N/A	1-EP-MC-21
7006	2	05	1-05-P-1B	05/05 PUMP B	11715-FM-091A2/23/04 QSPH	274'	4/N		S	R	I	OFF	ON	YES	N/A	1-EE-SS-04
7007	1	2	18	1-05-LT-101	05/CHEMICAL AND TANK LEVEL MONTR	11715-FM-091A1/20/05 YARD/TUML	200'	1.5/L	S	R	I	ON	ON	YES	11715-05-006/3 1-EI-CB-230	
7008	1	2	18	1-05-LT-101	05/CHEMICAL AND TANK LEVEL INDICATOR	11715-FM-091A1/20/06 SB	277'	CR	S	R	I	ON	ON	YES	11715-05-006/3 1-EI-CB-05	
7009	1	06	1-S1-P-1A	S1/LRST PUMP A	11715-FM-096A1/28/06 SFGD	255'	3.2/LM		S	R	I	OFF	ON	YES	N/A	1-EE-SM-01
7009A	1	08A	1-S1-MOV-1860A	S1/LRST PUMP A SUMP ISOL	11715-FM-096A1/28/07 QSPH	267'	3/K		S	R	I	CLOSED	OPEN	YES	N/A	1-EP-MC-19
7010	1	08A	1-CH-MOV-1270B	CH/LRST TO CHARGING PUMP SECTION	11715-FM-095B2/24/03 AUX	244'	8.6/J		R	I	O	VEN	OPEN	NO	N/A	N/A
7011	2	06	1-S1-P-1B	S1/LRST PUMP B	11715-FM-096A1/28/04 SFGD	255'	3.5/JK		S	R	I	OFF	ON	YES	N/A	1-EE-SM-02
7011A	2	08A	1-S1-MOV-1860B	S1/LRST PUMP B SUMP ISOL	11715-FM-096A1/28/05 QSPH	267'	3/K		S	R	I	CLOSED	OPEN	YES	N/A	N/A
7012	1	06	1-RS-P-1A	RS/INSIDE RECIRC SPRAY PUMP A	11715-FM-091A3/20/07 COMHT	217'	12		S	R	I	OFF	ON	YES	N/A	1-EE-SS-03
7014	1	08A	1-SM-MOV-104A	SM/RECIRC SPRAY COOLER A DISCH ISOL	11715-FM-078B1/20/04 QSPH	265'	NOTE 1U		S	R	I	CLOSED	OPEN	YES	N/A	1-EP-MC-19
7017	1	06	1-RS-P-1B	RS/INSIDE RECIRC SPRAY PUMP B	11715-FM-091A3/20/04 COMHT	217'	12		S	R	I	OFF	ON	YES	N/A	1-EE-SS-04
7019	1	08A	1-SM-MOV-104B	SM/RECIRC SPRAY COOLER B DISCH ISOL	11715-FM-078B1/20/05 QSPH	265'	NOTE 1V		S	R	I	CLOSED	OPEN	YES	N/A	1-EP-MC-21
7022	2	08A	1-RS-MOV-155A	RS/OUTSIDE RECIRC SPRAY PUMP A INLET ISOL	11715-FM-091A4/24/06 SFGD	267'	--		R	I	O	VEN	OPEN	NO	N/A	1-EP-MC-19
7023	2	06	1-RS-P-2A	RS/OUTSIDE RECIRC SPRAY PUMP A	11715-FM-091A4/24/04 SFGD	267'	3.2/LM		S	R	I	OFF	ON	YES	N/A	1-EE-SS-01
7024	2	08A	1-RS-MOV-155A	RS/OUTSIDE RECIRC SPRAY PUMP A DISCH ISOL	11715-FM-091A4/24/05 SFGD	256'	--		R	I	O	VEN	OPEN	NO	N/A	1-EP-MC-19

CERTIFICATION:

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DAWN W. JACOBS / ENGINEER

*Dawn W. Jacobs*  
Signature  
MARCH 11, 1993

DAVID J. WERDER / ENGINEER

*David J. Werder*  
Signature  
MARCH 11, 1993

NORTH ANNA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
SMALL BREAK LOCA AND CONTAINMENT SYSTEMS  
(Sorted by Line Number)

Data Base File Name/Date/Time: HAI\_SSEL.DBF / 03/11/93 / 09:33:18  
Sort Criteria: Line Number  
Filter Criteria: (Line Number <= '7000')  
Program File Name & Version: SSEL v5.0

LINE NO.	TRAIN	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Fir. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. ST. Normal	ST. Desired	POWER REQD?	SUPPORTING SYS. Dwg. No./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
7026	2	08A	1-SW-MOV-104D	SW/RECIRC SPRAY COOLER D DISCH ISOL	11715-FM-07881/20/C7	QSPH	265'	NOTE IU	S	R I	CLOSED	OPEN	YES	N/A	1-EP-MC-19
7027	2	08A	1-RS-MOV-155B	RS/OUTSIDE RECIRC SPRAY PUMP B INLET ISOL	11715-FM-091A4/24/A6	SFGD	267'	--	R	I	OPEN	OPEN	NO	N/A	1-EP-MC-21
7028	2	06	1-RS-P-2B	RS/OUTSIDE RECIRC SPRAY PUMP B	11715-FM-091A4/24/B3	SFGD	267'	3.5/JK	S	R I	OFF	ON	YES	N/A	1-EE-SS-02
7029	2	08B	1-RS-MOV-156B	RS/OUTSIDE RECIRC SPRAY PUMP B DISCH ISOL	11715-FM-091A4/24/D5	SFGD	256'	--	R	I	OPEN	OPEN	NO	N/A	1-EP-MC-21
7031	2	08A	1-SW-MOV-104C	SW/RECIRC SPRAY COOLER C DISCH ISOL	11715-FM-07881/20/C6	QSPH	265'	NOTE IV	S	R I	CLOSED	OPEN	YES	N/A	1-EP-MC-21
7032	2	21	1-RS-TK-1A*	RS/OUTSIDE RECIRC SPRAY PUMP A SEAL TANK	11715-FM-091A4/24/C4	SFGD	267'	3.2/LM	S	I	N/A	N/A	NO	N/A	N/A
7033	2	21	1-RS-TK-1B*	RS/OUTSIDE RECIRC SPRAY PUMP B SEAL TANK	11715-FM-091A4/24/C3	SFGD	267'	3.5/JK	S	I	N/A	N/A	NO	N/A	N/A
7034	2	21	1-RS-E-2A*	RS/OUTSIDE RECIRC SPRAY PUMP A SEAL HX	11715-FM-091A4/24/C4	SFGD	267'	3.2/LM	S	I	N/A	N/A	NO	N/A	N/A
7035	2	21	1-RS-E-2B*	RS/OUTSIDE RECIRC SPRAY PUMP B SEAL HX	11715-FM-091A4/24/C3	SFGD	267'	3.5/JK	S	I	N/A	N/A	NO	N/A	N/A
7035E	1	05	1-SW-P-5	SW/RADIATION MONITORING PUMP	11715-FM-07881/20/C4	QSPH	265'		S	I	OFF	OFF	NO	N/A	N/A
7035F	1	05	1-SW-P-6	SW/RADIATION MONITORING PUMP	11715-FM-07881/20/C5	QSPH	265'		S	I	OFF	OFF	NO	N/A	N/A
7035G	2	05	1-SW-P-7	SW/RADIATION MONITORING PUMP	11715-FM-07881/20/C6	QSPH	265'		S	I	OFF	OFF	NO	N/A	N/A
7035H	2	05	1-SW-P-8	SW/RADIATION MONITORING PUMP	11715-FM-07881/20/C8	QSPH	265'		S	I	OFF	OFF	NO	N/A	N/A
7035I	1	05	1-SW-P-9A	SW/RADIATION MONITORING PUMP	11715-FM-078C1/32/E3	AUX	263'		S	I	OFF	OFF	NO	N/A	N/A
7035J	2	05	1-SW-P-9B	SW/RADIATION MONITORING PUMP	11715-FM-078C1/32/E3	AUX	263'		S	I	OFF	OFF	NO	N/A	N/A
7036	2	21	1-RS-TK-1	RS/CASING COOLING TANK	11715-FM-091B1/05/C4	YARD/TUNN	270'	2.5/R	S	I	N/A	N/A	NO	N/A	N/A
7036A	2	18	1-RS-LT-103A	RS/CASING COOLING TANK LEVEL XMTR	11715-FM-091B1/05/4D	YARD	270'	NOTE IX	S	R I	N/A	N/A	YES	11715-RS-029/6	1-EP-CB-04B
7036B	2	18	1-RS-LI-103A	RS/CASING COOLING TANK LEVEL INDICATOR	11715-FM-091B1/05/3D	SB	277'	7/C	S	R I	N/A	N/A	YES	11715-RS-029/6	1-RS-LT-103A

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DANN W. JACOBS / ENGINEER

*D. Jacobs*  
Signature

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

*D. Werder*  
Signature

MARCH 11, 1993

NORTH ANNA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
SMALL BREAK LOCA AND CONTAINMENT SYSTEMS  
(Sorted by Line Number)

Data Base File Name/Date/Time: NA1\_SSEL.DBF / 03/11/93 / 09:33:18  
Sort Criteria: Line Number  
Filter Criteria: (Line Number >= 7000)  
Program File Name & Version: SSEL v0.0

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr.Elv.	LOCATION Rm. or Row/Col.	OP. ST. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DNG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
7036D	2	18	1-RS-LS-103A	RS/CASING COOLING TANK LEVEL SWITCH	11715-FM-09181/05/3D SB	252'	6.5/D	S R I	N/A	N/A	NO	N/A		N/A	
7036E	2	18	1-RS-LT-103B	RS/CASING COOLING TANK LEVEL XNTR	11715-FM-09181/05/4C YARD	270'	NOTE 1X	S R I	N/A	N/A	YES	11715-RS-030/6	1-EP-CB-040		
7036F	2	18	1-RS-LI-103B	RS/CASING COOLING TANK LEVEL INDICATOR	11715-FM-09181/05/3C SB	277'	7/C	S R I	N/A	N/A	YES	11715-RS-030/6	1-RS-LT-103B		
7036G	2	18	1-RS-LS-103B	RS/CASING COOLING TANK LEVEL SWITCH	11715-FM-09181/05/3C SB	252'	6.5/D	S R I	N/A	N/A	NO	N/A		N/A	
7037	2	05	1-RS-P-3A	RS/CASING COOLING PUMP A	11715-FM-09181/05/B7 CSCPH	271'	NOTE 1Y	S R I	OFF	ON	YES	N/A	1-EP-MC-20		
7038	2	08A	1-RS-MOY-101A	RS/CASING COOLING PUMP A DISCH ISOL	11715-FM-09181/05/E7 SFGD	267'	--	R I	OPEN	OPEN	NO	N/A	1-EP-MC-20		
7039	2	08A	1-RS-MOY-100A	RS/CASING COOLING PUMP A DISCH ISOL	11715-FM-09181/05/E7 SFGD	267'	NOTE 1Z	S R I	CLOSED	OPEN	YES	N/A	1-EP-MC-20		
7040	2	05	1-RS-P-3B	RS/CASING COOLING PUMP B	11715-FM-09181/05/B6 CSCPH	271'	NOTE 1AA	S R I	OFF	ON	YES	N/A	1-EP-MC-22		
7041	2	08A	1-RS-MOY-101B	RS/CASING COOLING PUMP B DISCH ISOL	11715-FM-09181/05/F7 SFGD	267'	--	R I	OPEN	OPEN	NO	N/A	1-EP-MC-21		
7042	2	08A	1-RS-MOY-100B	RS/CASING COOLING PUMP B DISCH ISOL	11715-FM-09181/05/F7 SFGD	267'	NOTE 1BB	S R I	CLOSED	OPEN	YES	N/A	1-EP-MC-21		
7043	1	07	1-HC-TV-104A	HS/CONTAINMENT ATM PURGE ISOL	11715-FMC-092A1/1/C4 AUX	244'	6/H	S R I, 24, 38	CLOSED	OPEN	YES	13075-HC-002/1	1-HC-SOV-104A		
7043	1	07	1-HC-TV-104A	HS/CONTAINMENT ATM PURGE ISOL	11715-FMC-092A1/1/C4 AUX	244'	6/H	R I, 24, 39	CLOSED	CLOSED	NO	13075-HC-002/1	1-HC-SOV-104A		
7044	1	08B	1-HC-SOV-104A	HS/CONTAINMENT ATM PURGE PILOT	11715-FMC-092A1/1/C4 AUX	244'	6/H	S R I, 24, 38	VENT	AIR	YES	13075-HC-002/1	1-EP-CB-80E		
7044	1	08B	1-HC-SOV-104A	HS/CONTAINMENT ATM PURGE PILOT	11715-FMC-092A1/1/C4 AUX	244'	6/H	R I, 24, 39	VENT	VENT	NO	13075-HC-002/1	1-EP-CB-80E		
7045	1	07	1-HC-TV-104B	HC/CONTAINMENT ATM PURGE ISOL	11715-FMC-092A1/1/C4 AUX	244'	6/H	S R I, 24, 38	CLOSED	OPEN	YES	13075-HC-003/1	1-HC-SOV-104B		
7045	1	07	1-HC-TV-104B	HC/CONTAINMENT ATM PURGE ISOL	11715-FMC-092A1/1/C4 AUX	244'	6/H	-- I, 24, 39	CLOSED	CLOSED	NO	13075-HC-003/1	1-HC-SOV-104B		

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAWN W. JACOBS / ENGINEER

*Dawn W. Jacobs*  
Signature

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

*David J. Werder*  
Signature

MARCH 11, 1993



NORTH ANNS UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 SMALL BREAK LOCA AND CONTAINMENT SYSTEMS  
 (Sorted by Line Number)

Data Base File Name/Date/Time: NA1\_SSEL.DBF / 03/11/93 / 09:33:18  
 Sort Criteria: Line Number  
 Filter Criteria: (Line Numbers > 7000)  
 Program File Name & Version: SSEL v0.0

LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	Flr./Elev.	EQUIPMENT LOCATION	OP. ST.	NOTES	Desired	REQ'D	INTERCONNECTIONS			
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	
7045	1	088	1-HC-SOV-1048	11715-FMC-092A1/1/C4	AUX	244'	6/N	S	R	1,24, 38	VEHT	AIR	YES	13075-HC-003/1	1-EP-CB-808
7046	1	088	1-HC-SOV-1048	11715-FMC-092A1/1/C4	AUX	244'	6/N	R		1,24, 39	VEHT	VEHT	NO	13075-HC-003/1	1-EP-CB-808
7047	1	R	1-HC-8	11715-FMC-092A1/1/B3	AUX	274'	10/Y	--		1,15, 38	CLOSED	OPEN	NO	N/A	N/A
7048	1	0	1-HC-HC-1	11715-FMC-092A1/1/B3	AUX	274'	11.2/GH	S	R	1,38	OFF	ON	YES	N/A	1-EP-HC-11
7049	1	R	1-HC-10	11715-FMC-092A1/1/B3	REC'D RM 2	270'	--	--		1,15, 38	CLOSED	OPEN	NO	N/A	N/A
7050	1	07	1-HC-TV-1058	11715-FMC-092A1/1/E7	AUX	244'	7/K	S		1,24, 38	CLOSED	OPEN	YES	11715-HC-005	1-HC-SOV-1058
7050	1	07	1-HC-TV-1058	11715-FMC-092A1/1/E7	AUX	244'	7/K	--		1,24, 39	CLOSED	CLOSED	NO	11715-HC-005	1-HC-SOV-1058
7051	1	088	1-HC-SOV-1058	11715-FMC-092A1/1/E8	AUX	244'	7/K	S	R	1,24, 38	VEHT	AIR	YES	11715-HC-005	1-EP-CB-808
7051	1	088	1-HC-SOV-1058	11715-FMC-092A1/1/E8	AUX	244'	7/K	R		1,24, 39	VEHT	VEHT	NO	11715-HC-005	1-EP-CB-808
7052	1	07	1-HC-TV-105A	11715-FMC-092A1/1/E7	AUX	244'	7/K	S		1,24, 38	CLOSED	OPEN	YES	13075-HC-004/1	1-HC-SOV-105A
7052	1	07	1-HC-TV-105A	11715-FMC-092A1/1/E7	AUX	244'	7/K	--		1,24, 39	CLOSED	CLOSED	NO	13075-HC-004/1	1-HC-SOV-105A
7053	1	088	1-HC-SOV-105A	11715-FMC-092A1/1/E8	AUX	244'	7/K	S	R	1,24, 38	VEHT	AIR	YES	N/A	1-EP-CB-80E
7053	1	088	1-HC-SOV-105A	11715-FMC-092A1/1/E8	AUX	244'	7/K	R		1,24, 39	VEHT	VEHT	NO	N/A	1-EP-CB-80E
7054	2	07	1-HC-TV-106A	11715-FMC-092A1/1/C5	AUX	244'	6/J	S		1,24, 38	CLOSED	OPEN	YES	13075-HC-006/1	1-HC-SOV-106A
7054	2	07	1-HC-TV-106A	11715-FMC-092A1/1/C5	AUX	244'	6/J	--		1,24, 39	CLOSED	CLOSED	NO	13075-HC-006/1	1-HC-SOV-106A

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAWN V. JACOBS / ENGINEER  
 Signature: *Dawn Jacobs*  
 MARCH 11, 1993

DAVID J. WENDER / ENGINEER  
 Signature: *David Wender*  
 MARCH 11, 1993

NORTH ANNA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
SMALL BREAK LOGIC AND CONTAINMENT SYSTEMS  
(Sorted by Line Number)

Data Base File Name/Date/Time: HAL\_SSEL.DBF / 03/11/93 / 09:33:18  
Sort Criteria: Line Number  
Filter Criteria: (Line Numbers=7000\*)  
Program File Name & Version: SSEN v0.0

LINE NO.	EQUIP TRAJN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dep. No./Rev./Zone	Building	Equipment Location	Sort	Notes	Normal	Desired	REQ'D	INTERCONNECTIONS		
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
7055	2	088	1-HC-SOV-106A HC/CONTAINMENT ATM PURGE ISOL PILOT	11715-FMC-092A1/1/CS AUX	244'	6/J	S R	1,24, 38	VENT	AIR	YES	13075-HC-006/1	1-EP-CB-80C	
7055	2	088	1-HC-SOV-106A HC/CONTAINMENT ATM PURGE ISOL PILOT	11715-FMC-092A1/1/CS AUX	244'	6/J	R	1,24, 39	VENT	VENT	NO	13075-HC-006/1	1-EP-CB-80C	
7056	2	07	1-HC-TV-106B HC/CONTAINMENT ATM ISOL	11715-FMC-092A1/1/CS AUX	244'	6/J	S	1,24, 38	CLOSED	OPEN	YES	13075-HC-007/1	1-HC-SOV-100B	
7056	2	07	1-HC-TV-106B HC/CONTAINMENT ATM ISOL	11715-FMC-092A1/1/CS AUX	244'	6/J	--	1,24, 39	CLOSED	CLOSED	NO	13075-HC-007/1	1-HC-SOV-106B	
7057	2	088	1-HC-SOV-106B HC/CONTAINMENT ATM PURGE ISOL PILOT	11715-FMC-092A1/1/CS AUX	244'	6/J	S R	1,24, 38	VENT	AIR	YES	13075-HC-007/1	1-EP-CB-80C	
7057	2	088	1-HC-SOV-106B HC/CONTAINMENT ATM PURGE ISOL PILOT	11715-FMC-092A1/1/CS AUX	244'	6/J	R	1,24, 39	VENT	VENT	NO	13075-HC-007/1	1-EP-CB-80C	
7058	2	R	2-HC-2 HC/HYDROGEN COMBINDER 2 INLET ISOL	11715-FMC-092A1/1/CS AUX	270'	RECO RM 2	--	1,15, 39	CLOSED	OPEN	NO	N/A	N/A	
7059	2	0	2-HC-HC-1 HC/HYDROGEN COMBINDER 2	11715-FMC-092A1/1/CS AUX	274'	11.7/CR	S R	1,39	OFF	ON	YES	N/A	2-EP-HC-11	
7060	2	R	2-HC-16 HC/HYDROGEN COMBINDER 2 DISCH ISOL	11715-FMC-092A1/1/CS AUX	270'	RECO RM 2	--	1,15, 39	CLOSED	OPEN	NO	N/A	N/A	
7061	2	07A	1-HC-TV-107B HC/CONTAINMENT ATM RETURN ISOL	11715-FMC-092A1/1/CS AUX	244'	7/J	S	1,24, 38	CLOSED	OPEN	YES	13075-HC-009/1	1-HC-SOV-107B	
7061	2	07	1-HC-TV-107B HC/CONTAINMENT ATM RETURN ISOL	11715-FMC-092A1/1/CS AUX	244'	7/J	--	1,24, 39	CLOSED	CLOSED	NO	13075-HC-009/1	1-HC-SOV-107B	
7061A	2	07A	1-HC-TV-103A HC/HYDROGEN ANALYZER UNIT 1 DISCH ISOL	11715-FMC-092A1/1/CS AUX	244'	9/J	R	1,38	CLOSED	CLOSED	NO	N/A	N/A	
7061B	2	07A	2-HC-TV-203A HC/HYDROGEN ANALYZER UNIT 1 DISCH ISOL	11715-FMC-092A1/1/CS AUX	244'	9/J	R	1,39	CLOSED	CLOSED	NO	N/A	N/A	
7062	2	088	1-HC-SOV-107B HC/CONTAINMENT ATM RETURN ISOL PILOT	11715-FMC-092A1/1/CS AUX	244'	7/J	S R	1,24, 38	VENT	AIR	YES	13075-HC-009/1	1-EP-CB-80C	
7062	2	088	1-HC-SOV-107B HC/CONTAINMENT ATM RETURN ISOL PILOT	11715-FMC-092A1/1/CS AUX	244'	7/J	R	1,24, 39	VENT	VENT	NO	13075-HC-009/1	1-EP-CB-80C	

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAVE W. JACOBS / ENGINEER

*DW Jacobs*  
Signature  
MARCH 11, 1993

DAVID J. WEBER / ENGINEER

*David J. Weber*  
Signature  
MARCH 11, 1993

LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	DOG. NO./REV./ZONE	EQUIPMENT LOCATION	LOC. OR ROW/COL.	NOTES	OP. ST.	POWER SUPPORTING SYS.	REQ'D INTERCONNECTIONS					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
7062A	2	088	1-HC-TV-103B	HC/HYDROGEN ANALYZER UNIT 1 DISCH ISOL	11715-FMC-092A1/1/88 AUX	244'	7/3	R	1,38	CLOSED	NO	N/A	N/A	N/A	
7062B	2	088	2-HC-TV-203B	HC/HYDROGEN ANALYZER UNIT 1 DISCH ISOL	11715-FMC-092A1/1/86 AUX	244'	7/3	R	1,39	CLOSED	NO	N/A	N/A	N/A	
7063	2	07	1-HC-TV-107A	HC/CONTAINMENT ATM RETURN ISOL	11715-FMC-092A1/1/CS AUX	244'	7/3	S	1,24, 38	CLOSED	OPEN	YES	13075-HC-008/1	1-HC-SOV-107A	
7063	2	07	1-HC-TV-107A	HC/CONTAINMENT ATM RETURN ISOL	11715-FMC-092A1/1/CS AUX	244'	7/3	--	1,24, 39	CLOSED	CLOSED	NO	13075-HC-008/1	1-HC-SOV-107A	
7063A	1	07	2-HC-TV-205B	HC/HYDROGEN COMBINER 1 UNIT 2 DISCH ISOL	11715-FMC-092A1/1/ET AUX	244'	11/L	--	1,38	CLOSED	CLOSED	NO	N/A	2-HC-SOV-205B	
7063A	1	07	2-HC-TV-205B	HC/HYDROGEN COMBINER 1 UNIT 2 DISCH ISOL	11715-FMC-092A1/1/ET AUX	244'	11/L	S	1,39	CLOSED	OPEN	YES	N/A	2-HC-SOV-205B	
7064	2	088	1-HC-SOV-107A	HC/CONTAINMENT ATM RETURN ISOL PILOT	11715-FMC-092A1/1/CS AUX	244'	7/3	S R	1,24, 38	VENT	AIR	YES	13075-HC-008/1	1-EP-CB-80C	
7064	2	088	1-HC-SOV-107A	HC/CONTAINMENT ATM RETURN ISOL PILOT	11715-FMC-092A1/1/CS AUX	244'	7/3	R	1,24, 39	VENT	VENT	NO	13075-HC-008/1	1-EP-CB-80C	
7064A	1	088	2-HC-SOV-205B	HC/HYDROGEN COMBINER UNIT 2 DISCH ISOL PILOT	11715-FMC-092A1/1/ET AUX	244'	11/L	R	1,38	VENT	VENT	NO	N/A	N/A	
7064A	1	088	2-HC-SOV-205B	HC/HYDROGEN COMBINER UNIT 2 DISCH ISOL PILOT	11715-FMC-092A1/1/ET AUX	244'	11/L	S R	1,39	VENT	AIR	YES	N/A	2-EP-CB-80B	
7065A	1	07	2-HC-TV-205A	HC/HYDROGEN COMBINER 1 UNIT 2 DISCH ISOL	11715-FMC-092A1/1/EG AUX	244'	11/L	--	1,38	CLOSED	CLOSED	NO	N/A	2-HC-SOV-205A	
7065A	1	07	2-HC-TV-205A	HC/HYDROGEN COMBINER 1 UNIT 2 DISCH ISOL	11715-FMC-092A1/1/EG AUX	244'	11/L	S	1,39	CLOSED	OPEN	YES	N/A	2-HC-SOV-205A	
7066A	1	088	2-HC-SOV-205A	HC/HYDROGEN COMBINER 1 UNIT 2 DISCH ISOL PILOT	11715-FMC-092A1/1/ET AUX	244'	11/L	R	1,38	VENT	VENT	NO	N/A	N/A	
7066A	1	088	2-HC-SOV-205A	HC/HYDROGEN COMBINER 1 UNIT 2 DISCH ISOL PILOT	11715-FMC-092A1/1/ET AUX	244'	11/L	S R	1,39	VENT	AIR	YES	N/A	2-EP-CB-80E	
7067	2	07	2-HC-TV-207B	HC/HYDROGEN COMBINER 2 UNIT 2 DISCH ISOL	11715-FMC-092A1/1/CS AUX	244'	11/3	--	1,38	CLOSED	CLOSED	NO	N/A	2-HC-SOV-207B	

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAWN M. JACOBS / ENGINEER

*Dawn Jacobs*  
 Signature

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

*David J. Werder*  
 Signature

MARCH 11, 1993

LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	Equipment	LOCATION	OP. ST.	POWER SUPPORTING S'YS.	RES'D INTERCONNECTIONS					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
7067	2	07	2-HC-TV-2078	HC/HYDROGEN COMBINDER 2 UNIT 2 DISCH ISOL	11715-FMC-092A1/1/C6 AUX	244'	11/J	5	1,39	CLOSED	OPEN	YES	N/A	2-HC-SOV-2078	
7068	2	088	2-HC-SOV-2078	HC/HYDROGEN COMBINDER 2 UNIT 2 DISCH ISOL PILOT	11715-FMC-092A1/1/C6 AUX	244'	11/J	R	1,38	VENT	VERT	NO	N/A	N/A	
7068	2	088	2-HC-SOV-2078	HC/HYDROGEN COMBINDER 2 UNIT 2 DISCH ISOL PILOT	11715-FMC-092A1/1/C6 AUX	244'	11/J	S R	1,39	VENT	AIR	YES	N/A	2-EP-CB-800	
7069	2	07	2-HC-TV-207A	HC/HYDROGEN COMBINDER 2 UNIT 2 DISCH ISOL	11715-FMC-092A1/1/C6 AUX	244'	11/J	--	1,38	CLOSED	CLOSED	NO	N/A	2-HC-SOV-207A	
7069	2	07	2-HC-TV-207A	HC/HYDROGEN COMBINDER 2 UNIT 2 DISCH ISOL	11715-FMC-092A1/1/C6 AUX	244'	11/J	S	1,39	CLOSED	OPEN	YES	N/A	2-HC-SOV-207A	
7070	2	088	2-HC-SOV-207A	HC/HYDROGEN COMBINDER 2 UNIT 2 DISCH ISOL PILOT	11715-FMC-092A1/1/C6 AUX	244'	11/J	R	1,38	VENT	VERT	NO	N/A	N/A	
7070	2	088	2-HC-SOV-207A	HC/HYDROGEN COMBINDER 2 UNIT 2 DISCH ISOL PILOT	11715-FMC-092A1/1/C6 AUX	244'	11/J	S R	1,39	VENT	AIR	YES	N/A	2-EP-CB-800	
7071	1	07	2-HC-TV-204A	HC/UNIT 2 CONT. ATH PURGE ISOL	11715-FMC-092A1/1/C3 AUX	244'	12-2/J	--	1,38	CLOSED	CLOSED	NO	N/A	2-HC-SOV-204A	
7071	1	078	2-HC-TV-204A	HC/UNIT 2 CONT. ATH PURGE ISOL	11715-FMC-092A1/1/C3 AUX	244'	12-2/J	S	1,39	CLOSED	OPEN	YES	N/A	2-HC-SOV-204A	
7072	1	088	2-HC-SOV-204A	HC/UNIT 2 CONT. ATH PURGE ISOL PILOT	11715-FMC-092A1/1/C3 AUX	244'	12-2/J	R	1,38	VENT	VERT	NO	N/A	N/A	
7072	1	088	2-HC-SOV-204A	HC/UNIT 2 CONT. ATH PURGE ISOL PILOT	11715-FMC-092A1/1/C3 AUX	244'	12-2/J	S R	1,39	VENT	AIR	YES	N/A	2-EP-CB-800	
7073	1	07	2-HC-TV-204B	HC/UNIT 2 CONT. ATH PURGE ISOL	11715-FMC-092A1/1/C3 AUX	244'	12-2/J	--	1,38	CLOSED	CLOSED	NO	N/A	2-HC-SOV-204B	
7073	1	078	2-HC-TV-204B	HC/UNIT 2 CONT. ATH PURGE ISOL	11715-FMC-092A1/1/C3 AUX	244'	12-2/J	S	1,39	CLOSED	OPEN	YES	N/A	2-HC-SOV-204B	
7074	1	088	2-HC-SOV-204B	HC/UNIT 2 CONT. ATH PURGE ISOL PILOT	11715-FMC-092A1/1/C3 AUX	244'	12-2/J	R	1,38	VENT	VERT	NO	N/A	N/A	
7074	1	088	2-HC-SOV-204B	HC/UNIT 2 CONT. ATH PURGE ISOL PILOT	11715-FMC-092A1/1/C3 AUX	244'	12-2/J	S R	1,39	VENT	AIR	YES	N/A	2-EP-CB-800	
7075	2	07	2-HC-TV-206A	HC/UNIT 2 CONT. ATH PURGE ISOL	11715-FMC-092A1/1/C3 AUX	244'	11-8/J	--	1,38	CLOSED	CLOSED	NO	N/A	2-HC-SOV-206A	
7075	2	078	2-HC-TV-206A	HC/UNIT 2 CONT. ATH PURGE ISOL	11715-FMC-092A1/1/C3 AUX	244'	11-8/J	S	1,39	CLOSED	OPEN	YES	N/A	2-HC-SOV-206A	

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAWN W. JACOBS / ENGINEER

*Dawn W. Jacobs*  
 Signature

MARCH 11, 1993

DAVID J. WEBER / ENGINEER

*David J. Weber*  
 Signature

MARCH 11, 1993

NORTH ANNA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
SMALL BREAK LOCA AND CONTAINMENT SYSTEMS  
(Sorted by Line Number)

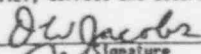
Data Base File Name/Date/Time: NA1\_SSEL.DBF / 03/11/93 / 09:33:18  
Sort Criteria: Line Number  
Filter Criteria: (Line Number >= '7000')  
Program File Name & Version: SSEM v0.0

LINE NO.	EQUIP TRAH CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	EQUIPMENT LOCATION		SORT NOTES		OP. ST.		POWER REQD?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS		
					Building	Fir.Elv.	Rm. or Row/Col.	(10)	(11)	Normal				Desired	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
7076	2	088	2-HC-SOV-206A	HC/UNIT 2 CONT. ATM PURGE ISOL PILOT	11715-FMC-092A1/1/C3	AUX	244'	11.8/J	R	1,38	VENT	VENT	NO	N/A	N/A
7076	2	088	2-HC-SOV-206A	HC/UNIT 2 CONT. ATM PURGE ISOL PILOT	11715-FMC-092A1/1/C3	AUX	244'	11.8/J	S R	1,39	VENT	AIR	YES	N/A	2-EP-CB-80G
7077	2	07	2-HC-TV-206H	HC/UNIT 2 CONT. ATM PURGE ISOL	11715-FMC-092A1/1/C2	AUX	244'	11.8/J	--	1,38	CLOSED	CLOSED	NO	N/A	2-HC-SOV-206B
7077	2	078	2-HC-TV-206B	HC/UNIT 2 CONT. ATM PURGE ISOL	11715-FMC-092A1/1/C2	AUX	244'	11.8/J	S	1,39	CLOSED	OPER	YES	N/A	2-HC-SOV-206B
7078	2	088	2-HC-SOV-206B	HC/UNIT 2 CONT. ATM PURGE ISOL PILOT	11715-FMC-092A1/1/C2	AUX	244'	11.8/J	R	1,38	VENT	VENT	NO	N/A	N/A
7078	2	088	2-HC-SOV-206B	HC/UNIT 2 CONT. ATM PURGE ISOL PILOT	11715-FMC-092A1/1/C2	AUX	244'	11.8/J	S R	1,39	VENT	AIR	YES	N/A	2-EP-CB-80D
7101	1	07	1-MS-TV-109	MS/STEAM DRAIN CONTMT ISOL	11715-FM-070A1/26/1B	MSVH	273'	4.5/GA	S	1	OPEN	CLOSED	NO	11715-MS-113/6	1-MS-SOV-109A 1-MS-SOV-109B
7102	1	088	1-MS-SOV-109A	MS/STEAM DRAIN CONTMT ISOL PILOT	11715-FM-070A1/26/A8	MSVH	273'	4.5/GA	S R	1,5,36	AIR	VENT	NO	11715-MS-113/6	N/A
7103	1	088	1-MS-SOV-109B	MS/STEAM DRAIN CONTMT ISOL PILOT	11715-FM-070A1/26/A8	MSVH	273'	4.5/GA	S R	1,5,36	AIR	VENT	NO	11715-MS-113/6	N/A
7104	1	07	1-MS-TV-110	MS/SG BLOWDOWN CONTMT ISOL	11715-FM-070B3/23/A4	MSVH	271'	4.5/GA	S	1	OPEN	CLOSED	NO	11715-MS-114/3	1-MS-SOV-110A 1-MS-SOV-110B
7105	1	088	1-MS-SOV-110A	MS/SG BLOWDOWN CONTMT ISOL PILOT	11715-FM-070B3/23/A4	MSVH	271'	4.6/GA	S R	1	AIR	VENT	NO	11715-MS-114/3	N/A
7106	1	088	1-MS-SOV-110B	MS/SG BLOWDOWN CONTMT ISOL PILOT	11715-FM-070B3/23/A4	MSVH	271'	4.6/GA	S R	1	AIR	VENT	NO	11715-MS-114/3	N/A
7107	1	07	1-BD-TV-100A	BD/SG BLOWDOWN CONTMT ISOL	11715-FM-098A2/16/C5	AUX	244'	7/J	S	1	OPEN	CLOSED	NO	11715-BD-001/6	1-BD-SOV-100A
7108	1	088	1-BD-SOV-100A	BD/SG 1A BLOWDOWN CONTMT ISOL PILOT	11715-FM-098A2/16/D5	AUX	244'	7/J	S R	1	AIR	VENT	NO	11715-BD-001/6	N/A
7109	2	07	1-BD-TV-100B	BD/SG BLOWDOWN CONTMT ISOL	11715-FM-098A2/16/C6	CONTMT	241'	8	S	1	OPEN	CLOSED	NO	11715-BD-002/10	1-BD-SOV-100B
7110	2	088	1-BD-SOV-100B	BD/SG BLOWDOWN CONTMT ISOL PILOT	11715-FM-098A2/16/D6	CONTMT	241'	8	S R	1	AIR	VENT	NO	11715-BD-002/10	N/A
7111	1	07	1-BD-TV-100C	BD/SG BLOWDOWN CONTMT ISOL	11715-FM-098A3/15/C5	AUX	244'	7/J	S	1	OPEN	CLOSED	NO	11715-BD-003/6	1-BD-SOV-100C
7112	1	088	1-BD-SOV-100C	BD/SG 1B BLOWDOWN CONTMT ISOL PILOT	11715-FM-098A3/15/D5	AUX	244'	7/J	S R	1	AIR	VENT	NO	11715-BD-003/6	N/A
7113	2	07	1-BD-TV-100D	BD/SG 1B BLOWDOWN CONTMT ISOL	11715-FM-098A3/15/C6	CONTMT	241'	8	S	1	OPEN	CLOSED	NO	11715-BD-004/10	1-BD-SOV-100D

CERTIFICATION:


The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAWN W. JACOBS / ENGINEER

  
Signature

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

  
Signature

MARCH 11, 1993

NORTH ANNA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
SMALL BREAK LOCA AND CONTAINMENT SYSTEMS  
(Sorted by Line Number)

Data Base File Name/Date/Time: NA1\_SSEL.DBF / 03/11/93 / 09:33:18  
Sort Criteria: Line Number  
Filter Criteria: (Line Number >= '7000')  
Program File Name & Version: SSEL v0.0

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. ST. Normal	ST. Desired	PRYER REQ'D	SUPPORTING SYS. DNG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
7114	2	088	1-BD-SOV-100D	BD/SG 1B BLOWDOWN CONTMT ISOL PILOT	11715-FM-098A3/15/D6	CONTMT	241'	8	S R I	AIR	VENT	NO	11715-BD-004/10	N/A	
7115	1	07	1-BD-TV-100E	BD/SG 1C BLOWDOWN CONTMT ISOL	11715-FM-098A4/17/D4	AUX	244'	7/J	S I	OPEN	CLOSED	NO	11715-BD-005/6	1-BD-SOV-100E	
7116	1	088	1-BD-SOV-100E	BD/SG 1C BLOWDOWN CONTMT ISOL PILOT	11715-FM-098A4/17/D5	AUX	244'	7/J	S R I	AIR	VENT	NO	11715-BD-005/6	N/A	
7117	2	07	1-BD-TV-100F	BD/SG 1C BLOWDOWN CONTMT ISOL	11715-FM-098A4/17/C6	CONTMT	241'	8	S I	OPEN	CLOSED	NO	11715-BD-006/10	1-BD-SOV-100F	
7118	2	088	1-BD-SOV-100F	BD/SG 1C BLOWDOWN CONTMT ISOL PILOT	11715-FM-098A4/17/C6	CONTMT	241'	8	S R I	AIR	VENT	NO	11715-BD-006/10	N/A	
7119	1	07	1-S1-TV-100	SI/NITROGEN HEADER CONTMT ISOL	11715-FM-098B1/17/F3	AUX	246'	6.7/K	S I	OPEN	CLOSED	NO	11715-S1-034/5	1-S1-SOV-100A 1-S1-SOV-100B	
7122	1	07	1-S1-TV-101	SI/WASTE GAS FILTER CONTMT ISOL	11715-FM-098B1/17/E4	AUX	244'	7/L	S I	OPEN	CLOSED	NO	11715-S1-013/5	1-S1-SOV-101	
7123A	1	088	1-S1-SOV-100A	SI/NITROGEN HEADER CONTMT ISOL PILOT	11715-FM-098B1/17/F3	AUX	246'	6.7/K	S R I	AIR	VENT	NO	11715-S1-034/5	N/A	
7123B	1	088	1-S1-SOV-100B	SI/NITROGEN HEADER CONTMT ISOL PILOT	11715-FM-098B1/17/F3	AUX	246'	6.7/K	S R I	AIR	VENT	NO	11715-S1-034/5	N/A	
7124	1	088	1-S1-SOV-101	SI/WASTE GAS FILTER CONTMT ISOL PILOT	11715-FM-098B1/17/E4	CONTMT	244'	7/L	S R I	AIR	VENT	NO	11715-S1-013/5	N/A	
7125	1	07	1-S1-TV-1859	SI/ACCUM TEST LINE CONTMT ISOL	11715-FM-096A2/23/F7	SFGD	267'	--	-- I	CLOSED	CLOSED	NO	11715-S1-035/7	1-S1-SOV-1859	
7126	1	088	1-S1-SOV-1859	SI/ACCUM TEST LINE CONTMT ISOL PILOT	11715-FM-096A2/23/F7	SFGD	267'	--	R I	VENT	VENT	NO	11715-S1-035/7	N/A	
7127	2	07	1-S1-HCV-1936	SI/WASTE GAS FLTR RETURN CONTMT ISOL	11715-FM-096B1/17/E5	CONTMT	241'	8	-- I	CLOSED	CLOSED	NO	11715-S1-014/9	1-S1-SOV-1936	
7128	2	088	1-S1-SOV-1936	SI/WASTE GAS FLTR RETURN CONTMT ISOL PILOT	11715-FM-096B1/17/E5	CONTMT	241'	8	R I	VENT	VENT	NO	11715-S1-014/9	N/A	
7129	2	07	1-S1-TV-1842	SI/ACCUM TEST LINE CONTMT ISOL	11715-FM-096B1/17/C4	CONTMT	262'	13	-- I	CLOSED	CLOSED	NO	11715-S1-013/7	1-S1-SOV-1842	
7130	2	088	1-S1-SOV-1842	SI/ACCUM TEST LINE CONTMT ISOL PILOT	11715-FM-096B1/17/C4	CONTMT	262'	13	R I	VENT	VENT	NO	11715-S1-013/7	N/A	
7131	1	07	1-CH-TV-1204A	CH/LETDOWN LINE CONTMT ISOL	11715-FM-095C1/14/E3	CONTMT	241'	8	-- I	CLOSED	CLOSED	NO	11715-CH-110/1	1-CH-SOV-1204A	

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DANN W. JACOBS / ENGINEER

*D. W. Jacobs*  
Signature

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

*D. J. Werder*  
Signature

MARCH 11, 1993

NORTH ANNA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
SMALL BREAK LOCA AND CONTAINMENT SYSTEMS  
(Sorted by Line Number)

Data Base File Name: SSEL.DBF / 03/11/93 / 09:33:10  
Sort Criteria: Line Number  
Filter Criteria: (Line Numbers=7000)  
Program File Name & Version: SSEL v0.0

LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Design. No./Rev./Zone	Building	Equipment Location	Sort Notes	Normal	Desired	REQ'D INTERCONNECTIONS				
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	
7131A	1	08B	1-CH-SOV-1204A	11715-CH-100/1	CONTHT	241'	9	R	1	VERT	NO	11715-CH-100/1	N/A	
7132	2	07	1-CH-TV-1204B	11715-PH-095A4/17/83	AUX	245'	6.5/J	S	1	OPEN	CLOSED	NO	11715-CH-070/5	1-CH-SOV-1204B
7132A	2	08B	1-CH-SOV-1204B	11715-CH-070/5	AUX	245'	6.5/J	S	1	AIR	VERT	NO	11715-CH-070/5	N/A
7133	1	07	1-RC-TV-1519A	11715-FH-092B2/23/08	AUX	244'	6.5/J	--	1	CLOSED	CLOSED	NO	11715-RC-036/6	1-RC-SOV-1519A
7136	1	08B	1-RC-SOV-1519A	11715-RC-036/5	AUX	244'	6.5/J	R	1	VERT	NO	11715-RC-036/6	N/A	
7139	1	07	1-CV-TV-150A	11715-FH-092A2/13/84	AUX	244'	6/J	S	1	OPEN	CLOSED	NO	11715-CV-002/6	1-CV-SOV-150A
7140	1	08B	1-CV-SOV-150A	11715-FH-092A2/13/84	AUX	244'	6/J	S	1	AIR	VERT	NO	11715-CV-002/6	N/A
7141	2	07	1-CV-TV-150B	11715-FH-092A2/13/85	AUX	244'	6/J	S	1	OPEN	CLOSED	NO	11715-CV-003/7	1-CV-SOV-150B
7142	2	08B	1-CV-SOV-150B	11715-FH-092A2/13/85	AUX	244'	6/J	S	1	AIR	VERT	NO	11715-CV-003/7	N/A
7143	1	07	1-CV-TV-150C	11715-FH-092A2/13/84	AUX	244'	6/J	S	1	OPEN	CLOSED	NO	11715-CV-004/7	1-CV-SOV-150C
7144	1	08B	1-CV-SOV-150C	11715-FH-092A2/13/84	AUX	244'	6/J	S	1	AIR	VERT	NO	11715-CV-004/7	N/A
7145	2	07	1-CV-TV-150D	11715-FH-092A2/13/85	AUX	244'	6/J	S	1	OPEN	CLOSED	NO	11715-CV-005/6	1-CV-SOV-150D
7146	2	08B	1-CV-SOV-150D	11715-FH-092A2/13/85	AUX	244'	6/J	S	1	AIR	VERT	NO	11715-CV-005/6	N/A
7147	1	07	1-DA-TV-100A	11715-FH-090A1/15/87	AUX	244'	6/J	--	1	CLOSED	CLOSED	NO	N/A	1-DA-SOV-100A
7148	1	08B	1-DA-SOV-100A	11715-FH-090A1/15/87	AUX	244'	6/J	R	1	VERT	NO	11715-DA-018/4	N/A	
7149	2	07	1-DA-TV-100B	11715-FH-090C3/16/83	CONTHT	241'	9	--	1	CLOSED	CLOSED	NO	11715-DA-019/7	1-DA-SOV-100B
7150	2	08B	1-DA-SOV-100B	11715-FH-090C3/16/83	CONTHT	241'	9	R	1	VERT	NO	11715-DA-019/7	N/A	
7151	1	07	1-DG-TV-100A	11715-FH-090C1/17/88	AUX	244'	7/J	--	1	CLOSED	CLOSED	NO	11715-DG-006/3	1-DG-SOV-100A
7152	1	08B	1-DG-SOV-100A	11715-FH-090C1/15/88	AUX	244'	7/J	R	1	VERT	NO	11715-DG-006/3	N/A	
7153	2	07	1-DG-TV-100B	11715-FH-090C1/17/87	CONTHT	241'	7	--	1	CLOSED	CLOSED	NO	11715-DG-005/5	1-DG-SOV-100B
7154	2	08B	1-DG-SOV-100B	11715-FH-090C1/17/87	CONTHT	241'	7	R	1	VERT	NO	11715-DG-005/5	N/A	
7155	1	07	1-WG-TV-100A	11715-FH-090C1/17/83	AUX	244'	6/J	S	1	OPEN	CLOSED	NO	11715-WG-001/3	1-WG-SOV-100A

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAVID W. JACOBS / ENGINEER

*David W. Jacobs*  
Signature

MARCH 11, 1993

DAVID J. REZDER / ENGINEER

*David J. Rezder*  
Signature

MARCH 11, 1993

LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	Equipment Location	Eq. or Rev/Col.	Sort Notes	OP. ST.	Normal	Desired	REQ'D	DWG. NO./REV.	SUPPORTING COMPONENTS
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
7156	1	088	1-VG-SOV-100A	11715-FM-090C/1/17/F4	AUX	244'	6/J	S R I	AIR	VENT	NO	11715-WG-001/3	N/A	
7157	2	07	1-VG-TV-100B	11715-FM-090C/1/17/D3	CONTMT	241'	8	S I	OPEN	CLOSED	NO	11715-WG-002/8	1-VG-SOV-100B	
7158	2	088	1-VG-SOV-100B	11715-FM-090C/1/17/D4	CONTMT	241'	8	S R I	AIR	VENT	NO	11715-WG-002/8	N/A	
7159	1	07	1-AS-FCV-100A	11715-FM-072A2/20/ES	TB	279'	8/Z	S I	OPEN	CLOSED	NO	11715-AS-006/4	1-AS-SOV-100A	
7160	1	088	1-AS-SOV-100A	11715-FM-072A2/20/ES	TB	279'	8/Z	S R I	AIR	VENT	NO	11715-AS-006/4	N/A	
7161	1	07	1-AS-FCV-100B	11715-FM-072A2/20/ES	TB	279'	8/C	S I	OPEN	CLOSED	NO	11715-AS-007/4	1-AS-SOV-100B	
7162	1	088	1-AS-SOV-100B	11715-FM-072A2/20/ES	TB	279'	8/C	S R I	AIR	VENT	NO	11715-AS-007/4	N/A	
7163	1	07	1-LM-TV-100A	11715-FM-092A1/15/77	AUX	259'	6.5/J	S I	OPEN	CLOSED	NO	11715-LM-001/5	1-LM-SOV-100A	
7164	1	088	1-LM-SOV-100A	11715-FM-092A1/15/77	AUX	259'	6.5/J	S R I	AIR	VENT	NO	11715-LM-001/5	N/A	
7165	2	07	1-LM-TV-100B	11715-FM-092A1/15/76	AUX	259'	6.5/J	S I	OPEN	CLOSED	NO	11715-LM-002/5	1-LM-SOV-100B	
7166	2	088	1-LM-SOV-100B	11715-FM-092A1/15/76	AUX	259'	6.5/J	S R I	AIR	VENT	NO	11715-LM-002/5	N/A	
7167	1	07	1-LM-TV-100C	11715-FM-092A1/15/76	AUX	259'	6.5/J	S I	OPEN	CLOSED	NO	11715-LM-003/5	1-LM-SOV-100C	
7168	1	088	1-LM-SOV-100C	11715-FM-092A1/15/76	AUX	259'	6.5/J	S R I	AIR	VENT	NO	11715-LM-003/5	N/A	
7169	2	07	1-LM-TV-100D	11715-FM-092A1/15/76	AUX	259'	6.5/J	S I	OPEN	CLOSED	NO	11715-LM-004/5	1-LM-SOV-100D	
7170	2	088	1-LM-SOV-100D	11715-FM-092A1/15/76	AUX	259'	6.5/J	S R I	AIR	VENT	NO	11715-LM-004/5	N/A	
7171	1	07	1-LM-TV-100E	11715-FM-092A1/15/76	AUX	259'	6.5/J	S I	OPEN	CLOSED	NO	11715-LM-005/5	1-LM-SOV-100E	
7172	1	088	1-LM-SOV-100E	11715-FM-092A1/15/76	AUX	259'	6.5/J	S R I	AIR	VENT	NO	11715-LM-005/5	N/A	

CERTIFICATION:  
 The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAWN V. JACOBS / ENGINEER  
 Signature: *Dawn V. Jacobs*  
 MARCH 11, 1993

DAVID L. WERDER / ENGINEER  
 Signature: *David L. Werder*  
 MARCH 11, 1993



NORTH ANNA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
SMALL BREAK LOCA AND CONTAINMENT SYSTEMS  
(Sorted by Line Number)

Data Base File Name/Date/Time: NA1\_SSEL.DBF / 03/11/93 / 09:33:10  
Sort Criteria: Line Number  
Filter Criteria: (Line Number >= 7000)  
Program File Name & Version: SSEL v0.0

LINE NO.	TRAIN CLASS	EQUIP MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr./Elev.	LOCATION Rm. or Row/Col.	SCRT NOTES	OP. ST. Normal	ST. Desired	POWER REQ'D	SUPPORTING SYS. ENG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
7173	2	07	1-LM-TV-100F	LM/LEAKAGE MONITORING CONTMT ISOL	11715-FM-092A1/15/F5	AUX	259'	6.5/J	S	I	OPEN	CLOSED	NO	11715-LM-006/5	1-LM-SOV-100F
7174	2	08B	1-LM-SOV-100F	LM/LEAKAGE MONITORING CONTMT ISOL PILOT	11715-FM-092A1/15/F5	AUX	259'	6.5/J	S	R	I	AIR	VENT	NO	11715-LM-006/5 N/A
7175	1	07	1-LM-TV-100G	LM/LEAKAGE MONITORING CONTMT ISOL	11715-FM-092A1/15/E7	AUX	259'	6/J	S	I	OPEN	CLOSED	NO	11715-LM-007/5	1-LM-SOV-100G
7176	1	08B	1-LM-SOV-100G	LM/LEAKAGE MONITORING CONTMT ISOL PILOT	11715-FM-092A1/15/F6	AUX	259'	6/J	S	R	I	AIR	VENT	NO	11715-LM-007/5 N/A
7177	2	07	1-LM-TV-100H	LM/LEAKAGE MONITORING CONTMT ISOL	11715-FM-092A1/15/E6	AUX	259'	6/J	S	I,34	OPEN	CLOSED	NO	11715-LM-008	1-LM-SOV-100H
7178	2	08B	1-LM-SOV-100H	LM/LEAKAGE MONITORING CONTMT ISOL PILOT	11715-FM-092A1/15/F6	AUX	259'	6/J	S	R	I,31	AIR	VENT	NO	11715-LM-008 N/A
7179	1	07	1-LM-TV-101A	LM/PRESS SENSOR CONTMT ISOL	11715-FM-092A1/15/D5	AUX	244'	7/J	S	I	OPEN	CLOSED	NO	11715-LM-017/5	1-LM-SOV-101A
7180	1	08B	1-LM-SOV-101A	LM/PRESS SENSOR CONTMT ISOL PILOT	11715-FM-092A1/15/D5	AUX	244'	7/J	S	R	I	AIR	VENT	NO	11715-LM-017/5 N/A
7181	2	07	1-LM-TV-101B	LM/PRESS SENSOR CONTMT ISOL	11715-FM-092A1/15/D5	AUX	246'	7/J	S	I	OPEN	CLOSED	NO	11715-LM-018/5	1-LM-SOV-101B
7182	2	08B	1-LM-SOV-101B	LM/PRESS SENSOR CONTMT ISOL PILOT	11715-FM-092A1/15/D5	AUX	246'	7/J	S	R	I	AIR	VENT	NO	11715-LM-018/5 N/A
7183	1	07	1-LM-TV-101C	LM/PRESS SENSOR CONTMT ISOL	11715-FM-092A1/15/D5	AUX	244'	7/J	S	I	OPEN	CLOSED	NO	11715-LM-017/5	1-LM-SOV-101C
7184	1	08B	1-LM-SOV-101C	LM/PRESS SENSOR CONTMT ISOL PILOT	11715-FM-092A1/15/D5	AUX	244'	7/J	S	R	I	AIR	VENT	NO	11715-LM-017/5 N/A
7185	2	07	1-LM-TV-101D	LM/PRESS SENSOR CONTMT ISOL	11715-FM-092A1/15/D4	AUX	246'	7/J	S	I	OPEN	CLOSED	NO	11715-LM-018/5	1-LM-SOV-101D
7186	2	08B	1-LM-SOV-101D	LM/PRESS SENSOR CONTMT ISOL PILOT	11715-FM-092A1/15/D5	AUX	246'	7/J	S	R	I	AIR	VENT	NO	11715-LM-018/5 N/A
7187	1	07	1-RM-TV-100A	RM/RADIATION MONITORING RETURN CONTMT ISOL	11715-FM-082N3/8/CS	AUX	244'	7/J	S	I	OPEN	CLOSED	NO	11715-RM-024/4	1-RM-SOV-100A
7188	1	08B	1-RM-SOV-100A	RM/RADIATION MONITORING RETURN CONTMT ISOL PILOT	11715-FM-082N3/8/CS	AUX	245'	6.5/JK	S	R	I	AIR	VENT	NO	11715-RM-024/4 N/A
7189	1	07	1-RM-TV-100B	RM/RADIATION MONITORING CONTMT ISOL	11715-FM-082N3/8/D5	AUX	244'	7/J	S	I	OPEN	CLOSED	NO	11715-RM-025/4	1-RM-SOV-100B
7190	1	08B	1-RM-SOV-100B	RM/RADIATION MONITORING CONTMT ISOL PILOT	11715-FM-082N3/8/D5	AUX	244'	7/J	S	R	I	AIR	VENT	NO	11715-RM-025/4 N/A
7191	2	07	1-RM-TV-100C	RM/RADIATION MONITORING CONTMT ISOL	11715-FM-082N3/8/D4	CONTMT	259'	8	S	I	OPEN	CLOSED	NO	11715-RM-026/7	1-RM-SOV-100C

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DANN W. JACOBS / ENGINEER

*D. Jacobs*  
Signature

MARCH 11, 1993


DAVID J. WERDER / ENGINEER


*D. Werder*  
Signature

MARCH 11, 1993

LINE NO.	EQUIP TRAIL CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	Equipment Location	Sort Notes	Normal	Desired	Req'd	Interconnections		
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
7191A	2	08B	1-RM-SOV-109C	RM/RADIATION MONITORING CONTINT ISOL PILOT	11715-FM-082K3/8/04	259'	S R I	AIR	VENT	NO	11715-RM-026/7	N/A	
7192	2	07	1-RM-TV-1000	RM/RADIATION MONITORING RETURN CONTINT ISOL	11715-FM-082K3/8/CS AUX	245'	S I	OPEN	CLOSED	NO	11715-RM-027/4	1-RM-SOV-100B	
7192A	2	08B	1-RM-SOV-100D	RM/RADIATION MONITORING RETURN CONTINT ISOL PILOT	11715-FM-082K3/8/CS AUX	245'	S R I	AIR	VENT	NO	11715-RM-027/4	N/A	
7193	1	07	1-SS-TV-100A	SS/PZR LIQUID SAMPLING CONTINT ISOL	11715-FM-08901/16/76	253'	-- I		CLOSED	NO	11715-SS-001/6	1-SS-SOV-100A	
7194	1	08B	1-SS-SOV-100A	SS/PZR LIQUID SAMPLING CONTINT ISOL PILOT	11715-FM-08901/16/CS	253'	R I	VENT	VENT	NO	11715-SS-001/6	N/A	
7195	1	07	1-SS-TV-100B	SS/PZR LIQUID SAMPLING CONTINT ISOL	11715-FM-08901/16/75	244'	-- I		CLOSED	NO	11715-SS-002/3	1-SS-SOV-100B	
7196	2	08B	1-SS-SOV-100B	SS/PZR LIQUID SAMPLING CONTINT ISOL PILOT	11715-FM-08901/16/CS	244'	R I	VENT	VENT	NO	11715-SS-002/3	N/A	
7197	1	07	1-SS-TV-104A	SS/PZR RLF TK GAS SAMPLING CONTINT ISOL	11715-FM-08901/16/06	253'	-- I		CLOSED	NO	11715-SS-009/5	1-SS-SOV-104A	
7198	1	08B	1-SS-SOV-104A	SS/PZR RLF TK GAS SAMPLING CONTINT ISOL PILOT	11715-FM-08901/16/CS	253'	R I	VENT	VENT	NO	11715-SS-009/5	N/A	
7199	2	07	1-SS-TV-104B	SS/PZR RLF TK GAS SAMPLING CONTINT ISOL	11715-FM-08901/16/05	244'	-- I		CLOSED	NO	11715-SS-010/4	1-SS-SOV-104B	
7200	2	08B	1-SS-SOV-104B	SS/PZR RLF TK GAS SAMPLING CONTINT ISOL PILOT	11715-FM-08901/16/CS	244'	R I	VENT	VENT	NO	11715-SS-010/4	N/A	
7200A	1	07	1-SS-TV-101A	SS/PRESSURIZER VAPOR SAMPLE CONTINT ISOL	11715-FM-08901/16/76	253'	-- I		CLOSED	NO	N/A	N/A	
7200B	1	08B	1-SS-SOV-101A	SS/PRESSURIZER VAPOR SAMPLE CONTINT ISOL PILOT	11715-FM-08901/16/CS	253'	R I	VENT	VENT	NO	N/A	N/A	
7200C	2	07	1-SS-TV-101B	SS/PRESSURIZER VAPOR SAMPLE CONTINT ISOL	11715-FM-08901/16/75	244'	-- I		CLOSED	NO	N/A	N/A	
7200D	2	08B	1-SS-SOV-101B	SS/PRESSURIZER VAPOR SAMPLE CONTINT ISOL PILOT	11715-FM-08901/16/CS	244'	R I	VENT	VENT	NO	N/A	N/A	
7201	1	07	1-SS-TV-112A	SS/SG SURFACE SAMPLE CONTINT ISOL	11715-FM-08983/16/03	253'	-- I		CLOSED	NO	11715-SS-028/7	1-SS-SOV-112A	

CERTIFICATION:  
 The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAWN M. JACOBS / ENGINEER  
  
 MARCH 11, 1993

DAVID J. WERDER / ENGINEER  
  
 MARCH 11, 1993

NORTH ANHA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
SMALL BREAK LOCA AND CONTAINMENT SYSTEMS  
(Sorted by Line Number)

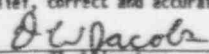
Data Base File Name/Date/Time: NA1\_SSEL.DBF / 03/11/93 / 09:33:18  
Sort Criteria: Line Number  
Filter Criteria: (Line Number >= '7000')  
Program File Name & Version: SSEL v0.0

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr./Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D	SUPPORTING SYS. Dwg. No./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
7202	1	088	1-SS-SOV-112A	SS/SG SURFACE SAMPLE CONTMT ISOL	11715-SS-028/7	CONTMT	253'	8.5	R	I	VENT	VENT	NO	11715-SS-028/7	N/A
7203	2	07	1-SS-TV-112B	SS/SG SURFACE SAMPLE CONTMT ISOL	11715-FM-089B3/16/C3	AUX	248'	6/JK	--	I	CLOSED	CLOSED	NO	11715-SS-029/4	1-SS-SOV-112B
7204	2	088	1-SS-SOV-112B	SS/SG SURFACE SAMPLE CONTMT ISOL PILOT	11715-FM-089B3/16/C3	AUX	248'	6/JK	R	I	VENT	VENT	NO	11715-SS-029/4	N/A
7205	1	07	1-SV-TV-102-1	SV/AIR EJECTOR DISCH CONTMT ISOL	11715-FM-072A2/20/C3	MSVH	272'	4.8/HA	--	I	CLOSED	CLOSED	NO	11715-SV-010	1-SV-SOV-102-1A
7206	1	088	1-SV-SOV-102-1	SV/AIR EJECTOR DISCH CONTMT ISOL PILOT	11715-FM-072A2/20/C3	MSVH	272'	4.9/HA	R	I,34	VENT	VENT	NO	11715-SV-010	N/A
7207	1	07	1-SV-TV-102-2	SV/AIR EJECTOR DISCH CONTMT ISOL	11715-FM-072A2/20/B3	TB	307'	7/C	--	I	CLOSED	CLOSED	NO	11715-SV-009	1-SV-SOV-102-2
7208	1	088	1-SV-SOV-102-2	SV/AIR EJECTOR DISCH CONTMT ISOL PILOT	11715-FM-072A2/20/B3	TB	307'	7/C	R	I,31	VENT	VENT	NO	11715-SV-009	N/A
7209	2	07	1-SV-TV-103	SV/RADIATION MONITORING RETURN CONTMT ISOL	11715-FM-072A2/20/D3	MSVH	272'	4.8/HA	--	I	CLOSED	CLOSED	NO	11715-SV-011/6	1-SV-SOV-103
7210	2	088	1-SV-SOV-103	SV/RADIATION MONITORING RETURN CONTMT ISOL PILOT	11715-FM-072A2/20/D3	MSVH	272'	4.9/HA	R	I	VENT	VENT	NO	11715-SV-011/6	N/A
7211	2	07	1-CC-TV-100A	CC/CC RETURN FROM COOLING COIL CONTMT ISOL	11715-FM-079D4/22/E4	AUX	241'	6/K	S	I	OPEN	CLOSED	NO	11715-CC-071/4	1-CC-SOV-100A
7212	2	088	1-CC-SOV-100A	CC/CC RETURN FROM COOLING CONTMT ISOL PILOT	11715-FM-079D4/22/E4	AUX	244'	7/K	S	R	AIR	VENT	NO	11715-CC-071/4	N/A
7213	2	07	1-CC-TV-100B	CC/CC RETURN FROM COOLING COIL CONTMT ISOL	11715-FM-079D4/22/D4	AUX	244'	6/J	S	I	OPEN	CLOSED	NO	11715-CC-072/4	1-CC-SOV-100B
7214	2	088	1-CC-SOV-100B	CC/CC RETURN FROM COOLING COIL CONTMT ISOL PILOT	11715-FM-079D4/22/D4	AUX	244'	6/J	S	R	AIR	VENT	NO	11715-CC-072/4	N/A
7215	2	07	1-CC-TV-100C	CC/CC RETURN FROM COOLING COIL CONTMT ISOL	11715-FM-079D4/22/C4	AUX	244'	6/K	S	I	OPEN	CLOSED	NO	11715-CC-073/4	1-CC-SOV-100C
7216	2	088	1-CC-SOV-100C	CC/CC RETURN FROM COOLING COIL CONTMT ISOL PILOT	11715-FM-079D4/22/C4	AUX	244'	7/K	S	R	AIR	VENT	NO	11715-CC-073/4	N/A
7217	1	07	1-CC-TV-101A	CC/THERMAL BARRIER DISCH CONTMT ISOL	11715-FM-079B1/21/D7	AUX	244'	7/K	S	I	OPEN	CLOSED	NO	11715-CC-067/5	1-CC-SOV-101A

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAWN W. JACOBS / ENGINEER

  
Signature

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

  
Signature

MARCH 11, 1993

NORTH ANNA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
SMALL BREAK LOCA AND CONTAINMENT SYSTEMS  
(Sorted by Line Number)

Data Base File Name/Date/Time: NAI\_SSEL.DBF / 03/11/93 / 09:33:18  
Sort Criteria: Line Number  
Filter Criteria: (Line Number >= 7000)  
Program File Name & Version: SSEM v0.0

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DNG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
7218	1	08B	1-CC-SOV-101A	CC/THERMAL BARRIER DISCH CONTMT ISOL PILOT	11715-FM-07981/21/D7	AUX	244'	7/K	S R I	AIR	VENT	NO	11715-CC-067/5	N/A	
7219	2	07	1-CC-TV-101B	CC/THERMAL BARRIER DISCH CONTMT ISOL	11715-FM-07981/21/D6	CONTMT	241'	8	S I	OPEN	CLOSED	NO	11715-CC-074/5	1-CC-SOV-101B	
7220	2	08B	1-CC-SOV-101B	CC/THERMAL BARRIER DISCH CONTMT ISOL PILOT	11715-FM-07981/21/D6	CONTMT	241'	8	S R I	AIR	VENT	NO	11715-CC-074/5	N/A	
7221	1	07	1-CC-TV-102A	CC/RCP CC RETURN CONTMT ISOL	11715-FM-07984/20/A5	AUX	244'	6.5/J	S I	OPEN	CLOSED	NO	11715-CC-078/4	1-CC-SOV-102A	
7222	1	08B	1-CC-SOV-102A	CC/RCP CC RETURN CONTMT ISOL PILOT	11715-FM-07984/20/B6	AUX	244'	7/J	S R I	AIR	VENT	NO	11715-CC-078/4	N/A	
7223	2	07	1-CC-TV-102B	CC/RCP CC RETURN CONTMT ISOL	11715-FM-07984/20/A3	CONTMT	241'	8	S I	OPEN	CLOSED	NO	11715-CC-075/8	1-CC-SOV-102B	
7224	2	08B	1-CC-SOV-102B	CC/RCP CC RETURN CONTMT ISOL PILOT	11715-FM-07984/20/A3	CONTMT	241'	8	S R I	AIR	VENT	NO	11715-CC-075/8	N/A	
7225	1	07	1-CC-TV-102C	CC/RCP CC RETURN CONTMT ISOL	11715-FM-07983/20/A5	AUX	244'	6.5/J	S I	OPEN	CLOSED	NO	11715-CC-079/5	1-CC-SOV-102C	
7226	1	08B	1-CC-SOV-102C	CC/RCP CC RETURN CONTMT ISOL PILOT	11715-FM-07983/20/B6	AUX	244'	6.5/J	S R I	AIR	VENT	NO	11715-CC-079/5	N/A	
7227	2	07	1-CC-TV-102D	CC/RCP CC RETURN CONTMT ISOL	11715-FM-07983/20/A3	CONTMT	241'	8	S I	OPEN	CLOSED	NO	11715-CC-076/6	1-CC-SOV-102D	
7228	2	08B	1-CC-SOV-102D	CC/RCP CC RETURN CONTMT ISOL PILOT	11715-FM-07983/20/A3	CONTMT	241'	8	S R I	AIR	VENT	NO	11715-CC-076/6	N/A	
7229	1	07	1-CC-TV-102E	CC/RCP CC RETURN CONTMT ISOL	11715-FM-07982/21/A5	AUX	244'	6.5/J	S I	OPEN	CLOSED	NO	11715-CC-080/4	1-CC-SOV-102E	
7230	1	08B	1-CC-SOV-102E	CC/RCP CC RETURN CONTMT ISOL PILOT	11715-FM-07982/21/B6	AUX	244'	6.5/J	S R I	AIR	VENT	NO	11715-CC-080/4	N/A	
7231	2	07	1-CC-TV-102F	CC/RCP CC RETURN CONTMT ISOL	11715-FM-07982/21/A3	CONTMT	241'	8	S I	OPEN	CLOSED	NO	11715-CC-077/6	1-CC-SOV-102F	
7232	2	08B	1-CC-SOV-102F	CC/RCP CC RETURN CONTMT ISOL PILOT	11715-FM-07982/21/A4	CONTMT	241'	8	S R I	AIR	VENT	NO	11715-CC-077/6	N/A	
7237	1, 2	07	1-CC-TV-104A	CC/RCP CC CONTMT ISOL	11715-FM-07982/21/EB	AUX	244'	6.5/J	S I	OPEN	CLOSED	NO	11715-CC-083/4	1-CC-SOV-104A1 1-CC-SOV-104A2	
7238	1	08B	1-CC-SOV-104A1	CC/RCP CC CONTMT ISOL PILOT	11715-FM-07982/21/EB	AUX	244'	6.2/J	S R I	AIR	VENT	NO	11715-CC-083/4	N/A	
7239	2	08B	1-CC-SOV-104A2	CC/RCP CC CONTMT ISOL PILOT	11715-FM-07982/21/EB	AUX	244'	6.2/J	S R I	AIR	VENT	NO	11715-CC-083/4	N/A	
7241	1, 2	07	1-CC-TV-104B	CC/RCP CC CONTMT ISOL	11715-FM-07983/20/EB	AUX	244'	6/J	S I	OPEN	CLOSED	NO	11715-CC-084/4	1-CC-SOV-104B1 1-CC-SOV-104B2	
7242	1	08B	1-CC-SOV-104B1	CC/RCP CC CONTMT ISOL PILOT	11715-FM-07983/20/EB	AUX	244'	6/J	S R I	AIR	VENT	NO	11715-CC-084/4	N/A	

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAWN V. JACOBS / ENGINEER

*Dawn V. Jacobs*  
Signature

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

*David J. Werder*  
Signature

MARCH 11, 1993

NORTH AREA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
SMALL BREAK LOCA AND CONTAINMENT SYSTEMS  
(Sorted by Line Number)

Data Base File Name/Date/Time: NAI\_SSEL.DBF / 03/11/93 / 09:33:18  
Sort Criteria: Line Number  
Filter Criteria: (Line Number >= '7000')  
Program File Name & Version: SSEL v0.0

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT NOTES	OP. ST. Normal	ST. Desired	POWER REQ'D	SUPPORTING SYS. ENG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
7243	2	08B	1-CC-SOV-104B2	CC/RCP CC CONTHT ISOL PILOT	11715-FM-079B3/20/EB AUX	244'	6/J	S R I	AIR	VENT	NO	11715-CC-084/4	N/A		
7245	1, 2	07	1-CC-TV-104C	CC/RCP CC CONTHT ISOL	11715-FM-079B4/20/EB AUX	244'	6.5/J	S I	OPEN	CLOSED	NO	11715-CC-085/4	1-CC-SOV-104C1 1-CC-SOV-104C2		
7246	1	08B	1-CC-SOV-104C1	CC/RCP CC CONTHT ISOL PILOT	11715-FM-079B4/20/EB AUX	244'	6.5/J	S R I	AIR	VENT	NO	11715-CC-085/4	N/A		
7247	2	08B	1-CC-SOV-104C2	CC/RCP CC CONTHT ISOL PILOT	11715-FM-079B4/20/EB AUX	244'	6.5/J	S R I	AIR	VENT	NO	11715-CC-085/4	N/A		
7249	1	07	1-CC-TV-105A	CC/CC RETURN FROM COOLING COIL CONTHT ISOL	11715-FM-079D4/22/E4 CONTHT	241'	8	S I	OPEN	CLOSED	NO	11715-CC-086/7	1-CC-SOV-105A		
7250	1	08B	1-CC-SOV-105A	CC/CC RETURN FROM COOLING COIL CONTHT ISOL PILOT	11715-FM-079D4/22/E4 CONTHT	241'	8	S R I	AIR	VENT	NO	11715-CC-086/7	N/A		
7251	1	07	1-CC-TV-105B	CC/CC RETURN FROM COOLING COIL CONTHT ISOL	11715-FM-079D4/22/D4 CONTHT	241'	8	S I	OPEN	CLOSED	NO	11715-CC-087/8	1-CC-SOV-105B		
7252	1	08B	1-CC-SOV-105B	CC/CC RETURN FROM COOLING COIL CONTHT ISOL PILOT	11715-FM-079D4/22/D4 CONTHT	241'	8	S R I	AIR	VENT	NO	11715-CC-087/8	N/A		
7253	1	07	1-CC-TV-105C	CC/CC RETURN FROM COOLING COIL CONTHT ISOL	11715-FM-079D4/22/C4 CONTHT	241'	8	S I	OPEN	CLOSED	NO	11715-CC-088/8	1-CC-SOV-105C		
7254	1	08B	1-CC-SOV-105C	CC/CC RETURN FROM COOLING COIL CONTHT ISOL PILOT	11715-FM-079D4/22/C4 CONTHT	241'	8	S R I	AIR	VENT	NO	11715-CC-088/8	N/A		
7255	1	07	1-1A-TV-102A	1A/INSTR AIR HEADER CONTHT ISOL	11715-FM-082N1/8/D3 AUX	244'	6/J	-- I	CLOSED	CLOSED	NO	11715-1A-015/3	1-1A-SOV-102A		
7256	1	08B	1-1A-SOV-102A	1A/INSTR AIR HEADER CONTHT ISOL PILOT	11715-FM-082N1/8/D3 AUX	244'	6/J	R I	VENT	VENT	NO	11715-1A-015/3	N/A		
7257	2	07	1-1A-TV-102B	1A/INSTR AIR HEADER CONTHT ISOL	11715-FM-082N1/8/D3 AUX	244'	6/J	-- I	CLOSED	CLOSED	NO	11715-1A-016/3	1-1A-SOV-102B		
7258	2	08B	1-1A-SOV-102B	1A/INSTR AIR HDR CONTHT ISOL PILOT	11715-FM-082N1/8/D3 AUX	244'	6/J	R I	VENT	VENT	NO	11715-1A-016/3	N/A		

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAWN W. JACOBS / ENGINEER

*D. W. Jacobs*  
Signature

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

*D. J. Werder*  
Signature

MARCH 11, 1993

NORTH ANNA UNIT 2  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
SMALL BEAR LOCAL AND CONTAINER SYSTEMS  
(Sorted by Line Number)

Data Base File Name/Date/Time: MA2\_SSEL.DBF / 03/11/93 / 09:30:30  
Sort Criteria: Line Number  
Filter Criteria: (Line Number >= 7000)  
Program File Name & Version: SSEN v0.0

LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	Fir./Elev.	Equipment Location	Ra. or Row/Col.	Sort Notes	Normal	Desired	REQ'D INTERCONNECTIONS				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	
7001	1	2	2-85-TK-2	QS/REFUELING WATER CHEM ADD TANK	12050-FH-091A1/20/D6	YARD/TUM	272'	N OF AFPH	S	I	N/A	N/A	N/A	N/A	N/A	
7002	1	08A	2-85-HOV-200A	QS/QS PUMP INLET ISOL	12050-FH-091A2/19/A3	QSPH	271'	--	S	R	I	CLOSED	OPEN	YES	12050-FE-101/21 2-EP-AC-20	
7003	1	05	2-85-P-1A	QS/QS PUMP A	12050-FH-091A2/19/B5	QSPH	274'	--	S	R	I	OFF	ON	YES	N/A	2-EE-SS-03
7005	2	08A	2-85-HOV-200B	QS/QS PUMP B INLET ISOL	92050-FH-091A2/19/A3	QSPH	271'	--	R	I	OPEN	OPEN	NO	N/A	2-EP-AC-21	
7006	2	05	2-85-P-1B	QS/QS PUMP B	12050-FH-091A2/19/B4	QSPH	274'	--	S	R	I	OFF	ON	YES	N/A	2-EE-SS-04
7007	1	2	2-85-LT-201	QS/CHEMICAL ADD TANK LEVEL INTR	12050-FH-091A1/20/E6	YARD/TUM	280'	15/V	S	R	I	ON	ON	YES	12050-Q5-006/3	2-EI-CB-230
7008	1	2	2-85-LI-201	QS/CHEMICAL ADD TANK LEVEL INDICATOR	12050-FH-091A1/20/D6	SB	277'	CR	S	R	I	ON	ON	YES	12050-Q5-006/3	2-EI-CB-05
7009	1	06	2-51-P-1A	SI/LIQUID PUMP A	12050-FH-096A1/20/C6	SFGD	255'	--	S	R	I	OFF	ON	YES	N/A	2-EE-SH-01
7009A	1	08A	2-51-HOV-2860A	SI/LIQUID PUMP A SHIP ISOL	12050-FH-096A1/20/B7	QSPH	267'	3/K	S	R	I	CLOSED	OPEN	YES	N/A	2-EP-AC-19
7010	1	08A	2-CH-HOV-2267B	CR/LIQUID TO CHARGING PUMP SUCTION	12050-FH-095B2/25/C3	AUX ROOM	244'	10/J	R	I	OPEN	OPEN	NO	N/A	2-EP-AC-22	
7011	2	06	2-51-P-1B	SI/LIQUID PUMP B	12050-FH-096A1/20/C4	SFGD	255'	--	S	R	I	OFF	ON	YES	N/A	2-EE-SH-02
7011A	2	08A	2-51-HOV-2860B	SI/LIQUID PUMP B SHIP ISOL	12050-FH-096A1/20/B5	QSPH	244'	--	S	R	I	CLOSED	OPEN	YES	N/A	2-EP-AC-21
7012	1	06	2-85-P-1A	RS/INSIDE RECIRC SPRAY PUMP A	12050-FH-091A3/17/B7	CORINT	217'	5	S	R	I	OFF	ON	YES	N/A	2-EE-SS-03
7014	1	08A	2-SM-HOV-200A	SM/RECIRC SPRAY COOLER A DISCH ISOL	11715-FH-078B1/20/C4	QSPH	265'	--	S	R	I	CLOSED	OPEN	YES	N/A	2-EP-AC-19
7017	1	06	2-85-P-1B	RS/INSIDE RECIRC SPRAY PUMP B	12050-FH-091A3/17/B4	CORINT	217'	4	S	R	I	OFF	ON	YES	N/A	2-EE-SS-04
7019	1	08A	2-SM-HOV-200B	SM/RECIRC SPRAY COOLER B DISCH ISOL	11715-FH-078B1/20/C5	QSPH	265'	--	S	R	I	CLOSED	OPEN	YES	N/A	2-EP-AC-21
7022	2	08A	2-85-HOV-255A	RS/OUTSIDE RECIRC SPRAY PUMP A INLET ISOL	12050-FH-091A4/18/B6	SFGD	267'	VALVE PIT	R	I	OPEN	OPEN	NO	N/A	2-EP-AC-19	
7023	2	06	2-85-P-2A	RS/OUTSIDE RECIRC SPRAY PUMP A	12050-FH-091A4/18/B4	SFGD	267'	PUMP CURBICLE	S	R	I	OFF	ON	YES	N/A	2-EE-SS-01
7024	2	08A	2-85-HOV-256A	RS/OUTSIDE RECIRC SPRAY PUMP A DISCH ISOL	12050-FH-091A4/18/D5	SFGD	256'	--	R	I	OPEN	OPEN	NO	N/A	2-EP-AC-19	

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAVID W. JACOBS / ENGINEER

*David W. Jacobs*  
Signature  
MARCH 11, 1993

DAVID J. BERDER / ENGINEER

*David J. Berder*  
Signature  
MARCH 11, 1993

NORTH ANNA UNIT 2  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
SMALL BREAK LOCA AND CONTAINMENT SYSTEMS  
(Sorted by Line Number)

Data Base File Name/Date/Time: NA2\_SSEL.DBF / 03/11/93 / 09:30:38  
Sort Criteria: Line Number  
Filter Criteria: (Line Number >= 7000)  
Program File Name & Version: SSEL v0.0

LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	Eq. or Row/Col.	LOCATION	OP. ST.	Normal	Desired	REC'D INTERCONNECTIONS				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
7026	2	08A	2-SW-MOV-204D	SW/RECIRC SPRAY COOLER D DISCH ISOL	11715-FH-07081/20/C3 QSPH	265'	--	5	R	I	CLOSED	OPEN	YES	N/A	2-EP-MC-19
7027	2	08A	2-RS-MOV-255B	RS/OUTSIDE RECIRC SPRAY PUMP B IMLET ISOL	12050-FH-09104/18/A6 SFGD	267'	VALVE PIT	R	I	OPEN	OPEN	NO	NO	N/A	2-EP-MC-21
7028	2	06	2-RS-P-7B	RS/OUTSIDE RECIRC SPRAY PUMP D	12050-FH-07104/18/B3 SFGD	267'	PUMP CURBICLE	S	R	I	OFF	ON	YES	N/A	2-EE-SS-02
7029	2	08B	2-RS-MOV-256B	RS/OUTSIDE RECIRC SPRAY PUMP B DISCH ISOL	12050-FH-09104/18/D5 SFGD	256'	--	R	I	OPEN	OPEN	NO	N/A	N/A	2-EP-MC-21
7031	2	08A	2-SW-MOV-204C	SW/RECIRC SPRAY COOLER C DISCH ISOL	11715-FH-07081/20/C6 QSPH	265'	--	5	R	I	CLOSED	OPEN	YES	N/A	2-EP-MC-21
7032	2	21	2-RS-TK-1A*	RS/OUTSIDE RECIRC SPRAY PUMP A SEAL TANK	12050-FH-09104/18/C4 SFGD	267'	PUMP CURBICLE	S	I	N/A	N/A	NO	N/A	N/A	N/A
7033	2	21	2-RS-TK-1B*	RS/OUTSIDE RECIRC SPRAY PUMP B SEAL TANK	12050-FH-09104/18/C3 SFGD	267'	--	S	I	N/A	N/A	NO	N/A	N/A	N/A
7034	2	21	2-RS-E-2A*	RS/OUTSIDE RECIRC SPRAY PUMP A SEAL BX	12050-FH-09104/18/C4 SFGD	267'	3.2/A/H	S	I	N/A	N/A	NO	N/A	N/A	N/A
7035	2	21	2-RS-E-2B*	RS/OUTSIDE RECIRC SPRAY PUMP B SEAL BX	12050-FH-09104/18/C3 SFGD	267'	3.5/B/K	S	I	N/A	N/A	NO	N/A	N/A	N/A
7035E	1	05	2-SW-P-5	SW/RADIATION MONITORING PUMP	11715-FH-07083/21/C8 QSPH	265'	--	S	I	OFF	OFF	NO	N/A	N/A	N/A
7035F	1	05	2-SW-P-6	SW/RADIATION MONITORING PUMP	11715-FH-07083/21/C6 QSPH	265'	--	S	I	OFF	OFF	NO	N/A	N/A	N/A
7035G	2	05	2-SW-P-7	SW/RADIATION MONITORING PUMP	11715-FH-07083/21/C5 QSPH	265'	--	S	I	OFF	OFF	NO	N/A	N/A	N/A
7035H	2	05	2-SW-P-8	SW/RADIATION MONITORING PUMP	11715-FH-07083/21/C4 QSPH	265'	--	S	I	OFF	OFF	NO	N/A	N/A	N/A
7036	2	21	2-RS-TK-1	RS/CASING COOLING TANK	12050-FH-09101/10/C4 YARD/TURB	270'	S OF AFPH	S	I	N/A	N/A	NO	N/A	N/A	N/A
7036A	2	18	2-RS-LI-203A	RS/CASING COOLING TANK LEVEL INDICATOR	12050-FH-09101/10/NO CSCPH	270'	--	S	R	I	N/A	N/A	YES	12050-RS-029/7	2-EP-CB-04B
7036B	2	18	2-RS-LI-203A	RS/CASING COOLING TANK LEVEL INDICATOR	12050-FH-09101/10/30 SB	277'	R/C	S	R	I	N/A	N/A	YES	12050-RS-029/7	2-RS-LI-203A
7036D	2	18	2-RS-LS-203A	RS/CASING COOLING TANK LEVEL SWITCH	12050-FH-09101/10/30 SB	252'	11/D	S	R	I	N/A	N/A	NO	12050-RS-029/7	N/A
7036E	2	18	2-RS-LI-203B	RS/CASING COOLING TANK LEVEL SWITCH	12050-FH-09101/10/AC CSCPH	270'	--	S	R	I	N/A	N/A	YES	12050-RS-030/6	2-EP-CB-04D

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAWN M. JACOBS / ENGINEER

*D. Jacobs*  
Signature

MARCH 11, 1993

DAVID J. WEIDER / ENGINEER

*D. Weider*  
Signature

MARCH 11, 1993

NORTH ANNA UNIT 2  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
SMALL BREAK LOCA AND CONTAINMENT SYSTEMS  
(Sorted by Line Number)

Data Base File Name/Date/Time: NA2\_SSEL.DBF / 03/11/93 / 09:30:38  
Sort Criteria: Line Number  
Filter Criteria: (Line Number > 7000)  
Program File Name & Version: SSEL v0.0

LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	Room/Coil	EQUIPMENT LOCATION	OP. ST.	Normal	Desired	REQ'D INTERCONNECTIONS						
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)		
7036F	2	1B	2-RS-LI-203B	RS/CASING COOLING TANK LEVEL INDICATOR	12050-FH-091B1/10/3C	5B	8/C	5	R	I	N/A	N/A	YES	12050-RS-030/6	2-RS-LI-203B		
7036G	2	1B	2-RS-LI-203B	RS/CASING COOLING TANK LEVEL SWITCH	12050-FH-091B1/10/3C	5B	11/D	5	R	I	N/A	N/A	NO	12050-RS-030/6	N/A		
7037	2	05	2-RS-P-3A	RS/CASING COOLING PUMP A	12050-FH-091B1/10/87	CSCPH	271	5	R	I	OFF	ON	YES	N/A	2-EP-AC-20		
7038	2	08A	2-RS-MOV-201A	RS/CASING COOLING PUMP A DISCH ISOL	12050-FH-091B1/10/E7	SFGD	256	R	I	OPEN	OPEN	NO	N/A	N/A	2-EP-AC-20		
7039	2	08A	2-RS-MOV-200A	RS/CASING COOLING PUMP A DISCH ISOL	12050-FH-091B1/10/E7	SFGD	256	5	R	I	CLOSED	OPEN	YES	N/A	2-EP-AC-20		
7040	2	05	2-RS-P-3B	RS/CASING COOLING PUMP B	12050-FH-091B1/10/86	CSCPH	271	5	R	I	OFF	ON	YES	N/A	2-EP-AC-22		
7041	2	08A	2-RS-MOV-201B	RS/CASING COOLING PUMP B DISCH ISOL	12050-FH-091B1/10/F7	SFGD	256	R	I	OPEN	OPEN	NO	N/A	N/A	2-EP-AC-21		
7042	2	08A	2-RS-MOV-200B	RS/CASING COOLING PUMP B DISCH ISOL	12050-FH-091B1/10/F7	SFGD	256	5	R	I	CLOSED	OPEN	YES	N/A	2-EP-AC-21		
7101	1	07	2-RS-TV-209	MS/STEAM DRAIN CONTINT ISOL	12050-FH-070A3/20/D3	MSVH	273	13	G/B	5	OPEN	CLOSED	NO	12050-MS-209/6	2-MS-SOV-209A 2-MS-SOV-209B		
7102	1	06B	2-MS-SOV-209A	MS/STEAM DRAIN CONTINT ISOL PILOT	12050-FH-070A3/20/D4	MSVH	273	13	G/B	5	R	1,5,36	AIR	VENT	NO	12050-MS-209/6	N/A
7103	1	06B	2-MS-SOV-209B	MS/STEAM DRAIN CONTINT ISOL PILOT	12050-FH-070A3/20/D3	MSVH	273	13	G/B	5	R	1,5,36	AIR	VENT	NO	12050-MS-209/6	N/A
7104	1	07	2-MS-TV-210	MS/SG BLOWDOWN CONTINT ISOL	12050-FH-070B3/19/A4	MSVH	271	12	7/HA	5	OPEN	CLOSED	NO	12050-MS-210/2	2-MS-SOV-210A 2-MS-SOV-210B		
7105	1	06B	2-MS-SOV-210A	MS/SG BLOWDOWN CONTINT ISOL PILOT	12050-FH-070B3/19/A4	MSVH	271	12	8/HA	5	R	I	AIR	VENT	NO	12050-MS-210/2	N/A
7106	1	06B	2-MS-SOV-210B	MS/SG BLOWDOWN CONTINT ISOL PILOT	12050-FH-070B3/19/A4	MSVH	271	12	8/HA	5	R	I	AIR	VENT	NO	12050-MS-210/2	N/A
7107	1	07	2-BD-TV-200A	BD/SG BLOWDOWN CONTINT ISOL	12050-FH-098A2/16/C6	AUX	244	11	5/K	5	OPEN	CLOSED	NO	12050-BD-001/6	2-BD-SOV-200A		
7108	1	06B	2-BD-SOV-200A	BD/SG 1A BLOWDOWN CONTINT ISOL PILOT	12050-FH-098A2/16/D6	AUX	244	11	5/K	5	R	I	AIR	VENT	NO	12050-BD-001/6	N/A
7109	2	07	2-BD-TV-200B	BD/SG BLOWDOWN CONTINT ISOL	12050-FH-098A2/16/C5	CONTINT	241	10		5	OPEN	CLOSED	NO	12050-BD-002/6	2-BD-SOV-200B		
7110	2	06B	2-BD-SOV-200B	BD/SG BLOWDOWN CONTINT ISOL PILOT	12050-FH-098A2/16/D5	CONTINT	248	10		5	R	I	AIR	VENT	NO	12050-BD-002/6	N/A

CERTIFICATION:

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DAWN V. JACOBS / ENGINEER

*Dawn V. Jacobs*  
Signature

MARCH 11, 1993

DAVID J. WEBBER / ENGINEER

*David J. Webber*  
Signature

MARCH 11, 1993



NORTH ANNA UNIT 2  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
SHALL BREAK LOCA AND CONTAINMENT SYSTEMS  
(Sorted by Line Number)

Data Base File Name/Date/Time: NAA\_SSEL.DBF / 03/11/93 / 09:30:38  
Sort Criteria: Line Number  
Filter Criteria: (Line Number <= 7000)  
Program File Name & Version: SSEN v0.0

LINE NO.	EQUIP TRAIN CLASS	HARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr.Elv.	LOCATION Rm. or Row/Col.	OP. ST.	POWER SUPPORTING SYS.	REQ'D INTERCONNECTIONS					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
7111	1	07	2-BD-TV-200C	BD/SG BLOWDOWN CONTMT ISOL	12050-FM-098A3/18/C6	AUX	244'	12/J	S	I	OPEN	CLOSED	NO	12050-BD-003/6	2-BD-SOV-200C
7112	1	088	2-BD-SOV-200C	BD/SG 18 BLOWDOWN CONTMT ISOL PILOT	12050-FM-098A3/18/D6	AUX	244'	12/J	S	R	I	AIR	VENT	NO	12050-BD-003/6 N/A
7113	2	07	2-BD-TV-200D	BD/SG 18 BLOWDOWN CONTMT ISOL	12050-FM-098A3/18/C5	CONTMT	241'	10	S	I	OPEN	CLOSED	NO	12050-BD-004/7	2-BD-SOV-200D
7114	2	088	2-BD-SOV-200D	BD/SG 18 BLOWDOWN CONTMT ISOL PILOT	12050-FM-098A3/18/D5	CONTMT	241'	10	S	R	I	AIR	VENT	NO	12050-BD-004/7 N/A
7115	1	07	2-BD-TV-200E	BD/SG 1C BLOWDOWN CONTMT ISOL	12050-FM-098A4/18/C6	AUX	244'	12/J	S	I	OPEN	CLOSED	NO	12050-BD-005/6	2-BD-SOV-200E
7116	1	088	2-BD-SOV-200E	BD/SG 1C BLOWDOWN CONTMT ISOL PILOT	12050-FM-098A4/18/D6	AUX	244'	12/J	S	R	I	AIR	VENT	NO	12050-BD-005/6 N/A
7117	2	07	2-BD-TV-200F	BD/SG 1C BLOWDOWN CONTMT ISOL	12050-FM-098A4/18/C5	CONTMT	241'	9	S	I	OPEN	CLOSED	NO	12050-BD-006/8	2-BD-SOV-200F
7118	2	088	2-BD-SOV-200F	BD/SG 1C BLOWDOWN CONTMT ISOL PILOT	12050-FM-098A4/18/D5	CONTMT	241'	9	S	R	I	AIR	VENT	NO	12050-BD-006/8 N/A
7119	1	07	2-SI-TV-200	SI/NITROGEN HEADER CONTMT ISOL	12050-FM-096B1/17/F3	AUX	246'	11/K	S	I	OPEN	CLOSED	NO	12050-SI-034/4	2-SI-SOV-200A 2-SI-SOV-200B
7122	1	07	2-SI-TV-201	SI/WASTE GAS FILTER CONTMT ISOL	12050-FM-096B1/17/E4	AUX	244'	11/K	S	I	OPEN	CLOSED	NO	12050-SI-013/3	2-SI-SOV-201
7123A	1	088	2-SI-SOV-200A	SI/NITROGEN HEADER CONTMT ISOL PILOT	12050-SI-034/4	AUX	246'	11.5/JK	S	R	I	AIR	VENT	NO	12050-SI-034/4 N/A
7123B	1	088	2-SI-SOV-200B	SI/NITROGEN HEADER CONTMT ISOL PILOT	12050-SI-034/4	AUX	246'	11.5/JK	S	R	I	AIR	VENT	NO	12050-SI-034/4 N/A
7124	1	088	2-SI-SOV-201	SI/WASTE GAS FILTER CONTMT ISOL PILOT	12050-FM-096B1/17/E4	AUX	244'	11/K	S	R	I	AIR	VENT	NO	12050-SI-013/3 N/A
7125	1	07	2-SI-TV-2859	SI/ACCUM TEST LINE CONTMT ISOL	12050-FM-096A2/24/F7	SFGD	267'	--	--	I	CLOSED	CLOSED	NO	12050-SI-035/4	2-SI-SOV-2859
7126	1	088	2-SI-SOV-2859	SI/ACCUM TEST LINE CONTMT ISOL PILOT	12050-FM-096A2/24/F7	SFGD	267'	--	R	I	VENT	VENT	NO	12050-SI-035/4 N/A	
7127	2	07	2-SI-HCV-2936	SI/WASTE GAS FLTR RETURN CONTMT ISOL	12050-FM-096B1/17/E5	CONTMT	248'	11	--	I	CLOSED	CLOSED	NO	12050-SI-014/5	2-SI-SOV-2936
7128	2	088	2-SI-SOV-2936	SI/WASTE GAS FLTR RETURN CONTMT ISOL PILOT	12050-FM-096B1/17/E5	CONTMT	248'	11	R	I	VENT	VENT	NO	12050-SI-014/5 N/A	

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAWN W. JACOBS / ENGINEER

*D. Jacobs*  
Signature

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

*D. Werder*  
Signature

MARCH 11, 1993

LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Tag. No./Rev./Zone	Building	EQUIPMENT LOCATION	Rm. or Row/Col.	Sort Notes	Normal	Desired	REQ'D INTERCORRECTIONS				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
7129	2	07	2-SI-TV-2842	SI/ACCUM TEST LINE	CONTMNT ISOL	241'	5	---	I	CLOSED	CLOSED	NO	12050-SI-033/5	2-SI-SOW-2842	
7130	2	088	2-SI-SOW-2842	SI/ACCUM TEST LINE	CONTMNT ISOL	241'	5	R	I	VENT	VENT	NO	12050-SI-033/5	N/A	
7131	1	07	2-CH-TV-2204A	CH/LETDOWN LINE	CONTMNT ISOL	241'	9	---	I	CLOSED	CLOSED	NO	11715-CH-100/1	2-CH-SOW-2204A	
7131A	1	088	2-CH-SOW-2204A	CH/LETDOWN LINE	CONTMNT ISOL	241'	9	R	I	VENT	VENT	NO	11715-CH-100/1	N/A	
7132	2	07	2-CH-TV-2204B	CH/LETDOWN LINE	CONTMNT ISOL	245'	12/J	5	I	OPEN	CLOSED	NO	12050-CH-070/6	2-CH-SOW-2204B	
7132A	2	088	2-CH-SOW-2204B	CH/LETDOWN LINE	CONTMNT ISOL	245'	12/F	5	R	I	AIR	VENT	NO	12050-CH-070/6	N/A
7137	1	07	2-RC-TV-2519A	RC/PRT FM FILL	CONTMNT ISOL	247'	11./J	---	I	CLOSED	CLOSED	NO	12050-RC-036/6	2-RC-SOW-2519A	
7138	1	088	2-RC-SOW-2519A	RC/PRT FM FILL	CONTMNT ISOL	244'	11./J	R	I	VENT	VENT	NO	12050-RC-036/6	N/A	
7139	1	07	2-CV-TV-250A	CV/ATMDS CLEANUP	CONTMNT ISOL	244'	12/J	5	I	OPEN	CLOSED	NO	12050-CV-002/5	2-CV-SOW-250A	
7140	1	088	2-CV-SOW-250A	CV/ATMDS CLEANUP	CONTMNT ISOL	244'	12/J	5	R	I	AIR	VENT	NO	12050-CV-002/5	N/A
7141	2	07	2-CV-TV-250B	CV/ATMDS CLEANUP	CONTMNT ISOL	244'	12/J	5	I	OPEN	CLOSED	NO	12050-CV-003/6	2-CV-SOW-250B	
7142	2	088	2-CV-SOW-250B	CV/ATMDS CLEANUP	CONTMNT ISOL	244'	12/J	5	R	I	AIR	VENT	NO	12050-CV-003/6	N/A
7143	1	07	2-CV-TV-250C	CV/ATMDS CLEANUP	CONTMNT ISOL	244'	12/J	5	I	OPEN	CLOSED	NO	12050-CV-004/5	2-CV-SOW-250C	
7144	1	088	2-CV-SOW-250C	CV/ATMDS CLEANUP	CONTMNT ISOL	244'	12/J	5	R	I	AIR	VENT	NO	12050-CV-004/5	N/A
7145	2	07	2-CV-TV-250D	CV/ATMDS CLEANUP	CONTMNT ISOL	244'	12/J	5	I	OPEN	CLOSED	NO	12050-CV-005/5	2-CV-SOW-250D	
7146	2	088	2-CV-SOW-250D	CV/ATMDS CLEANUP	CONTMNT ISOL	244'	12/J	5	R	I	AIR	VENT	NO	12050-CV-005/5	N/A
7147	1	07	2-DA-TV-200A	DA/SUMP DISCH	CONTMNT ISOL	244'	12/J	---	I	CLOSED	CLOSED	NO	N/A	2-DA-SOW-200A	
7148	1	088	2-DA-SOW-200A	DA/SUMP DISCH	CONTMNT ISOL	244'	12/J	R	I	VENT	VENT	NO	12050-DA-003/7	N/A	
7149	2	07	2-DA-TV-200B	DA/SUMP DISCH	CONTMNT ISOL	253'	9	---	I	CLOSED	CLOSED	NO	12050-DA-004/6	2-DA-SOW-200B	
7150	2	088	2-DA-SOW-200B	DA/SUMP DISCH	CONTMNT ISOL	253'	9	R	I	VENT	VENT	NO	12050-DA-004/6	N/A	
7151	1	07	2-DC-TV-200A	DC/PRIMARY DRAIN XFER	CONTMNT ISOL	248'	11/K	---	I	CLOSED	CLOSED	NO	12050-DC-006/6	2-DC-SOW-200A	
7152	1	088	2-DC-SOW-200A	DC/PRIMARY DRAIN XFER	CONTMNT ISOL	248'	11/K	R	I	VENT	VENT	NO	12050-DC-006/6	N/A	

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAWN W. JACOBS / ENGINEER  
 Signature: *Dawn W. Jacobs*  
 MARCH 11, 1993

DAVID J. WENDER / ENGINEER  
 Signature: *David J. Wender*  
 MARCH 11, 1993

NORTH AREA UNIT 2  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
SMALL BREAK LOCA AND CONTAINMENT SYSTEMS  
(Sorted by Line Number)

Data Base File Name/Date/Time: M42\_SSEL.DBF / 03/11/93 / 09:30:38  
Sort Criteria: Line Number  
Filter Criteria: (Line Number >= 7000)  
Program File Name & Version: SSEL v0.0

LINE NO.	TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dist. No./Rev./Zone	Building	Flr. E.Lv.	EQUIPMENT LOCATION	OP. ST.	Normal	Desired	REPT DMC. NO./REV. & SUPPORTING COMPONENTS			
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
7153	2	07	DG/PRIMARY DRAIN AFTER CONTMNT ISOL	12050-FN-090C1/17/B7	CORINT	253'	10.5	1	---	CLOSED	NO	12050-DC-005/5	2-DG-SOV-200B	
7154	2	08B	DG/PRIMARY DRAIN AFTER CONTMNT ISOL PILOT	12050-FN-090C1/17/B7	CORINT	253'	10.5	R	I	VENT	NO	12050-DC-005/5	N/A	
7155	1	07	VG/PRIMARY VENT HOR CONTMNT ISOL	12050-FN-090C1/17/F3	AUX	244'	12/J	S	I	OPEN	NO	12050-VG-001/4	2-VG-SOV-200A	
7156	1	08B	VG/PRIMARY VENT HOR CONTMNT ISOL PILOT	12050-FN-090C1/17/F4	AUX	244'	12/J	S	R	AIR	NO	12050-VG-001/4	N/A	
7157	2	07	VG/PRIMARY VENT HOR CONTMNT ISOL	12050-FN-090C1/17/D3	CORINT	251'	10	S	I	OPEN	NO	12050-VG-002/6	2-VG-SOV-200B	
7158	2	08B	VG/PRIMARY VENT HOR CONTMNT ISOL PILOT	12050-FN-090C1/17/D4	CORINT	251'	10	S	R	AIR	NO	12050-VG-002/6	N/A	
7159	1	07	AS/AIR EJECTOR STM INLET CONTMNT ISOL	12050-FN-072A2/19/E5	TB	279'	15/Z	S	I	OPEN	NO	12050-AS-003	2-AS-SOV-200A	
7160	1	08B	AS/AIR EJECTOR STM INLET CONTMNT ISOL PILOT	12050-FN-072A2/19/E5	TB	279'	15/Z	S	R	AIR	NO	12050-AS-003	N/A	
7161	1	07	AS/AIR EJECTOR STM INLET CONTMNT ISOL	12050-FN-072A2/19/E5	TB	279'	16/C	S	I	OPEN	NO	12050-AS-004	2-AS-SOV-200B	
7162	1	08B	AS/AIR EJECTOR STM INLET CONTMNT ISOL PILOT	12050-FN-072A2/19/E5	TB	279'	16/C	S	R	AIR	NO	12050-AS-004	N/A	
7163	1	07	LN/LEAKAGE MONITORING CONTMNT ISOL	12050-FN-092A1/15/E7	AUX	259'	11.5/J	S	I	OPEN	NO	12050-LN-001/6	2-LN-SOV-200A	
7164	1	08B	LN/LEAKAGE MONITORING CONTMNT ISOL PILOT	12050-FN-092A1/15/F7	AUX	259'	11.5/J	S	R	AIR	NO	12050-LN-001/6	N/A	
7165	2	07	LN/LEAKAGE MONITORING CONTMNT ISOL	12050-FN-092A1/15/E6	AUX	259'	11.5/J	S	I	OPEN	NO	12050-LN-002/6	2-LN-SOV-200B	
7166	2	08B	LN/LEAKAGE MONITORING CONTMNT ISOL PILOT	12050-FN-092A1/15/F6	AUX	259'	11.5/J	S	R	AIR	NO	12050-LN-002/6	N/A	
7167	1	07	LN/LEAKAGE MONITORING CONTMNT ISOL	12050-FN-092A1/15/E6	AUX	259'	12/JK	S	I	OPEN	NO	12050-LN-003/6	2-LN-SOV-200C	
7168	1	08B	LN/LEAKAGE MONITORING CONTMNT ISOL PILOT	12050-FN-092A1/15/F6	AUX	259'	12/JK	S	R	AIR	NO	12050-LN-003/6	N/A	
7169	2	07	LN/LEAKAGE MONITORING CONTMNT ISOL	12050-FN-092A1/15/E5	AUX	259'	11.5/K	S	I	OPEN	NO	12050-LN-004/6	2-LN-SOV-200D	

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAWN W. JACOBS / ENGINEER

*Dawn W. Jacobs*  
Signature

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

*David J. Werder*  
Signature

MARCH 11, 1993

NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 SMALL BREAK LOCA AND CONTAINMENT SYSTEMS  
 (Sorted by Line Number)

Data Base File Name/Date/Time: NA2\_SSEL.DBF / 03/11/93 / 09:30:38  
 Sort Criteria: Line Number  
 Filter Criteria: (Line Number <= '7000')  
 Program File Name & Version: SSEN v0.0

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Fir. Elev.	LOCATION Ra. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
7170	2	088	2-LM-SOV-200D	LM/LEAKAGE MONITORING CONTHT ISOL PILOT	12050-FM-092A1/15/F5	AUX	259'	11.5/K	S R I	AIR	VENT	NO	12050-LM-004/6	N/A
7171	1	07	2-LM-TV-200E	LM/LEAKAGE MONITORING CONTHT ISOL	12050-FM-092A1/15/F6	AUX	259'	11.5/J	S I	OPEN	CLOSED	NO	12050-LM-005/6	2-LM-SOV-200E
7172	1	088	2-LM-SOV-200E	LM/LEAKAGE MONITORING CONTHT ISOL PILOT	12050-FM-092A1/15/F6	AUX	259'	11.5/J	S R I	AIR	VENT	NO	12050-LM-005/6	N/A
7173	2	07	2-LM-TV-200F	LM/LEAKAGE MONITORING CONTHT ISOL	12050-FM-092A1/15/F5	AUX	259'	11.5/J	S I	OPEN	CLOSED	NO	12050-LM-006/6	2-LM-SOV-200F
7174	2	088	2-LM-SOV-200F	LM/LEAKAGE MONITORING CONTHT ISOL PILOT	12050-FM-092A1/15/F5	AUX	259'	11.5/J	S R I	AIR	VENT	NO	12050-LM-006/6	N/A
7175	1	07	2-LM-TV-200G	LM/LEAKAGE MONITORING CONTHT ISOL	12050-FM-092A1/15/E7	AUX	259'	12/J	S I	OPEN	CLOSED	NO	12050-LM-007/6	2-LM-SOV-200G
7176	1	088	2-LM-SOV-200G	LM/LEAKAGE MONITORING CONTHT ISOL PILOT	12050-FM-092A1/15/F6	AUX	259'	12/J	S R I	AIR	VENT	NO	12050-LM-007/6	N/A
7177	2	07	2-LM-TV-200H	LM/LEAKAGE MONITORING CONTHT ISOL	12050-FM-092A1/15/E6	AUX	259'	12/J	S I	OPEN	CLOSED	NO	12050-LM-008/6	2-LM-SOV-200H
7178	2	088	2-LM-SOV-200H	LM/LEAKAGE MONITORING CONTHT ISOL PILOT	12050-FM-092A1/15/F6	AUX	259'	12/J	S R I	AIR	VENT	NO	12050-LM-008/6	N/A
7179	1	07	2-LM-TV-201A	LM/PRESS SENSOR CONTHT ISOL	12050-FM-092A1/15/D5	AUX	244'	11/J	S I	OPEN	CLOSED	NO	12050-LM-017/7	2-LM-SOV-201A
7180	1	088	2-LM-SOV-201A	LM/PRESS SENSOR CONTHT ISOL PILOT	12050-FM-092A1/15/D5	AUX	244'	11/J	S R I	AIR	VENT	NO	12050-LM-017/7	N/A
7181	2	07	2-LM-TV-201B	LM/PRESS SENSOR CONTHT ISOL	12050-FM-092A1/15/D5	AUX	246'	11/J	S I	OPEN	CLOSED	NO	12050-LM-018/7	2-LM-SOV-201B
7182	2	088	2-LM-SOV-201B	LM/PRESS SENSOR CONTHT ISOL PILOT	12050-FM-092A1/15/D5	AUX	246'	11/J	S R I	AIR	VENT	NO	12050-LM-018/7	N/A
7183	1	07	2-LM-TV-201C	LM/PRESS SENSOR CONTHT ISOL	12050-FM-092A1/15/D5	AUX	244'	11/J	S I	OPEN	CLOSED	NO	12050-LM-017/7	2-LM-SOV-201C
7184	1	088	2-LM-SOV-201C	LM/PRESS SENSOR CONTHT ISOL PILOT	12050-FM-092A1/15/D5	AUX	244'	11/J	S R I	AIR	VENT	NO	12050-LM-017/7	N/A
7185	2	07	2-LM-TV-201D	LM/PRESS SENSOR CONTHT ISOL	12050-FM-092A1/15/D4	AUX	246'	11/J	S I	OPEN	CLOSED	NO	12050-LM-018/7	2-LM-SOV-201D
7186	2	088	2-LM-SOV-201D	LM/PRESS SENSOR CONTHT ISOL PILOT	12050-FM-092A1/15/D5	AUX	246'	11/J	S R I	AIR	VENT	NO	12050-LM-018/7	N/A
7187	1	07	2-RM-TV-200A	RM/RADIATION MONITORING RETURN CONTHT ISOL	12050-FM-082B2/09/C7	AUX	244'	11.5/JK	S I	OPEN	CLOSED	NO	12050-RM-018/5	2-RM-SOV-200A
7188	1	088	2-RM-SOV-200A	RM/RADIATION MONITORING RETURN CONTHT ISOL PILOT	12050-FM-082B2/09/C7	AUX	245'	11.5/JK	S R I	AIR	VENT	NO	12050-RM-018/5	N/A

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAWN W. JACOBS / ENGINEER

*Dawn W. Jacobs*  
 Signature

MARCH 11, 1993

DAVID J. WERDF / ENGINEER

*David J. Werdf*  
 Signature

MARCH 11, 1993

NORTH AVAL UNIT 2  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
SMALL BREAK LOCA AND CONTAINMENT SYSTEMS  
(Sorted by Line Number)

Data Base File Name/Date/Time: M2\_SSEL.DBF / 03/11/93 / 09:30:38  
Sort Criteria: Line Number  
Filter Criteria: (Line Number >= '7000')  
Program File Name & Version: SSEL v0.0

LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Div. No./Rev./Zone	Building	Fir. Eiv.	Rm. or Row/Col.	EQUIPMENT LOCATION	HEIGHT	STATUS	OP. ST.	Normal	Desired	REDO? DNG. NO./REV.	SUPPORTING COMPONENTS
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
7189	1	07	2-RH-TV-2008	RN/RADIATION MONITORING CONTINT ISOL	12050-FH-08282/09/07	AUX	244'	12/J	5	I	OPEN	CLOSED	NO	12050-RH-019/5	2-RH-SOV-2008
7190	1	088	2-RH-SOV-2008	RN/RADIATION MONITORING CONTINT ISOL PILOT	12050-FH-08282/09/07	AUX	244'	12/J	S	R	AIR	VENT	NO	12050-RH-019/5	N/A
7191	2	07	2-RH-TV-200C	RN/RADIATION MONITORING CONTINT ISOL	12050-FH-08282/09/08	CONTINT	259'	6	5	I	OPEN	CLOSED	NO	12050-RH-020/6	2-RH-SOV-200C
7191A	2	088	2-RH-SOV-200C	RN/RADIATION MONITORING CONTINT ISOL PILOT	12050-FH-08282/09/08	CONTINT	259'	6	S	R	AIR	VENT	NO	12050-RH-020/6	N/A
7192	2	07	2-RH-TV-200D	RN/RADIATION MONITORING RETURN CONTINT ISOL	12050-FH-08282/09/07	AUX	245'	11.5/J	5	I	OPEN	CLOSED	NO	12050-RH-021/5	2-RH-SOV-200D
7192A	2	088	2-RH-SOV-200D	RN/RADIATION MONITORING RETURN CONTINT ISOL PILOT	12050-FH-08282/09/07	AUX	245'	11.5/J	S	R	AIR	VENT	NO	12050-RH-021/5	N/A
7195	1	07	2-SS-TV-200A	SS/PZR LIQUID SAMPLING CONTINT ISOL	12050-FH-08981/17/06	CONTINT	253'	9.5	--	I	CLOSED	CLOSED	NO	12050-SS-001/6	2-SS-SOV-200A
7194	1	088	2-SS-SOV-200A	SS/PZR LIQUID SAMPLING CONTINT ISOL PILOT	12050-FH-08981/17/06	CONTINT	253'	9.5	R	I	VERT	VENT	NO	12050-SS-001/6	N/A
7195	2	07	2-SS-TV-200B	SS/PZR LIQUID SAMPLING CONTINT ISOL	12050-FH-08981/17/05	AUX	249'	11.5/JK	--	I	CLOSED	CLOSED	NO	12050-SS-002/6	2-SS-SOV-200B
7196	2	088	2-SS-SOV-200B	SS/PZR LIQUID SAMPLING CONTINT ISOL PILOT	12050-FH-08981/17/05	AUX	249'	11.5/JK	R	I	VERT	VENT	NO	12050-SS-002/6	N/A
7197	1	07	2-SS-TV-200A	SS/PZR RLF TK GAS SAMPLING CONTINT ISOL	12050-FH-08981/17/06	CONTINT	253'	9	--	I	CLOSED	CLOSED	NO	12050-SS-008/6	2-SS-SOV-200A
7198	1	088	2-SS-SOV-200A	SS/PZR RLF TK GAS SAMPLING CONTINT ISOL PILOT	12050-FH-08981/17/06	CONTINT	253'	9	R	I	VERT	VENT	NO	12050-SS-008/6	N/A
7199	2	07	2-SS-TV-200B	SS/PZR RLF TK GAS SAMPLING CONTINT ISOL	12050-FH-08981/17/05	AUX	249'	11.5/JK	--	I	CLOSED	CLOSED	NO	12050-SS-009/7	2-SS-SOV-200B
7200	2	088	2-SS-SOV-200B	SS/PZR RLF TK GAS SAMPLING CONTINT ISOL PILOT	12050-FH-08981/17/05	AUX	249'	11.5/JK	R	I	VERT	VENT	NO	12050-SS-009/7	N/A
7200A	1	07	2-SS-TV-201A	SS/PRESSURIZER VAPOR SAMPLE CONTINT ISOL	12050-FH-08981/17/07	CONTINT	253'	9	--	I	CLOSED	CLOSED	NO	N/A	N/A
7200B	1	088	2-SS-SOV-201A	SS/PRESSURIZER VAPOR SAMPLE CONTINT ISOL PILOT	12050-FH-08981/17/07	CONTINT	253'	9	R	I	VERT	VENT	NO	N/A	N/A

CERTIFICATION:

The information identifying the equipment required to bring the plant to a safe shutdown condition on this Safe Shutdown Equipment List (SSEL) is, to the best of our knowledge and belief, correct and accurate. (One or more signatures of Systems or Operations Engineers)

DAWN H. JACOBS / ENGINEER

*Dawn H. Jacobs*

MARCH 11, 1993

DAVID J. VERDER / ENGINEER

*David J. Verder*

MARCH 11, 1993

Signature

NORTH ANNA UNIT 2  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
SMALL BREAK LOCAL AND CONTAINMENT SYSTEMS  
(Sorted by Line Number)

Data Base File Name/Date/Time: NA2\_SSEL.DBF / 03/11/93 / 09:30:38  
Sort Criteria: Line Number  
Filter Criteria: (Line Number > '7000')  
Program File Name & Version: SSEL V0.0

LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	Flr.-Elev.	LOCATION	Eq. or Row/Col.	SOFT NOTES	Normal	Desired	REBO? DNG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(16)
7200	2	07	2-SS-TV-201B	SS/PRESSURIZER VAPOR SAMPLE CONTINT ISOL	12050-FM-0898/17/E6 AUX	249'	11.5/JK	--	I	CLOSED	CLOSED	N/A	N/A
7200	2	08	2-SS-SOV-201B	SS/PRESSURIZER VAPOR SAMPLE CONTINT ISOL PILOT	12050-FM-0898/17/B8 AUX	249'	11.5/JK	R	I	VENT	VENT	N/A	N/A
7201	1	07	2-SS-TV-212A	SS/SG SURFACE SAMPLE CONTINT ISOL	12050-FM-0898/17/D3 CONTINT	253'	9.5	--	I	CLOSED	CLOSED	12050-SS-027/7	2-SS-SOV-212A
7202	1	08	2-SS-SOV-212A	SS/SG SURFACE SAMPLE CONTINT ISOL	12050-SS-027/7	253'	9.5	R	I	VENT	VENT	12050-SS-027/7	N/A
7203	2	07	2-SS-TV-212B	SS/SG SURFACE SAMPLE CONTINT ISOL	12050-FM-0898/17/E3 AUX	248'	11.5/JK	--	I	CLOSED	CLOSED	12050-SS-028/5	2-SS-SOV-212B
7204	2	08	2-SS-SOV-212B	SS/SG SURFACE SAMPLE CONTINT ISOL PILOT	12050-FM-0898/17/E3 AUX	248'	11.5/JK	R	I	VENT	VENT	12050-SS-028/5	N/A
7205	1	07	2-SV-TV-202-1A	SV/AIR EJECTOR DISCH CONTINT ISOL	12050-FM-072A2/19/C3 MSVH	272'	13.3/VA	--	I	CLOSED	CLOSED	12050-SV-010	2-SV-SOV-202-1A
7206	1	08	2-SV-SOV-202-1A	SV/AIR EJECTOR DISCH CONTINT ISOL PILOT	12050-FM-072A2/19/E3 MSVH	272'	13.4/VA	R	I	VENT	VENT	12050-SV-010	N/A
7207	1	07	2-SV-TV-202-2	SV/AIR EJECTOR DISCH CONTINT ISOL	12050-FM-072A2/19/B3 TB	279'	16/C	--	I	CLOSED	CLOSED	12050-SV-009	2-SV-SOV-202-2
7208	1	08	2-SV-SOV-202-2	SV/AIR EJECTOR DISCH CONTINT ISOL PILOT	12050-FM-072A2/19/B3 TB	279'	16/C	R	I	VENT	VENT	12050-SV-009	N/A
7209	2	07	2-SV-TV-203	SV/RADIATION MONITORING RETURN CONTINT ISOL	12050-FM-072A2/17/D3 MSVH	272'	13.3/VA	--	I	CLOSED	CLOSED	12050-SV-011/6	2-SV-SOV-203
7210	2	08	2-SV-SOV-203	SV/RADIATION MONITORING RETURN CONTINT ISOL PILOT	12050-FM-072A2/17/D3 MSVH	272'	13.4/VA	R	I	VENT	VENT	12050-SV-011/6	N/A
7211	2	07	2-CC-TV-200A	CC/CC RETURN FROM COOLING COIL CONTINT ISOL	12050-FM-0798/14/E3 AUX	244'	12/3	S	I,3S	OPEN	CLOSED	12050-CC-050	2-CC-SOV-200A
7212	2	08	2-CC-SOV-200A	CC/CC RETURN FROM COOLING COIL ISOL PILOT	12050-FM-0798/14/E3 AUX	244'	12/3	S R	I,3S	AIR	VENT	12050-CC-050	N/A
7213	2	07	2-CC-TV-200B	CC/CC RETURN FROM COOLING COIL CONTINT ISOL	12050-FM-0798/14/D4 AUX	244'	12/3	S	I	OPEN	CLOSED	12050-CC-051/5	2-CC-SOV-200B
7214	2	08	2-CC-SOV-200B	CC/CC RETURN FROM COOLING COIL CONTINT ISOL PILOT	12050-FM-0798/14/D4 AUX	244'	12/3	S R	I	AIR	VENT	12050-CC-051/5	N/A
7215	2	07	2-CC-TV-200C	CC/CC RETURN FROM COOLING COIL CONTINT ISOL	12050-FM-0798/14/C4 AUX	244'	11.3/L	S	I	OPEN	CLOSED	12050-CC-052/5	2-CC-SOV-200C

CERTIFICATION:

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DAWN W. JACOBS / ENGINEER

*Dawn W. Jacobs*  
Signature

MARCH 11, 1993

DAVID J. WEBBER / ENGINEER

*David J. Webber*  
Signature

MARCH 11, 1993

NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 SMALL BREAK LOCA AND CONTAINMENT SYSTEMS  
 (Sorted by Line Number)

Data Base File Name/Date/Time: NA2\_SSEL.DBF / 03/11/93 / 09:30:38  
 Sort Criteria: Line Number  
 Filter Criteria: (Line Number >= 7000)  
 Program File Name & Version: SSEL v0.0

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	EQUIPMENT Building	LOCATION Rm. or Row/Col.	OP. ST. Normal	Desired	POWER REQ'D?	SUPPORTING SYS. DMG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
7216	2	08B	2-CC-SOV-206C	CC/CC RETURN FROM COOLING COIL CONTMT ISOL PILOT	12050-FM-079B3/14/C4 AUX	244'	11.3/L	S R I	AIR	VENT	NO	12050-CC-052/5	N/A		
7217	1	07	2-CC-TV-201A	CC/THERMAL BARRIER DISCH CONTMT ISOL	12050-FM-079A1/19/D7 AUX	244'	11.4/K	S I	OPEN	CLOSED	NO	12050-CC-053/5	2-CC-SOV-201A		
7218	1	08B	2-CC-SOV-201A	CC/THERMAL BARRIER DISCH CONTMT ISOL PILOT	12050-FM-079A1/19/D7 AUX	244'	11.4/K	S R I	AIR	VENT	NO	12050-CC-053/5	N/A		
7219	2	07	2-CC-TV-201B	CC/THERMAL BARRIER DISCH CONTMT ISOL	12050-FM-079A1/19/D6 CONTMT	249'	10.5	S I	OPEN	CLOSED	NO	12050-CC-054/6	2-CC-SOV-201B		
7220	2	08B	2-CC-SOV-201B	CC/THERMAL BARRIER DISCH CONTMT ISOL PILOT	12050-FM-079A1/19/D6 CONTMT	249'	10.5	S R I	AIR	VENT	NO	12050-CC-054/6	N/A		
7221	1	07	2-CC-TV-202A	CC/RCP CC RETURN CONTMT ISOL	12050-FM-079A4/16/A5 AUX	244'	11.3/K	S I	OPEN	CLOSED	NO	12050-CC-055/5	2-CC-SOV-202A		
7222	1	08B	2-CC-SOV-202A	CC/RCP CC RETURN CONTMT ISOL PILOT	12050-FM-079A4/16/B6 AUX	244'	11.3/K	S R I	AIR	VENT	NO	12050-CC-055/5	N/A		
7223	2	07	2-CC-TV-202B	CC/RCP CC RETURN CONTMT ISOL	12050-FM-079A4/16/A3 CONTMT	250'	10.3	S I	OPEN	CLOSED	NO	12050-CC-058/6	2-CC-SOV-202B		
7224	2	08B	2-CC-SOV-202B	CC/RCP CC RETURN CONTMT ISOL PILOT	12050-FM-079A4/16/A3 CONTMT	250'	10.3	S R I	AIR	VENT	NO	12050-CC-058/6	N/A		
7225	1	07	2-CC-TV-202C	CC/RCP CC RETURN CONTMT ISOL	12050-FM-079A3/17/A5 AUX	244'	11.7/K	S I	OPEN	CLOSED	NO	12050-CC-056/5	2-CC-SOV-202C		
7226	1	08B	2-CC-SOV-202C	CC/RCP CC RETURN CONTMT ISOL PILOT	12050-FM-079A3/17/B6 AUX	244'	11.7/K	S R I	AIR	VENT	NO	12050-CC-056/5	N/A		
7227	2	07	2-CC-TV-202D	CC/RCP CC RETURN CONTMT ISOL	12050-FM-079A3/17/A3 CONTMT	249'	10.3	S I	OPEN	CLOSED	NO	12050-CC-059/5	2-CC-SOV-202D		
7228	2	08B	2-CC-SOV-202D	CC/RCP CC RETURN CONTMT ISOL PILOT	12050-FM-079A3/17/A3 CONTMT	249'	10.3	S R I	AIR	VENT	NO	12050-CC-059/5	N/A		
7229	1	07	2-CC-TV-202E	CC/RCP CC RETURN CONTMT ISOL	12050-FM-079A2/16/A5 AUX	251'	11.8/JK	S I	OPEN	CLOSED	NO	12050-CC-057/5	2-CC-SOV-202E		
7230	1	08B	2-CC-SOV-202E	CC/RCP CC RETURN CONTMT ISOL PILOT	12050-FM-079A2/16/B6 AUX	251'	11.8/JK	S R I	AIR	VENT	NO	12050-CC-057/5	N/A		
7231	2	07	2-CC-TV-202F	CC/RCP CC RETURN CONTMT ISOL	12050-FM-079A2/16/A3 CONTMT	249'	10.1	S I	OPEN	CLOSED	NO	12050-CC-060/6	2-CC-SOV-202F		
7232	2	08B	2-CC-SOV-202F	CC/RCP CC RETURN CONTMT ISOL PILOT	12050-FM-079A2/16/A3 CONTMT	249'	10.1	S R I	AIR	VENT	NO	12050-CC-060/6	N/A		
7237	1, 2	07	2-CC-TV-204A	CC/RCP CC CONTMT ISOL	12050-FM-079A2/16/E8 AUX	254'	12/J	S I	OPEN	CLOSED	NO	12050-CC-063/4	2-CC-SOV-204A1 2-CC-SOV-204A2		
7238	1	08B	2-CC-SOV-204A1	CC/RCP CC CONTMT ISOL PILOT	12050-FM-079A2/16/E8 AUX	254'	12/J	S R I	AIR	VENT	NO	12050-CC-063/4	N/A		
7239	2	08B	2-CC-SOV-204A2	CC/RCP CC CONTMT ISOL PILOT	12050-FM-079A2/16/E8 AUX	254'	12/J	S R I	AIR	VENT	NO	12050-CC-063/4	N/A		

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DANN W. JACOBS / ENGINEER

*D. W. Jacobs*  
 Signature

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

*D. J. Werder*  
 Signature

MARCH 11, 1993

NORTH ANNA UNIT 2  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
SMALL BREAK LOCA AND CONTAINMENT SYSTEMS  
(Sorted by Line Number)

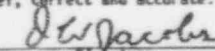
Data Base File Name/Date/Time: NA2\_SSEL.DBF / 03/11/93 / 09:30:38  
Sort Criteria: Line Number  
Filter Criteria: (Line Number >= '7000')  
Program File Name & Version: SSEM v0.0

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Fir.Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. ST. Normal	Desired	POWER REQ'D	SUPPORTING SYS. (Dwg. No./REV.)	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
7241	1, 2	07	2-CC-TV-204B	CC/RCP CC CONTMT ISOL	12050-FM-079A3/17/EB	AUX 244'	12/J	S	I	OPEN	CLOSED	NO	12050-CC-064/4	2-CC-SOV-204B1 2-CC-SOV-204B2	
7242	1	08B	2-CC-SOV-204B1	CC/RCP CC CONTMT ISOL PILOT	12050-FM-079A3/17/EB	AUX 244'	12/J	S	R	AIR	VENT	NO	12050-CC-064/4	N/A	
7243	2	08B	2-CC-SOV-204B2	CC/RCP CC CONTMT ISOL PILOT	12050-FM-079A3/17/EB	AUX 244'	12/J	S	R	AIR	VENT	NO	12050-CC-064/4	N/A	
7245	1, 2	07	2-CC-TV-204C	CC/RCP CC CONTMT ISOL	12050-FM-079A4/16/EB	AUX 244'	11.5/J	S	I	OPEN	CLOSED	NO	12050-CC-065/4	2-CC-SOV-204C1 2-CC-SOV-204C2	
7246	1	08B	2-CC-SOV-204C1	CC/RCP CC CONTMT ISOL PILOT	12050-FM-079A4/16/EB	AUX 244'	11.5/J	S	R	AIR	VENT	NO	12050-CC-065/4	N/A	
7247	2	08B	2-CC-SOV-204C2	CC/RCP CC CONTMT ISOL PILOT	12050-FM-079A4/16/EB	AUX 244'	11.5/J	S	R	AIR	VENT	NO	12050-CC-065/4	N/A	
7249	1	07	2-CC-TV-205A	CC/CC RETURN FROM COOLING COIL CONTMT ISOL	12050-FM-079B3/14/E4	CONTMT 253'	10.5	S	I	OPEN	CLOSED	NO	12050-CC-066/7	2-CC-SOV-205A	
7260	1	08B	2-CC-SOV-205A	CC/CC RETURN FROM COOLING COIL CONTMT ISOL PILOT	12050-FM-079B3/14/E4	CONTMT 253'	10.5	S	R	AIR	VENT	NO	12050-CC-066/7	N/A	
7251	1	07	2-CC-TV-205B	CC/CC RETURN FROM COOLING COIL CONTMT ISOL	12050-FM-079B3/14/D4	CONTMT 250'	9.8	S	I	OPEN	CLOSED	NO	12050-CC-067/6	2-CC-SOV-205B	
7252	1	08B	2-CC-SOV-205B	CC/CC RETURN FROM COOLING COIL CONTMT ISOL PILOT	12050-FM-079B3/14/D4	CONTMT 250'	9.8	S	R	AIR	VENT	NO	12050-CC-067/6	N/A	
7253	1	07	2-CC-TV-205C	CC/CC RETURN FROM COOLING COIL CONTMT ISOL	12050-FM-079B3/14/E4	CONTMT 251'	10.5	S	I	OPEN	CLOSED	NO	12050-CC-068/4	2-CC-SOV-205C	
7254	1	08B	2-CC-SOV-205C	CC/CC RETURN FROM COOLING COIL CONTMT ISOL PILOT	12050-FM-079B3/14/E4	CONTMT 251'	10.5	S	R	AIR	VENT	NO	12050-CC-068/4	N/A	
7255	1	07	2-IA-TV-202A	IA/INSTR AIR HEADER CONTMT ISOL	12050-FM-082M1/09/07	AUX 244'	12/J	--	I	CLOSED	CLOSED	NO	12050-IA-013/6	2-IA-SOV-202A	
7256	1	08B	2-IA-SOV-202A	IA/INSTR AIR HEADER CONTMT ISOL PILOT	12050-IA-013/6	AUX 244'	12/J	R	I	VENT	VENT	NO	12050-IA-013/6	N/A	
7257	2	07	2-IA-TV-202B	IA/INSTR AIR HEADER CONTMT ISOL	12050-FM-082M1/09/07	AUX 244'	12/J	--	I	CLOSED	CLOSED	NO	12050-IA-014/5	2-IA-SOV-202B	
7258	2	08B	2-IA-SOV-202B	IA/INSTR AIR HDR CONTMT ISOL PILOT	12050-IA-014/5	AUX 244'	12/J	R	I	VENT	VENT	NO	12050-IA-014/5	N/A	

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DAWN W. JACOBS / ENGINEER

  
Signature

MARCH 11, 1993

DAVID J. WERDER / ENGINEER

  
Signature

MARCH 11, 1993



## Appendix L

## NOTES FOR ALL SAFE SHUTDOWN EQUIPMENT LISTS

General SSEL Notes - See SSEL column 11 to determine applicability.

1. The following CCW pump pressure indicators are local to the pump and therefore are not vital to the SSEL: 1-CC-PI-101A/B, -102A/B; 2-CC-PI-201A/B, -202A/B.
2. Failure of this valve to operate will not result in a single failure of the system as it can be manually operated with a handwheel.
3. "Normal" position, as indicated on the SSEL, is based on the July 30, 1990 meeting with NAPS operations personnel and differs from that shown on the P&ID.
4. Additional drawings associated with these components are:  
  
11715-FE-6A, B, C, D, E, F, G  
11715-FE-18N  
11715-FE-9CJ, 9DL, 9FB  
11715-FE-67A, B  
11715-FE-78A, B
5. System boundary per July 30, 1990 meeting.
6. These items are included on the SSEL as they are identified as a result of the relay evaluation.
7. AP-22 would be used to align auxiliary feedwater flow through the MOV header to the steam generators upon loss of instrument air to the HCV header.
8. The steam generator safety valves will not be challenged and are shown as a boundary. Therefore, the flow elements are not needed for safe shutdown; however, a seismic evaluation should be performed for IPEEE since the safety valves are associated with NSSS equipment.
9. The steam generator steam pressure channels selected are the same as those for Appendix R, with an additional channel selected for redundancy.
10. Additional drawings for the control rod drive mechanism can be found in the 11715/12050 - 1.27 series.

11. The service water system boundary excludes the auxiliary service water pumps as the service water pumps do not need a backup.
12. PORV block valves are indicated as active because of possible PORV failure.
13. Additional drawings for the neutron detectors can be found in the 11715/12050-1.25 series.
14. These items are NSSS equipment and are included for IPEEE purposes only.
15. These items are to be put in the desired position by use of administrative controls. Those valves which require operator action will be included in an attachment to AP-36.
16. All piping systems comprising the boundary of the pressurizer relief tank need not be verified for safe shutdown since rupture of the tank safety heads is an acceptable consequence of discharge to the tank. Level and pressure instruments are verified as optional items to permit the operator to assess margin to safety head rupture.
17. Offsite power is required to operate these valves; however, procedures are in place for manual operation.
18. This item is included on the SSEL as a result of the preliminary walkdown.
19. Accumulator test isolation valves (1-SI-HCV-1850 D/F, 2-SI-HCV-2850 D/F), their pilot valves (1-SI-SOV-1850 D/F, 2-SI-SOV-2850 D/F), and the accumulator outlet isolation valves (1-SI-MOV-1865 B/C, 2-SI-MOV-2865 B/C) are listed for decay heat removal function.
20. Absence of a redundant seal parameter indicator will not preclude safe shutdown if the indicator fails.
21. Backup not required per conference reported by MPR letter to Virginia Power (NP-1146/NP-1147-V01-009), dated August 3, 1990.
22. Accumulator test isolation valves (1-SI-HCV-1850B, 2-SI-HCV-2850B), their pilot valves (1-SI-SOV-1850B, 2-SI-SOV-2850B), and the accumulator outlet isolation valves (1-SI-MOV-1865A, 2-SI-MOV-2865A) are listed for pressure control function.

23. These items of equipment are not required to operate but rather require a seismic review for system boundary integrity only.
24. These valves will be inoperable upon loss of instrument air. Virginia Power will develop a method and procedure for manual operation.
25. These valves have their own air accumulator and can be manually operated locally.
26. These coolers are required to operate for the small LOCA scenario of IPEEE; however, a seismic review for A-46 should also be performed because the coolers constitute a fluid boundary.
27. The RHR heat exchanger cooling water outlet containment isolation valves (1-CC-TV-103A/B, 2-CC-TV-203A/B) will fail closed on loss of air. AP-28 includes a procedure for opening these valves with a nitrogen jumper when required.
28. These valves are used to ensure a system boundary in the event of loss of instrument or service air.
29. Additional drawings for EDG components can be found in the 11715/12057-1.30 series.
30. Additional drawings for heat trace cabinets can be found in the 11715/12050-1.42 series.
31. Drawing unavailable for Unit 1. Information based on analogous valve for Unit 2.
32. Valve not shown on P&ID for Unit 1. Valve is shown on Unit 2 P&ID and is identified by Passport database and NCRODP-52.
33. A commitment to maintaining the nitrogen tanks pressurized or to the development of a procedure to supply high-pressure nitrogen via the supply line is needed.
34. The loop drawing for this item was unavailable during SSEL preparation. The operating position of this valve was assumed based on similar valves in the plant.
35. The loop drawing for this item was unavailable during SSEL preparation. Information is based on an analogous item for Unit 1.

36. This item will be evaluated using the rule-of-the-box determination as discussed in the GIP. The parent component, on/in which the item is mounted, is identified in column 16 of the SSEL.
37. This item does not require a relay review because during normal operation the item is isolated from its power supply by administrative control.
38. The hydrogen recombiner system is shared between Unit 1 and Unit 2. The desired valve positions indicated in these SSEL lines are for use with Unit 1.
39. The hydrogen recombiner system is shared between Unit 1 and Unit 2. The desired valve positions indicated in these SSEL lines are for use with Unit 2.
40. The desired position of these valves is "open" for sampling during safe shutdown, but "closed" for containment isolation.
41. These cabinets/panels contain essential relays.
42. This item is listed in the relay report as cabinet 1-EI-CB-23F.
43. DELETED
44. This item is included in the SSEL to address the Generic Letter 131 concern in NUREG 1407.

Location Notes, Unit 1 - See SSEL column 9 to determine applicability

- 1A. Three feet north of RWST, 3 1/2 feet off ground.
- 1B. Three feet south of RWST, 3 feet off ground.
- 1C. South wall, west end.
- 1D. North of A and B boric acid tanks.
- 1E. Tank is connected to the AFPH.
- 1F. Eight feet southwest of inside door, 4 feet above floor.
- 1G. Two feet from handrail on stairs leading to upper deck.
- 1H. East side, first ladder down, second level down.
- 1I. West side, lowest level, 8 feet southeast of ladder.
- 1J. North wall of Unit 1 piping penetration area.
- 1K. Second room, lower level between catwalks.
- 1L. DELETED.
- 1M. Down ladder to second level, 7 feet north of ladder.
- 1N. Down ladder to second level, 2 feet south of ladder.
- 1O. East side between MCC's west of P.V. blowers.
- 1P. Second room, lower level, 3 feet inside.
- 1Q. Ten feet off floor, 7 feet east of column 7 toward column 6.
- 1R. DELETED
- 1S. DELETED
- 1T. DELETED

- 1U. South side of catwalk, 3 feet north of penetration.
- 1V. South side of catwalk, 2 feet from south wall.
- 1W. South side of catwalk, 2 feet north of penetration.
- 1X. Three feet northwest of 1-RS-TK-1, 4 feet west of casing cooling house.
- 1Y. Four feet from north wall, in-line with louver metal vent.
- 1Z. One foot from northeast wall, 30 feet from wall at entrance.
- 1AA. Fifteen feet west of door, 4 feet from south wall, 2 feet off floor.
- 1BB. One foot from northeast wall, 20 feet from wall at entrance.

Location Notes. Unit 2 - See SSEL column 9 to determine applicability.

- 2A. Five feet above floor, 6 feet north of containment wall.
- 2B. Five feet above floor, 22 feet north of containment.
- 2C. Five feet above floor, 20 feet north of containment wall.
- 2D. Nine feet north of 2-IA-TK-4D against east wall.

## Appendix M

**REFERENCES AND DRAWINGS USED FOR SSEL DEVELOPMENT**General

Seismic Qualification Utility Group, Generic Implementation Procedure (GIP) for Seismic Verification of Nuclear Plant Equipment, Revision 2, June 1991 as corrected on February 14, 1992.

Supplement No. 1 to Generic Letter (GL) 87-02 that transmits Supplemental Safety Evaluation Report No. 2 (SSER No. 2) on SQUG Generic Implementation Procedure, Revision 2, as connected on February 14, 1992 (GIP-2) dated May 22, 1992.

EPRI NP-6041-SL Revision 1. A Methodology for Assessment of Nuclear Power Plant Seismic Margin (Revision 1).

NUREG 1407 - Procedural and Submittal Guidance for the Individual Plant Examination of External Events (IPEEE) for Severe Accident Vulnerabilities Final Report.

Electric Power Research Institute, Seismic Margin Assessment of the Catawba Nuclear Station, EPRI NP-6359, April 1989.

Station Documents

10CFR50 Appendix R Report, North Anna Power Station Units 1 and 2, Revision 5.

Station Blackout Coping Evaluation: North Anna Power Station Units 1 and 2, prepared by Stone & Webster Engineering Corporation, dated June 1989.

Correspondence

Letter NP-1146/NP-1147-VO1-009, MPR (Cooper) to Virginia Power (Roth), North Anna Power Station Units 1 & 2: Preliminary Seismic Walkdowns of Equipment Selected for Safe Shutdown for Resolution of USI A-46 (Agreement No. ER-MG-9005), dated September 24, 1990.

Letter NP-1146/NP-1147-VO1-038, MPR (Cooper) to Virginia Power (Roth), North Anna Power Station Units 1 and 2: Report of Meeting Concerning Draft Report MPR-1201, "Identification of Safe Shutdown Equipment" (Agreement No. ER-MG9005), dated April 25, 1991.

Memorandum from Virginia Power (Roth) to MPR (Cooper), Station Operations Comments on NAPS SSEL, dated July 22, 1991.

Letter from Virginia Power (Sorrell) to MPR (Cooper), NAPS 2 In-Containment Preliminary Walkdown Datasheets, October 19, 1990.

NAPS 1 and 2 Outside Containment Preliminary Walkdown Datasheets, October 1991.

Letter from Virginia Power to MPR Associates dated November 9, 1992 Subject: Contract No. ER-LC 2003 Safe Shutdown Equipment List and Relay Evaluations for USI A-46 and IPEEE.

Letter from Virginia Power to MPR Associates dated November 24, 1992, Subject: Final Safe Shutdown Equipment List (SSEL) for USI A-46 North Anna Power Station - Units 1 and 2.

Letter Serial 114-12-03 from MPR to Virginia Power dated January 27, 1993, Subject: Revised Trip Report from MPR's January 19, 1993 Visit to Innsbrook Technical center.

Letter Serial 114-12-02 from MPR to Virginia Power dated January 27, 1993, Subject: North Anna Power Station USI A-46 and IPEEE Safe Shutdown Equipment Selection.

Letter from Virginia Power to MPR Associates dated February 1, 1993, Subject: Amendment No. 001 Contract No. ER-LC 2003 Safe Shutdown Equipment List and Relay Evaluation for A-46 and IPEEE.

Letter Serial 114-12-04 from MPR to Virginia power dated February 3, 1993, Subject: North Anna Power Station USI A-46 and IPEEE Safe Shutdown Equipment Selection.

Letter Serial 114-12-05 from MPR to Virginia Power dated February 10, 1993, Subject: North Anna Power Station USI A-46 and IPEEE Safe Shutdown Equipment Selection.

NAPS Drawings Used To Prepare SSELs

(See Table M-1)



## TABLE M-1

## DRAWINGS USED FOR SSEL DEVELOPMENT

The following is a list of piping and instrumentation drawings and electrical drawings used to develop the North Anna Power Station Units 1 and 2 Safe Shutdown Equipment List.

(Example: 11715-FB-006A1/19 is drawing number 11715-FB-006A, Sheet 1, Revision 19)

11715-FB-024L1/11	11715-FM-078A1/36
	11715-FM-078A3/28
11715-FB-040A1/13	11715-FM-078A4/43
11715-FB-040A2/13	
	11715-FM-078B1/20
11715-FB-040D1/15	11715-FM-078B2/14
11715-FB-040D2/13	11715-FM-078B3/21
	11715-FM-078B4/15
11715-FB-044C3/07	
	11715-FM-078C1/32
11715-FE-1A/21	11715-FM-078C2/27
11715-FE-1AE/13	11715-FM-078G1/12
	11715-FM-078G2/10
11715-FE-1AF/13	
	11715-FM-078H/04
11715-FE-1E1/18	
	11715-FM-078J/00
11715-FM-070A1/26	
11715-FM-070A3/26	11715-FM-078K/00
11715-FM-070B1/19	11715-FM-079A1/17
11715-FM-070B2/19	11715-FM-079A2/18
11715-FM-070B3/23	11715-FM-079A3/14

11715-FM-072B/13	11715-FM-079B1/21
11715-FM-073A/31	11715-FM-079B2/21
11715-FM-073B/13	11715-FM-079B3/20
	11715-FM-079B4/21
	11715-FM-079B5/21
11715-FM-074A1/32	11715-FM-079C1/13
11715-FM-074A3/29	11715-FM-079C2/13
	11715-FM-079C3/13
11715-FM-088A1/16	11715-FM-079C4/15
	11715-FM-079C5/18
11715-FM-089A1/16	
11715-FM-089D1/16	12050-FM-073A/30
11715-FM-091A1/20	12050-FM-073B/11
11715-FM-091A2/23	
11715-FM-091A3/20	12050-FM-074A1/27
11715-FM-091A4/24	12050-FM-074A3/29
11715-FM-091B/05	
	12050-FM-079A1/19
11715-FM-093A1/19	12050-FM-079A2/16
11715-FM-093A2/19	12050-FM-079A3/17
11715-FM-093A3/22	12050-FM-079A4/16
	12050-FM-079A5/17
	12050-FM-079B3/14
11715-FM-093B1/22	
11715-FM-093B2/23	12050-FM-089B1/17
11715-FM-094A1/14	12050-FM-091A1/20
11715-FM-094A2/15	12050-FM-091A2/19
	12050-FM-091A3/20
11715-FM-095A1/22	12050-FM-091A4/21
	12050-FM-091B/10
11715-FM-095B1/21	
11715-FM-095B2/24	12050-FM-093A1/24
	12050-FM-093A2/24
11715-FM-095C1/14	12050-FM-093A3/26
11715-FM-095C2/13	
	12050-FM-093B1/23
11715-FM-096A1/28	12050-FM-093E2/26
11715-FM-096A2/23	
11715-FM-096A3/22	11715-FM-098A2/17
	11715-FM-098A3/16
11715-FM-096B1/17	11715-FM-098A4/18

11715-FM-096B4/17

11715-FM-108A1/03  
11715-FMC-106A/01

12050-FE-1A/10  
12050-FE-1AF/09  
12050-FE-1E/15  
12050-FM-070A3/22

12050-FM-070B1/18  
12050-FM-070B2/20  
12050-FM-070B3/19

12050-FM-096B1/19  
12050-FM-096B2/16  
12050-FM-096B3/17  
12050-FM-096B4/20

12050-FM-098A2/19  
12050-FM-098A3/18  
12050-FM-098A4/18

13075-FM-093C1/06  
13075-FM-093C2/06

13075-FM-093D1/06  
13075-FM-093D2/06

12050-FE-1AE/10

12050-FM-094A1/15  
12050-FM-094A2/14

12050-FM-095B1/22  
12050-FM-095B2/25

12040-FM-095C1/20  
12050-FM-095C2/14

12050-FM-096A1/22  
12050-FM-096A2/24  
12050-FM-096A3/21

APPENDIX A (Continued)

COMPOSITE SSEL

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA1\_SSEL.DBF / 05/20/97 / 11:43:22  
 Sort Criteria: Class, ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN	CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING DWG. NO./REV.	SYS. & SUPPORTING COMPONENTS	REQ'D INTERCONNECTIONS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	
5238	1	0	1-CH-E-1A1	CH/CHARGING PUMP 1A GEAR BOX COOLER	11715-FM-078G1/12/D3 AUX		245'	9.5/J	S	--	N/A	N/A	NO	N/A		N/A	
5236	1	0	1-CH-E-1A2A	CH/CHARGING PUMP 1A SEAL COOLER 1	11715-FM-078G1/12/D3 AUX		245'	9.5/J	S	--	N/A	N/A	NO	N/A		N/A	
5237	1	0	1-CH-E-1A2B	CH/CHARGING PUMP 1A SEAL COOLER 2	11715-FM-078G1/12/D3 AUX		245'	9.5/J	S	--	N/A	N/A	NO	N/A		N/A	
5242	1	0	1-CH-E-1B1	CH/CHARGING PUMP 1B GEAR BOX COOLER	11715-FM-078G1/12/D5 AUX		245'	9.5/J	S	--	N/A	N/A	NO	N/A		N/A	
5240	1	0	1-CH-E-1B2A	CH/CHARGING PUMP 1B SEAL COOLER 1	11715-FM-078G1/12/D5 AUX		245'	9.5/J	S	--	N/A	N/A	NO	N/A		N/A	
5241	1	0	1-CH-E-1B2B	CH/CHARGING PUMP 1B SEAL COOLER 2	11715-FM-078G1/12/D5 AUX		245'	9.5/J	S	--	N/A	N/A	NO	N/A		N/A	
5246	1	0	1-CH-E-1C1	CH/CHARGING PUMP 1C GEAR BOX COOLER	11715-FM-078G1/12/D7 AUX		245'	9.5/J	S	--	N/A	N/A	NO	N/A		N/A	
5244	1	0	1-CH-E-1C2A	CH/CHARGING PUMP 1C SEAL COOLER 1	11715-FM-078G1/12/D7 AUX		245'	9.5/J	S	--	N/A	N/A	NO	N/A		N/A	
5245	1	0	1-CH-E-1C2B	CH/CHARGING PUMP 1C SEAL COOLER 2	11715-FM-078G1/12/D7 AUX		245'	9.5/J	S	--	N/A	N/A	NO	N/A		N/A	
1148	1	0	1-CH-H-6A	CH/BAST A STRIP HEATER	11715-FM-095A1/22/E3 AUX		259'	7/J	S	R --	ON	ON	YES	11715-CH-044/3		N/A	
1149	1	0	1-CH-H-6B	CH/BAST A STRIP HEATER	11715-FM-095A1/22/E3 AUX		262'	7/J	S	R --	ON	ON	YES	11715-CH-045/2		N/A	
1150	2	0	1-CH-H-7A	CH/BAST B STRIP HEATER	11715-FM-095A1/22/E5 AUX		260'	11.2/J	S	R --	ON	ON	YES	11715-CH-041/6		N/A	
1151	2	0	1-CH-H-7B	CH/BAST B STRIP HEATER	11715-FM-095A1/22/E5 AUX		260'	7/J	S	R --	ON	ON	YES	11715-CH-043/3		N/A	
5523	1	0	1-EG-FF-H*	EG/FUEL OIL FILTER	11715-1.30-212C	SB	270'	EDG	S	36,29	N/A	N/A	NO	N/A		EDG-1H	
5524	2	0	1-EG-FF-J*	EG/FUEL OIL FILTER	11715-1.30-212C	SB	270'	EDG	S	36,29	N/A	N/A	NO	N/A		EDG-1J	
4211A3		0	1-FW-FY-1479	ELECTRO-PNEUMATIC CONTROLLER		SB	294'	D/4	S								
4211B3		0	1-FW-FY-1489	ELECTRO-PNEUMATIC CONTROLLER		SB	294'	D/4	S								
4211C3		0	1-FW-FY-1499	ELECTRO-PNEUMATIC CONTROLLER		SB	294'	D/4	S								
7048	1	0	1-HC-HC-1	HC/HYDROGEN COMBINER 1	11715-FMC-092A1/1/B3 YARD/TUNL		274'	11.2/GH	S	R 1,38	OFF	ON	YES	N/A		1-EP-MC-11	
5476	1	0	1-HV-SAD-1H*	HV/DG ROOM 1H SUPPLY AIR DAMPER	11715-FB-024L1/11/D5 SB		272'	14/E	S	--	N/A	N/A	NO	N/A		N/A	
5478	2	0	1-HV-SAD-1J*	HV/DG ROOM 1J SUPPLY AIR DAMPER	11715-FB-024L1/11/D7 SB		272'	16/E	S	--	N/A	N/A	NO	N/A		N/A	
5248	1	0	2-CH-E-1A2A	CH/CHARGING PUMP 2A SEAL COOLER 1	11715-FM-078G2/10/D3 AUX		245'	9.5/J	S	--	N/A	N/A	NO	N/A		N/A	
5249	1	0	2-CH-E-1A2B	CH/CHARGING PUMP 2A SEAL COOLER 2	11715-FM-078G2/10/D3 AUX		245'	9.5/J	S	--	N/A	N/A	NO	N/A		N/A	
5252	1	0	2-CH-E-1B2A	CH/CHARGING PUMP 2B SEAL COOLER 1	11715-FM-078G2/10/D5 AUX		245'	9.5/J	S	--	N/A	N/A	NO	N/A		N/A	
5253	1	0	2-CH-E-1B2B	CH/CHARGING PUMP 2B SEAL COOLER 2	11715-FM-078G2/10/D5 AUX		245'	9.5/J	S	--	N/A	N/A	NO	N/A		N/A	

NORTH ANNA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
COMPOSITE SSEL  
(Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NAI\_SSEL.DBF / 05/20/97 / 11:43:22  
Sort Criteria: Class, ID Number  
Filter Criteria: <none>  
Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
5256	1	0	2-CH-E-1C2A	CH/CHARGING PUMP 2C SEAL COOLER 1	11715-FM-078G2/10/D7	AUX	245'	10/J	S	--	N/A	N/A	NO	N/A	N/A
5257	1	0	2-CH-E-1C2B	CH/CHARGING PUMP 2C SEAL COOLER 2	11715-FM-078G2/10/D7	AUX	245'	10/J	S	--	N/A	N/A	NO	N/A	N/A
5250	1	0	2-CH-E-2A1	CH/CHARGING PUMP 2A GEAR BOX COOLER	11715-FM-078G2/10/D3	AUX	245'	9.5/J	S	--	N/A	N/A	NO	N/A	N/A
5254	1	0	2-CH-E-2B1	CH/CHARGING PUMP 2B GEAR BOX COOLER	11715-FM-078G2/10/D5	AUX	245'	9.5/J	S	--	N/A	N/A	NO	N/A	N/A
5258	1	0	2-CH-E-2C1	CH/CHARGING PUMP 2C GEAR BOX COOLER	11715-FM-078G2/10/D7	AUX	245'	10/J	S	--	N/A	N/A	NO	N/A	N/A
5525	1	0	2-EG-FF-H*	EG/FUEL OIL FILTER	11715-1.30-212C	SB	270'	EDG	S	36,29	N/A	N/A	NO	N/A	EDG-2H
5526	2	0	2-EG-FF-J*	EG/FUEL OIL FILTER	11715-1.30-212C	SB	270'	EDG	S	36,29	N/A	N/A	NO	N/A	EDG-2J
7059	2	0	2-HC-HC-1	HC/HYDROGEN COMBINER 2	11715-FMC-092A1/1/B3	YARD/TUNL	274"	11.7/GH	S R	1,39	OFF	ON	YES	N/A	2-EP-MC-11
5477	1	0	2-HV-SAD-2H*	HV/DG ROOM 2H SUPPLY AIR DAMPER	11715-FB-024L1/11/D6	SB	272'	15/E	S	--	N/A	N/A	NO	N/A	N/A
5479	2	0	2-HV-SAD-2J*	HV/DG ROOM 2J SUPPLY AIR DAMPER	11715-FB-024L1/11/D8	SB	272'	17/E	S	--	N/A	N/A	NO	N/A	N/A
9999A	0	0	CR CEILING	CONTROL ROOM CEILING		SB	277'	CR	S		N/A	N/A	NO	N/A	N/A
5603A	1	0	JB-2661	/JUNCTION BOX	DWG NOT AVAILABLE	QSPH	259'	4.5/GB	S R	6,41	N/A	N/A	YES	N/A	N/A
5603B	1	0	JB-2662	/JUNCTION BOX	DWG NOT AVAILABLE	QSPH	259'	4.5/GB	S R	6,41	N/A	N/A	YES	N/A	N/A
5603C	1	0	JB-2663	/JUNCTION BOX	DWG NOT AVAILABLE	QSPH	259'	4.5/GB	S R	6,41	N/A	N/A	YES	N/A	N/A
5603D	1	0	JB-2664	/JUNCTION BOX	DWG NOT AVAILABLE	QSPH	259'	4.5/GB	S R	6,41	N/A	N/A	YES	N/A	N/A
5603E	1	0	JB-2665	/JUNCTION BOX	DWG NOT AVAILABLE	QSPH	259'	4.5/GB	S R	6,41	N/A	N/A	YES	N/A	N/A
5603F	1	0	JB-2666	/JUNCTION BOX	DWG NOT AVAILABLE	QSPH	259'	4.5/GB	S R	6,41	N/A	N/A	YES	N/A	N/A
6015	1	01	1-EP-MC-10	EP/EMERGENCY MCC 1H1-1	11715-FE-001Z1/14/F8	SB	254'	9/C	S R	41	N/A	N/A	YES	N/A	1-EE-SS-01
6022	2	01	1-EP-MC-11	EP/EMERGENCY MCC 1J1-1	11715-FE-001P1/25/C8	SB	254'	9/C	S R	41	N/A	N/A	YES	N/A	1-EE-SS-02
6021	1	01	1-EP-MC-12	EP/EMERGENCY MCC 1H1-1A	11715-FE-001T1/15/E4	EDG	271'	--	S R	--	N/A	N/A	YES	N/A	1-EP-MC-10
6027	2	01	1-EP-MC-13	EP/EMERGENCY MCC 1J1-1A	11715-FE-001T1/15/D8	EDG	271'	--	S R	--	N/A	N/A	YES	N/A	1-EP-MC-11
6020	1	01	1-EP-MC-19	EP/EMERGENCY MCC 1H1-2N	11715-FE-001Q1/21/F7	AUX	260'	CABLE TUNNEL	S R	41	N/A	N/A	YES	N/A	1-EE-SS-03
6017	1	01	1-EP-MC-20	EP/EMERGENCY MCC 1H1-2S	11715-FE-001Q1/21/D7	AUX	260'	CABLE TUNNEL	S R	41	N/A	N/A	YES	N/A	1-EE-SS-01
6024	2	01	1-EP-MC-21	EP/EMERGENCY MCC 1J1-2N	11715-FE-001R1/21/F7	AUX	260'	CABLE TUNNEL	S R	41	N/A	N/A	YES	N/A	1-EP-MC-22
6023	2	01	1-EP-MC-22	EP/EMERGENCY MCC 1J1-2S	11715-FE-001R1/21/C7	AUX	260'	CABLE TUNNEL	S R	41	N/A	N/A	YES	N/A	1-EE-SS-02

NORTH ANNA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
COMPOSITE SSEL  
(Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA1\_SSEL.DBF / 05/20/97 / 11:43:22  
Sort Criteria: Class, ID Number  
Filter Criteria: <none>  
Program File Name & Version: SSEL 2.1

LINE NO.	EQUIP TRAIN	CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg No./Rev./Zone	Building	EQUIPMENT Flr. Elv.	LOCATION Rm. or Row/Col	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING DWG. NO./REV.	SYS. & SUPPORTING COMPONENTS	REQ'D INTERCONNECTIONS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	
6018	1	01	1-EP-MC-32	EP/EMERGENCY MCC 1H1-3	11715-FE-001T1/15/F8	SWPH	328'	--	S R	--	N/A	N/A	YES	N/A		1-EE-SS-01	
6025	2	01	1-EP-MC-33	EP/EMERGENCY MCC 1J1-3	11715-FE-001T1/15/E8	SWPH	328'	--	S R	--	N/A	N/A	YES	N/A		1-EE-SS-02	
6016	1	01	1-EP-MC-41	EP/EMERGENCY MCC 1H1-4	11715-FE-001Z1/14/D8	SB	254'	9/C	S R	41	N/A	N/A	YES	11715-FE-009EJ/13		1-EE-SS-01	
6019	1	01	1-EP-MC-50	EP/EMERGENCY MCC 1H1-3A	11715-FE-001T1/15/B8	SWPH	326'	--	S R	41	N/A	N/A	YES	N/A		1-EP-MC-32	
6026	2	01	1-EP-MC-51	EP/EMERGENCY MCC 1J1-3A	11715-FE-001T1/15/F3	SWPH	326'	--	S R	41	N/A	N/A	YES	N/A		1-EP-MC-31	
1252	1	02	1-EE-BKR-BYA	CR*/REACTOR TRIP BREAKER BYPASS A	11715-1.27-402A	AUX	280'	RCD	S R	--	CLOSED	OPEN	YES	N/A		N/A	
1253	2	02	1-EE-BKR-BYB	CR*/REACTOR TRIP BREAKER BYPASS B	11715-1.27-402A	AUX	280'	RCD	S R	--	CLOSED	OPEN	YES	N/A		N/A	
1250	1	02	1-EE-BKR-BYA	CR*/REACTOR TRIP BREAKER A	11715-1.27-402A	AUX	280'	RCD	S R	--	CLOSED	OPEN	YES	N/A		N/A	
1251	2	02	1-EE-BKR-BYB	CR*/REACTOR TRIP BREAKER B	11715-1.27-402A	AUX	280'	RCD	S R	--	CLOSED	OPEN	YES	N/A		N/A	
6011	1	02	1-EE-SS-01	EE/480V EMERGENCY BUS 1H	11715-FE-001A1/21/B2	SB	254'	9/C	S R	41	N/A	N/A	YES	N/A		1-BY-B-01,-02;1-EE-ST-1H	
6013	2	02	1-EE-SS-02	EE/480V EMERGENCY BUS 1J	11715-FE-001A1/21/B2	SB	254'	8/C	S R	41	N/A	N/A	YES	N/A		1-BY-B-03,-04;1-EE-ST-1J	
6012	1	02	1-EE-SS-03	EE/480V EMERGENCY BUS 1H1	11715-FE-001A1/21/B2	AUX	280'	RCD	S R	--	N/A	N/A	YES	N/A		1-BY-B-01,-02;1-EE-ST-03	
6014	2	02	1-EE-SS-04	EE/480V EMERGENCY BUS 1J1	11715-FE-001A1/21/B2	AUX	280'	RCD	S R	--	N/A	N/A	YES	N/A		1-BY-B-03,-04;1-EE-ST-02	
6005	1	03	1-EE-SW-01	EE/4KV EMERGENCY BUS 1H (ORANGE)	11715-FE-008BC/13	SB	254'	7/D	S R	41	N/A	N/A	YES	11715-FE-01D/1B		EDG 1H;1-BY-B-01,-02	
6006	2	03	1-EE-SW-02	EE/4KV EMERGENCY BUS 1J (PURPLE)	11715-FE-008BP/12	SB	254'	8/D	S R	41	N/A	N/A	YES	11715-FE-01D/1B		EDG 1J;1-BY-B-01,-02	
6007	1	04	1-EE-ST-1H	EE/4160/480 SERVICE TRANSFORMER 1H	11715-FE-001A1/21/B3	SB	254'	9/D	S R	--	N/A	N/A	YES	N/A		1-EE-SW-01;EDG 1H	
6008	1	04	1-EE-ST-1H1	EE/4160/480 SERVICE TRANSFORMER 1H1	11715-FE-001A1/21/B2	AUX	280'	RCD	S R	--	N/A	N/A	YES	N/A		1-EE-SW-01;EDG 1H	
6009	2	04	1-EE-ST-1J	EE/4160/480 SERVICE TRANSFORMER 1J	11715-FE-001A1/21/B2	SB	254'	8/D	S R	--	N/A	N/A	YES	N/A		1-EE-SW-02;EDG 1J	
6010	2	04	1-EE-ST-1J1	EE/4160/480 SERVICE TRANSFORMER 1J1	11715-FE-001A1/21/B2	AUX	280'	RCD	S R	--	N/A	N/A	YES	N/A		1-EE-SW-02;EDG 1J	
5551	1	04	1-EE-TRAN-11N	/HEAT TRACE TRANSFORMER	11715-FE-001Q/21	AUX	269'	11/M	S R	--	ON	ON	YES	N/A		N/A	
5552	2	04	1-EE-TRAN-11R	/HEAT TRACE TRANSFORMER	11715-FE-001R/21	AUX	269'	--	S R	--	ON	ON	YES	N/A		N/A	
5553	1	04	1-EE-TRAN-12N	/HEAT TRACE TRANSFORMER	11715-FE-001N/16	AUX	269'	--	S R	--	ON	ON	YES	N/A		N/A	
5554	2	04	1-EE-TRAN-12R	/HEAT TRACE TRANSFORMER	11715-FE-001B/16	AUX	269'	--	S R	--	ON	ON	YES	N/A		N/A	

NORTH ANNA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
COMPOSITE SSEL  
(Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA1\_SSEL.DBF / 05/20/97 / 11:43:22  
Sort Criteria: Class, ID Number  
Filter Criteria: <none>  
Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN	CLASS	MARK NO	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elv.	LOCATION Rm or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQD?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
5555	1	04	1-EE-TRAN-13N	/HEAT TRACE TRANSFORMER	11715-FE-001B/16	AUX	284'	10/L	S	R --	ON	ON	YES	N/A	N/A	
5556	2	04	1-EE-TRAN-13R	/HEAT TRACE TRANSFORMER	11715-FE-001R/21	AUX	284'	8.7/G	S	R --	ON	ON	YES	N/A	N/A	
5557	1	04	1-EE-TRAN-14N	/HEAT TRACE TRANSFORMER	11715-FE-001Q/21	AUX	269'	9/LM	S	R --	ON	ON	YES	N/A	N/A	
5558	2	04	1-EE-TRAN-14R	/HEAT TRACE TRANSFORMER	11715-FE-001R/21	AUX	269'	9.7/LM	S	R --	ON	ON	YES	N/A	N/A	
5559	1	04	1-EE-TRAN-41N	/HEAT TRACE TRANSFORMER	11715-FE-001Q/21	AFPH	271'	--	S	R --	ON	ON	YES	N/A	N/A	
5560	2	04	1-EE-TRAN-41R	/HEAT TRACE TRANSFORMER	11715-FE-001R/21	AFPH	271'	--	S	R --	ON	ON	YES	N/A	N/A	
6028	1	04	1-EP-TRAN-79A	EP/480/120 VOLT. REG. TRANSFORMER (79A)	11715-FE-001AE1/13	SB	252'	9/D	S	R --	N/A	N/A	YES	N/A	1-EP-MC-10	
6029	1	04	1-EP-TRAN-79B	EP/480/120 VOLT. REG. TRANSFORMER (79B)	11715-FE-001AE1/13	SB	252'	9/D	S	R --	N/A	N/A	YES	N/A	1-EP-MC-10	
6030	2	04	1-EP-TRANS-80	EP/480/240 VOLT. REG. TRANSFORMER (80)	11715-FE-001AE1/13	SB	252'	9/D	S	R --	N/A	N/A	YES	11715-FE-009GS/17	1-EP-MC-11	
6031	1	04	TRANS-118*	EP/480/120 SEMI-VITAL TRANSFORMER (118)	11715-FE-001AE1/13	SB	254'	EMER SWGR	S	R --	N/A	N/A	YES	N/A	1-EP-MC-41	
6033	2	04	TRANS-119*	EP/480/120 SEMI-VITAL TRANSFORMER (119)	11715-FE-001AE1/13	SB	254'	EMER SWGR	S	R --	N/A	N/A	YES	N/A	1-EP-MC-22	
6032	1	04	TRANS-70*	EP/480/120 SEMI-VITAL TRANSFORMER (70)	11715-FE-001AE1/13	SB	277'	8/D	S	R --	N/A	N/A	YES	N/A	1-EP-MC-10	
6034	2	04	TRANS-71*	EP/480/120 SEMI-VITAL TRANSFORMER (71)	11715-FE-001AE1/13	SB	277'	8/D	S	R --	N/A	N/A	YES	11715-FE-009GS/17	1-EP-MC-11	
5001	1	05	1-CC-P-1A	CC/COMPONENT COOLING WATER PUMP	11715-FM-079A1/17/E7	AUX	245'	8.7/GH	S	R 1	ON	ON	YES	N/A	N/A	
5005	1	05	1-CC-P-1B	CC/COMPONENT COOLING WATER PUMP	11715-FM-079A1/17/D7	AUX	245'	8.7/GH	S	R 1	ON	ON	YES	N/A	N/A	
1059	1	05	1-CH-P-1A	CH/CENTRIFUGAL CHARGING PUMP A; (CCP A)	11715-FM-095B2/24/C4	AUX	245'	9.5/J	S	R --	ON	ON	YES	N/A	N/A	
1060	2	05	1-CH-P-1B	CH/CENTRIFUGAL CHARGING PUMP B; (CCP B)	11715-FM-095B2/24/C6	AUX	245'	9.5/J	S	R --	ON	ON	YES	N/A	N/A	
1061	3	05	1-CH-P-1C	CH/CENTRIFUGAL CHARGING PUMP C; (CCP C)	11715-FM-095B2/24/C8	AUX	245'	9.5/J	S	R --	ON	ON	YES	N/A	N/A	
1161	1	05	1-CH-P-2A	CH/BORIC ACID TRANSFER PUMP (BATP)	11715-FM-095A1/22/B4	AUX	261'	9.5/HJ	S	R --	ON	ON	YES	N/A	N/A	
1162	2	05	1-CH-P-2B	CH/BORIC ACID TRANSFER PUMP (BATP)	11715-FM-095A1/22/B5	AUX	261'	9.5/HJ	S	R --	OFF	ON	YES	N/A	N/A	
5482	1	05	1-EG-P-1HA	EG/EDG 1H LEAD FO TRANSFER PUMP	11715-FB-035A2/21/B7	FOPH	270'	--	S	R --	OFF	RUNNING	YES	N/A	N/A	
5483	2	05	1-EG-P-1HB	EG/EDG 1H STANDBY FO TRANSFER PUMP	11715-FB-035A2/21/B6	FOPH	270'	--	S	R --	OFF	RUNNING	YES	N/A	N/A	



NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA1\_SSEL.DBF / 05/20/97 / 11:45:22  
 Sort Criteria: Class, ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING DWG. NO./REV.	SYS. & SUPPORTING COMPONENTS	REQ'D INTERCONNECTIONS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10) (11)	(12)	(13)	(14)	(15)	(16)	(17)	
546	05	1-EG-P-1JA	EG/EDG 1J LEAD FO TRANSFER PUMP	11715-FB-035A2/21/D7	FOPH	270'	--	S R	--	OFF	RUNNING	YES	N/A	N/A	N/A	
5485	2	1-EG-P-1JB	EG/EDG 1J STANDBY FO TRANSFER PUMP	11715-FB-035A2/21/D6	FOPH	270'	--	S R	--	OFF	RUNNING	YES	N/A	N/A	N/A	
5515	1	1-EG-P-609H	EG/DC FUEL OIL PUMP	11715-1.30-212C	SB	270'	EDG	S R	36,29	OFF	RUNNING	YES	N/A	EDG-1H		
5516	2	1-EG-P-609J	EG/DC FUEL OIL PUMP	11715-1.30-212C	SB	270'	EDG	S R	36,29	OFF	RUNNING	YES	N/A	EDG-1J		
5511	1	1-EG-P-610H	EG/ENGINE DRIVEN FO PUMP	11715-1.30-212C	SB	270'	EDG	S	36,29	OFF	RUNNING	NO	N/A	EDG-1H		
5512	2	1-EG-P-610J	EG/ENGINE DRIVEN FO PUMP	11715-1.30-212C	SB	270'	EDG	S	36,29	OFF	RUNNING	NO	N/A	EDG-1J		
4140	1	1-FW-P-2	FW/TURBINE-DRIVEN AUXILIARY FEEDWATER PUMP (TDAFWP)	11715-FM-074A3/29/B8	AFPH	274'	--	S	--	OFF	RUNNING	YES	N/A	N/A	N/A	
4133	2	1-FW-P-3A	FW/MOTOR-DRIVEN AUXILIARY FEEDWATER PUMP (MDAFWP)	11715-FM-074A3/29/B6	AFPH	274'	--	S R	--	OFF	RUNNING	YES	N/A	N/A	N/A	
4127	2	1-FW-P-3B	FW/MOTOR-DRIVEN AUXILIARY FEEDWATER PUMP (MDAFWP)	11715-FM-074A3/29/B5	AFPH	275'	--	S R	--	OFF	RUNNING	YES	N/A	N/A	N/A	
7003	1	1-QS-P-1A	QS/QS PUMP A	11715-FM-091A2/23/B5	QSPH	274'	4/H	S R	I	OFF	ON	YES	N/A	1-EE-SS-03		
7006	2	1-QS-P-1B	QS/QS PUMP B	11715-FM-091A2/23/B4	QSPH	274'	4/H	S R	I	OFF	ON	YES	N/A	1-EE-SS-04		
7037	2	1-RS-P-3A	RS/CASING COOLING PUMP A	11715-FM-091B1/05/B7	CSCPH	271'	NOTE 1Y	S R	I	OFF	ON	YES	N/A	1-EP-MC-20		
7040	2	1-RS-P-3B	RS/CASING COOLING PUMP B	11715-FM-091B1/05/B6	CSCPH	271'	NOTE 1AA	S R	I	OFF	ON	YES	N/A	1-EP-MC-22		
5229	1	1-SW-P-10	SW/RADIATION MONITORING PUMP	11715-FM-078A4/43/E3	TB	254'	--	R	I	OFF	OFF	NO	N/A	N/A	N/A	
7035E	1	1-SW-P-5	SW/RADIATION MONITORING PUMP	11715-FM-078B1/20/C4	QSPH	265'	--	S	I	OFF	OFF	NO	N/A	N/A	N/A	
7035F	1	1-SW-P-6	SW/RADIATION MONITORING PUMP	11715-FM-078B1/20/C5	QSPH	265'	--	S	I	OFF	OFF	NO	N/A	N/A	N/A	
7035G	2	1-SW-P-7	SW/RADIATION MONITORING PUMP	11715-FM-078B1/20/C6	QSPH	265'	--	S	I	OFF	OFF	NO	N/A	N/A	N/A	
7035H	2	1-SW-P-8	SW/RADIATION MONITORING PUMP	11715-FM-078B1/20/C8	QSPH	265'	--	S	I	OFF	OFF	NO	N/A	N/A	N/A	
7035I	1	1-SW-P-9A	SW/RADIATION MONITORING PUMP	11715-FM-078C1/32/E3	AUX	263'	--	S	I	OFF	OFF	NO	N/A	N/A	N/A	
7035J	2	1-SW-P-9B	SW/RADIATION MONITORING PUMP	11715-FM-078C1/32/E3	AUX	263'	--	S	I	OFF	OFF	NO	N/A	N/A	N/A	
5486	1	2-EG-P-2HA	EG/EDG 2H LEAD FO TRANSFER PUMP	11715-FB-035A2/21/E7	FOPH	270'	--	S R	--	OFF	RUNNING	YES	N/A	N/A	N/A	
5487	2	2-EG-P-2HB	EG/EDG 2H STANDBY FO TRANSFER PUMP	11715-FB-035A2/21/E6	FOPH	270'	--	S R	--	OFF	RUNNING	YES	N/A	N/A	N/A	
5488	1	2-EG-P-2JA	EG/EDG 2J LEAD FO TRANSFER PUMP	11715-FB-035A2/21/F7	FOPH	270'	--	S R	--	OFF	RUNNING	YES	N/A	N/A	N/A	
5489	2	2-EG-P-2JB	EG/EDG 2J STANDBY FO TRANSFER PUMP	11715-FB-035A2/21/F6	FOPH	270'	--	S R	--	OFF	RUNNING	YES	N/A	N/A	N/A	
5517	1	2-EG-P-709H	EG/DC FUEL OIL PUMP	11715-1.30-212C	SB	270'	EDG	S R	36,29	OFF	RUNNING	YES	N/A	EDG-2H		

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA1\_SSEL.DBF / 05/20/97 / 11:43:22  
 Sort Criteria: Class, ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	TRAIN	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No /Rev./Zone	Building	EQUIPMENT Flr. Elv.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
5518	2	05	2-EG-P-709J	EG/DC FUEL OIL PUMP	11715-1.30-212C	SB	270'	EDG	S R	36,29	OFF	RUNNING	YES	N/A	EDG-2J	
5513	1	05	2-EG-P-710H	EG/ENGINE DRIVEN FO PUMP	11715-1.30-212C	SB	270'	EDG	S	36,29	OFF	RUNNING	NO	N/A	EDG-2H	
5514	2	05	2-EG-P-710J	EG/ENGINE DRIVEN FO PUMP	11715-1.30-212C	SB	270'	EDG	S	36,29	OFF	RUNNING	NO	N/A	EDG-2J	
5449C	1	06	1-HV-P-20A	HV/CHILLED WATER PUMP	11715-FB-040A1/13	SB	254'	CHILLER RM	S R	--	RUNNING	RUNNING	YES	N/A	N/A	
5449I	2	06	1-HV-P-20B	HV/CHILLED WATER PUMP	11715-FB-040A1/13	SB	254'	CHILLER RM 5/D	S R	--	RUNNING	RUNNING	YES	N/A	N/A	
5449Z2	2	06	1-HV-P-20C	HV/CHILLED WATER PUMP	11715-FB-040A1/13/DS	SB	254'	CHILLER RM 5/D	S R	--	OFF	RUNNING	YES	N/A	N/A	
5428	1	06	1-HV-P-22A	HV/CR & RR WATER SYSTEM BOOSTER PUMP	11715-FB-040D1/15/E6	SB	254'	CHILLER RM	S R	--	ON	ON	YES	N/A	N/A	
5429	1	06	1-HV-P-22B	HV/CR & RR WATER SYSTEM BOOSTER PUMP	11715-FB-040D1/15/B6	SB	254'	CHILLER RM	S R	--	ON	ON	YES	N/A	N/A	
5430	2	06	1-HV-P-22C	HV/CR & RR WATER SYSTEM BOOSTER PUMP	11715-FB-040D1/15/D6	SB	254'	CHILLER RM	S R	--	OFF	ON	YES	N/A	N/A	
4246	1	06	1-RH-P-1A	RH/RHR PUMP A	11715-FM-094A1/14/D7	CONTMT	231'	RHR Flat	S R	--	OFF	RUNNING	YES	11715-FM-001D	N/A	
4249	2	06	1-RH-P-1B	RH/RHR PUMP B	11715-FM-094A1/14/D4	CONTMT	231'	RHR Flat	S R	--	OFF	RUNNING	YES	11715-FM-001D	N/A	
7012	1	06	1-RS-P-1A	RS/INSIDE RECIRC SPRAY PUMP A	11715-FM-091A3/20/B7	CONTMT	217'	12	S R	I	OFF	ON	YES	N/A	1-EE-SS-03	
7017	1	06	1-RS-P-1B	RS/INSIDE RECIRC SPRAY PUMP B	11715-FM-091A3/20/B4	CONTMT	217'	12	S R	I	OFF	ON	YES	N/A	1-EE-SS-04	
7023	2	06	1-RS-P-2A	RS/OUTSIDE RECIRC SPRAY PUMP A	11715-FM-091A4/24/B4	SFGD	267'	3.2/LM	S R	I	OFF	ON	YES	N/A	1-EE-SS-01	
7028	2	06	1-RS-P-2B	RS/OUTSIDE RECIRC SPRAY PUMP B	11715-FM-091A4/24/B3	SFGD	267'	3.5/JK	S R	I	OFF	ON	YES	N/A	1-EE-SS-02	
7009	1	06	1-SI-P-1A	SI/LHSI PUMP A	11715-FM-096A1/28/C6	SFGD	255'	3.2/LM	S R	I	OFF	ON	YES	N/A	1-EE-SW-01	
7011	2	06	1-SI-P-1B	SI/LHSI PUMP B	11715-FM-096A1/28/C4	SFGD	255'	3.5/JK	S R	I	OFF	ON	YES	N/A	1-EE-SW-02	
5159	1	06	1-SW-P-1A	SW/SERVICE WATER PUMP A	11715-FM-078A3/28/D7	SWPH	328'	SWPH	S R	--	RUNNING	RUNNING	YES	N/A	N/A	
5160	2	06	1-SW-P-1B	SW/SERVICE WATER PUMP B	11715-FM-078A3/28/D5	SWPH	328'	SWPH	S R	--	OFF	RUNNING	YES	N/A	N/A	
5161	1	06	2-SW-P-1A	SW/SERVICE WATER PUMP A	11715-FM-078A3/28/D4	SWPH	328'	SWPH	S R	--	RUNNING	RUNNING	YES	N/A	N/A	
5162	2	06	2-SW-P-1B	SW/SERVICE WATER PUMP B	11715-FM-078A3/28/D3	SWPH	328'	SWPH	S R	--	OFF	RUNNING	YES	N/A	N/A	
7159	1	07	1-AS-FCV-100A	AS/AIR EJECTOR STM INLET ISOL	11715-FM-072A2/20/E5	TB	279'	8/Z	S	I	OPEN	CLOSED	NO	11715-AS-006/4	1-AS-SOV-100A	
7161	1	07	1-AS-FCV-100B	AS/AIR EJECTOR STM INLET ISOL	11715-FM-072A2/20/E5	TB	279'	8/C	S	I	OPEN	CLOSED	NO	11715-AS-007/4	1-AS-SOV-100B	
7107	1	07	1-BD-TV-100A	BD/SG BLOWDOWN CONTMT ISOL	11715-FM-098A2/16/C5	AUX	244'	7/J	S	I	OPEN	CLOSED	NO	11715-BD-001/6	1-BD-SOV-100A	

NORTH ANNA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
COMPOSITE SSEL  
(Sorted by Equipment Class and Mark Number)

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Sort Criteria: Class, ID Number  
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Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No /Rev./Zone	Building	EQUIPMENT Flr. Elv.	LOCATION Rm or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D	SUPPORTING SYS. DWG. NO./REV.	REQ'D & SUPPORTING COMPONENTS	INTERCONNECTIONS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10) (11)	(12)	(13)	(14)	(15)	(16)	(17)	
7109	2	07	1-BD-TV-100B	BD/SG BLOWDOWN CONTMT ISOL	11715-FM-098A2/16/C6	CONTMT	241'	8	S	I	OPEN	CLOSED	NO	11715-BD-002/10	1-BD-SOV-100B	
7111	1	07	1-BD-TV-100C	BD/SG BLOWDOWN CONTMT ISOL	11715-FM-098A3/15/C5	AUX	244'	7/J	S	I	OPEN	CLOSED	NO	11715-BD-003/6	1-BD-SOV-100C	
7113	2	07	1-BD-TV-100D	BD/SG 1B BLOWDOWN CONTMT ISOL	11715-FM-098A3/15/C6	CONTMT	241'	8	S	I	OPEN	CLOSED	NO	11715-BD-004/10	1-BD-SOV-100D	
7115	2	07	1-BD-TV-100E	BD/SG 1C BLOWDOWN CONTMT ISOL	11715-FM-098A4/17/D4	AUX	244'	7/J	S	I	OPEN	CLOSED	NO	11715-BD-005/6	1-BD-SOV-100E	
7117	2	07	1-BD-TV-100F	BD/SG 1C BLOWDOWN CONTMT ISOL	11715-FM-098A4/17/C6	CONTMT	241'	8	S	I	OPEN	CLOSED	NO	11715-BD-006/10	1-BD-SOV-100F	
7211	2	07	1-CC-TV-100A	CC/CC RETURN FROM COOLING COIL CONTMT ISOL	11715-FM-079D4/22/E4	AUX	244'	6/K	S	I	OPEN	CLOSED	NO	11715-CC-071/4	1-CC-SOV-100A	
7213	2	07	1-CC-TV-100B	CC/CC RETURN FROM COOLING COIL CONTMT ISOL	11715-FM-079D4/22/D4	AUX	244'	6/J	S	I	OPEN	CLOSED	NO	11715-CC-072/4	1-CC-SOV-100B	
7215	2	07	1-CC-TV-100C	CC/CC RETURN FROM COOLING COIL CONTMT ISOL	11715-FM-079D4/22/C4	AUX	244'	6/K	S	I	OPEN	CLOSED	NO	11715-CC-073/4	1-CC-SOV-100C	
7217	1	07	1-CC-TV-101A	CC/THERMAL BARRIER DISCH CONTMT ISOL	11715-FM-079B1/21/D7	AUX	244'	7/K	S	I	OPEN	CLOSED	NO	11715-CC-067/5	1-CC-SOV-101A	
7219	2	07	1-CC-TV-101B	CC/THERMAL BARRIER DISCH CONTMT ISOL	11715-FM-079B1/21/D6	CONTMT	241'	8	S	I	OPEN	CLOSED	NO	11715-CC-074/5	1-CC-SOV-101B	
7221	1	07	1-CC-TV-102A	CC/RCP CC RETURN CONTMT ISOL	11715-FM-079B4/20/A5	AUX	244'	6.5/J	S	I	OPEN	CLOSED	NO	11715-CC-078/4	1-CC-SOV-102A	
7223	2	07	1-CC-TV-102B	CC/RCP CC RETURN CONTMT ISOL	11715-FM-079B4/20/A3	CONTMT	241'	8	S	I	OPEN	CLOSED	NO	11715-CC-075/8	1-CC-SOV-102B	
7225	1	07	1-CC-TV-102C	CC/RCP CC RETURN CONTMT ISOL	11715-FM-079B3/20/A5	AUX	244'	6.5/J	S	I	OPEN	CLOSED	NO	11715-CC-079/5	1-CC-SOV-102C	
7227	2	07	1-CC-TV-102D	CC/RCP CC RETURN CONTMT ISOL	11715-FM-079B3/20/A3	CONTMT	241'	8	S	I	OPEN	CLOSED	NO	11715-CC-076/6	1-CC-SOV-102D	
7229	1	07	1-CC-TV-102E	CC/RCP CC RETURN CONTMT ISOL	11715-FM-079B2/21/A5	AUX	244'	6.5/J	S	I	OPEN	CLOSED	NO	11715-CC-080/4	1-CC-SOV-102E	
7231	2	07	1-CC-TV-102F	CC/RCP CC RETURN CONTMT ISOL	11715-FM-079B2/21/A3	CONTMT	241'	8	S	I	OPEN	CLOSED	NO	11715-CC-077/6	1-CC-SOV-102F	
5092	1	07	1-CC-TV-103A	CC/RHR HX OUTLET CONTMT ISOL	11715-FM-079B1/21/A7	AUX	252'	7/L	--	A,27	OPEN	OPEN	NO	11715-CC-081/4	1-CG-SOV-103A	
5092	1	07	1-CC-TV-103A	CC/RHR HX OUTLET CONTMT ISOL	11715-FM-079B1/21/A7	AUX	252'	7/L	S	I,27	OPEN	CLOSED	NO	11715-CC-081/4	1-CC-SOV-103A	
5100	2	07	1-CC-TV-103B	CC/RHR HX OUTLET CONTMT ISOL	11715-FM-079B1/21/B7	AUX	252'	7/L	S	I,27	OPEN	CLOSED	NO	11715-CC-082/4	1-CC-SOV-103B	
5100	1	07	1-CC-TV-103B	CC/RHR HX OUTLET CONTMT ISOL	11715-FM-079B1/21/B7	AUX	252'	7/L	--	A,27	OPEN	OPEN	NO	11715-CC-082/4	1-CC-SOV-103B	
7237	1, 2	07	1-CC-TV-104A	CC/RCP CC CONTMT ISOL	11715-FM-079B2/21/E8	AUX	244'	6.5/J	S	I	OPEN	CLOSED	NO	11715-CC-083/4	1-CC-SOV-104A1 1-CC-SOV-104A2	
7241	1, 2	07	1-CC-TV-104B	CC/RCP CC CONTMT ISOL	11715-FM-079B3/20/E8	AUX	244'	6/J	S	I	OPEN	CLOSED	NO	11715-CC-084/4	1-CC-SOV-104B1 1-CC-SOV-104B2	
7245	1, 2	07	1-CC-TV-104C	CC/RCP CC CONTMT ISOL	11715-FM-079B4/20/E8	AUX	244'	6.5/J	S	I	OPEN	CLOSED	NO	11715-CC-085/4	1-CC-SOV-104C1 1-CC-SOV-104C2	

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 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
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 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	TRAIN	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQD?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
7249	1	07	1-CC-TV-105A	CC/CC RETURN FROM COOLING COIL CONTMT ISOL	11715-FM-079D4/22/E4	CONTMT	241'	8	S	I	OPEN	CLOSED	NO	11715-CC-086/7	1-CC-SOV-105A	
7251	1	07	1-CC-TV-105B	CC/CC RETURN FROM COOLING COIL CONTMT ISOL	11715-FM-079D4/22/D4	CONTMT	241'	8	S	I	OPEN	CLOSED	NO	11715-CC-087/B	1-CC-SOV-105B	
7253	1	07	1-CC-TV-105C	CC/CC RETURN FROM COOLING COIL CONTMT ISOL	11715-FM-079D4/22/C4	CONTMT	241'	8	S	I	OPEN	CLOSED	NO	11715-CC-088/B	1-CC-SOV-105C	
1169	2	07	1-CH-FCV-1113A	CH/BAST TO VCT CONTROL	11715-FM-095B1/21/C3	AUX	278'	8.5/J	--	A,3	OPEN	OPEN	YES	11715-CH-017/11	1-CH-SOV-1113A1;1-CH-SOV-1113A2	
1169	2	07	1-CH-FCV-1113A	CH/BAST TO VCT CONTROL	11715-FM-095B1/21/C3	AUX	278'	8.5/J	S	1,3	OPEN	CLOSED	NO	11715-CH-017/11	1-CH-SOV-1113A1 1-CH-SOV-1113A2	
1075	1	07	1-CH-FCV-1122	CH/CHARGING FLOW TO REGEN HX	11715-FM-095C1/14/C4	AUX	245'	12/H	--	--	OPEN	OPEN	NO	11715-CH-001/7	1-CH-E/P-1122;1-CH-FT-1122	
1200	2	07	1-CH-HCV-1137	CH/EXCESS LETDOWN HX ISOL	11715-FM-095C1/14/C7	CONTMT	233'	6	--	28	CLOSED	CLOSED	NO	11715-CH-077/3 11715-FK-001A	1-CH-E/P-HCV-1137	
1091	1	07	1-CH-HCV-1186	CH/ECP TO RCP SEAL INJECTION	11715-FM-095C2/13/F4	AUX	245'	8.5/L	--	--	OPEN	OPEN	NO	11715-CH-068/1	N/A	
1197	2	07	1-CH-HCV-1201	CH/EXCESS LETDOWN HX ISOL	11715-FM-095C1/34/C6	CONTMT	236'	6	--	28	CLOSED	CLOSED	NO	11715-CH-079/3 11715-FK-001D	1-CH-SOV-1201	
1105	1, 2	07	1-CH-HCV-1303A	CH/SEAL LEAKOFF ISOL RCP-1	11715-FM-095C2/13/E8	CONTMT	219'	18.5	--	21	OPEN	OPEN	NO	11715-CH-065/3; 11715-FK-001E	N/A	
1106	1, 2	07	1-CH-HCV-1303B	CH/SEAL LEAKOFF ISOL RCP-2	11715-FM-095C2/13/E6	CONTMT	219'	11.5	--	21	OPEN	OPEN	NO	11715-CH-066/3; 11715-FK-001D	N/A	
1107	1, 2	07	1-CH-HCV-1303C	CH/SEAL LEAKOFF ISOL RCP-3	11715-FM-095C2/13/E5	CONTMT	219'	7	--	21	OPEN	OPEN	NO	11715-CH-067/3; 11715-FK-001D	N/A	
1117	2	07	1-CH-HCV-1307	CH/SEAL BYPASS OUTLET ISOL	11715-FM-095C2/13/E4	CONTMT	255' A	8.5	--	--	CLOSED	CLOSED	NO	11715-CH-074/4; 11715-FK-001D	1-CH-SOV-1307	
1084	1	07	1-CH-HCV-1310	CH/CHARGING TO LOOP 2 ISOL	11715-FM-095C1/14/F6	CONTMT	222'	11.5	--	--	OPEN	OPEN	NO	11715-FK-001D	1-CH-SOV-1310	
2006	1, 2	07	1-CH-HCV-1311	CH/AUX SPRAY ISOL	11715-FM-095C1/14/E6	CONTMT	220'	11	--	28	CLOSED	CLOSED	NO	11715-CH-003/4; 11715-FK-001D	1-CH-SOV-1311	
1206	2	07	1-CH-HCV-1389	CH/EXCESS LETDOWN FLOW DIRECTING	11715-FM-095C1/14/C6	CONTMT	234'	6	--	--	VCT	VCT	NO	11715-CH-075/3; 11715-FK-01D/11	N/A	
7131	1	07	1-CH-TV-1204A	CH/LETDOWN LINE CONTMT ISOL	11715-FM-095C1/14/E3	CONTMT	241'	8	--	I	CLOSED	CLOSED	NO	11715-CH-100/1	1-CH-SOV-1204A	
7132	2	07	1-CH-TV-1204B	CH/LETDOWN LINE CONTMT ISOL	11715-FM-095A4/17/B3	AUX	245'	6.5/J	S	I	OPEN	CLOSED	NO	11715-CH-070/5	1-CH-SOV-1204B	
7139	1	07	1-CV-TV-150A	CV/ATMOS CLEANUP CONTMT ISOL	11715-FM-092A2/13/B4	AUX	244'	6/J	S	I	OPEN	CLOSED	NO	11715-CV-002/6	1-CV-SOV-150A	
7141	2	07	1-CV-TV-150B	CV/ATMOS CLEANUP CONTMT ISOL	11715-FM-092A2/13/B5	AUX	244'	6/J	S	I	OPEN	CLOSED	NO	11715-CV-003/7	1-CV-SOV-150B	

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(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
7143	1	07	1-CV-TV-150C	CV/ATMOS CLEANUP CONTMT ISOL	11715-FM-092A2/13/B4	AUX	244'	6/J	S	I	OPEN	CLOSED	NO	11715-CV-004/7	1-CV-SOV-150C	
7145	2	07	1-CV-TV-150D	CV/ATMOS CLEANUP CONTMT ISOL	11715-FM-092A2/13/C5	AUX	244'	6/J	S	I	OPEN	CLOSED	NO	11715-CV-005/6	1-CV-SOV-150D	
7147	1	07	1-DA-TV-100A	DA/SUMP DISCH CONTMT ISOL	11715-FM-090A1/15/E7	AUX	243'	6/J	--	I	CLOSED	CLOSED	NO	N/A	1-DA-SOV-100A	
7149	2	07	1-DA-TV-100B	DA/SUMP DISCH CONTMT ISOL	11715-FM-090A1/16/C3	CONTMT	241'	9	--	I	CLOSED	CLOSED	NO	11715-DA-019/7	1-DA-SOV-100B	
7151	1	07	1-DG-TV-100A	DG/PRIMARY DRAIN XFER CONTMT ISOL	11715-FM-090C1/17/B8	AUX	244'	7/J	--	I	CLOSED	CLOSED	NO	11715-DG-006/5	1-DG-SOV-100A	
7153	2	07	1-DG-TV-100B	DG/PRIMARY DRAIN XFER CONTMT ISOL	11715-FM-090C1/17/B7	CONTMT	241'	7	--	I	CLOSED	CLOSED	NO	11715-DG-005/5	1-DG-SOV-100B	
4210A		07	1-FW-FCV-1478	FLOW CONTROL TO S/G 1A			SB	294'			4/D	S	R	OPEN	CLOSED	
4211A		07	1-FW-FCV-1479	A MFW REG VALVE BYPASS FLOW CONTROL VALVE			SB	294'			3/D	S	R	45	CLOSED	CLOSED
4210B		07	1-FW-FCV-1488	FLOW CONTROL TO S/G 1B			SB	294'			4/D	S	R	OPEN	CLOSED	
4211B		07	1-FW-FCV-1489	B MFW REG VALVE BYPASS FLOW CONTROL VALVE			SB	294'			3/D	S	R	45	CLOSED	CLOSED
4210C		07	1-FW-FCV-1498	FLOW CONTROL TO S/G 1C			SB	294'			4/D	S	R	OPEN	CLOSED	
4211C		07	1-FW-FCV-1499	C MFW REG VALVE BYPASS FLOW CONTROL VALVE			SB	294'			3/D	S	R	45	CLOSED	CLOSED
4169	1	07	1-FW-HCV-100A	FW/AFWP HEADER TO SG A	11715-FM-074A1/32/A5	AFPH	275'	--	S	--	CLOSED	OPEN	NO	11715-FW-055/4	N/A	
4166	2	07	1-FW-HCV-100B	FW/AFWP HEADER TO SG B	11715-FM-074A1/32/A6	AFPH	275'	--	S	--	CLOSED	OPEN	NO	11715-FW-056/4	N/A	
4161	2	07	1-FW-HCV-100C	FW/AFWP HEADER TO SG C	11715-FM-074A1/32/A7	AFPH	275'	--	--	--	OPEN	OPEN	NO	11715-FW-057/6	N/A	
4145	2	07	1-FW-PCV-159A	FW/AFWP TO SG B CONTROL VALVE	11715-FM-074A3/29/F8	AFPH	271'	--	S	--	OPEN	OPEN	NO	N/A	N/A	
4150	2	07	1-FW-PCV-159B	FW/AFWP TO SG C CONTROL VALVE	11715-FM-074A3/29/E8	AFPH	271'	--	S	--	OPEN	OPEN	NO	N/A	N/A	
2038	2	07	1-GN-PCV-125A-1	GN/PZR PORV N2 SUPPLY PRESSURE REDUCING VALVE	11715-FM-105A1/20/E6	CONTMT	308'	9.1	S	--	OPEN	OPEN	NO	N/A	N/A	
2039	2	07	1-GN-PCV-125A-2	GN/PZR PORV N2 SUPPLY PRESSURE REDUCING VALVE	11715-FM-105A1/20/E6	CONTMT	308'	9.1	S	--	OPEN	OPEN	NO	N/A	N/A	
2035	2	07	1-GN-PCV-125A-3	GN/PZR PORV N2 SUPPLY PRESSURE REDUCING VALVE	11715-FM-105A1/20/E6	CONTMT	308'	9	S	--	OPEN	OPEN	NO	N/A	N/A	
2036	1	07	1-GN-PCV-125B-1	GN/PZR PORV N2 SUPPLY PRESSURE REDUCING VALVE	11715-FM-105A1/20/E4	CONTMT	308'	9	S	--	OPEN	OPEN	NO	N/A	N/A	
2037	1	07	1-GN-PCV-125B-2	GN/PZR PORV N2 SUPPLY PRESSURE REDUCING VALVE	11715-FM-105A1/20/E4	CONTMT	308'	9	S	--	OPEN	OPEN	NO	N/A	N/A	

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 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
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(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
2034	1	07	1-GN-PCV-125B-3	GN/PZR PORV N2 SUPPLY PRESSURE REDUCING VALVE	11715-FM-105A1/20/E4	308'	CONTMT 9	S		OPEN	OPEN	NO	N/A	N/A	
7043	1	07	1-HC-TV-104A	HS/CONTAINMENT ATM PURGE ISOL	11715-FMC-092A1/1/C4	244'	AUX 6/H	S R	1,24, 38	CLOSED	OPEN	YES	13075-HC-002/1	1-HC-SOV-104A	
7043	1	07	1-HC-TV-104A	HS/CONTAINMENT ATM PURGE ISOL	11715-FMC-092A1/1/C4	244'	AUX 6/H	R	1,24, 39	CLOSED	CLOSED	NO	13075-HC-002/1	1-HC-SOV-104A	
7045	1	07	1-HC-TV-104B	HC/CONTAINMENT ATM PURGE ISOL	11715-FMC-092A1/1/C4	244'	AUX 6/H	S R	1,24, 38	CLOSED	OPEN	YES	13075-HC-003/1	1-HC-SOV-104B	
7045	1	07	1-HC-TV-104B	HC/CONTAINMENT ATM PURGE ISOL	11715-FMC-092A1/1/C4	244'	AUX 6/H		1,24, 39	CLOSED	CLOSED	NO	13075-HC-003/1	1-HC-SOV-104B	
7052	1	07	1-HC-TV-105A	HC/CONTAINMENT ATM RETURN ISOL	11715-FMC-092A1/1/E7	244'	AUX 7/K	S	1,24, 38	CLOSED	OPEN	YES	13075-HC-004/1	1-HC-SOV-105A	
7052	1	07	1-HC-TV-105A	HC/CONTAINMENT ATM RETURN ISOL	11715-FMC-092A1/1/E7	244'	AUX 7/K		1,24, 39	CLOSED	CLOSED	NO	13075-HC-004/1	1-HC-SOV-105A	
7050	1	07	1-HC-TV-105B	HC/CONTAINMENT ATM RETURN ISOL	11715-FMC-092A1/1/E7	244'	AUX 7/K	S	1,24, 38	CLOSED	OPEN	YES	11715-HC-005	1-HC-SOV-105B	
7050	1	07	1-HC-TV-105B	HC/CONTAINMENT ATM RETURN ISOL	11715-FMC-092A1/1/E7	244'	AUX 7/K		1,24, 39	CLOSED	CLOSED	NO	11715-HC-005	1-HC-SOV-105B	
7054	2	07	1-HC-TV-106A	HC/CONTAINMENT ATM PURGE ISOL	11715-FMC-092A1/1/C5	244'	AUX 6/J	S	1,24, 38	CLOSED	OPEN	YES	13075-HC-006/1	1-HC-SOV-106A	
7054	2	07	1-HC-TV-106A	HC/CONTAINMENT ATM PURGE ISOL	11715-FMC-092A1/1/C5	244'	AUX 6/J		1,24, 39	CLOSED	CLOSED	NO	13075-HC-006/1	1-HC-SOV-106A	
7056	2	07	1-HC-TV-106B	HC/CONTAINMENT ATM ISOL	11715-FMC-092A1/1/C5	244'	AUX 6/J	S	1,24, 38	CLOSED	OPEN	YES	13075-HC-007/1	1-HC-SOV-106B	
7056	2	07	1-HC-TV-106B	HC/CONTAINMENT ATM ISOL	11715-FMC-092A1/1/C5	244'	AUX 6/J		1,24, 39	CLOSED	CLOSED	NO	13075-HC-007/1	1-HC-SOV-106B	
7063	2	07	1-HC-TV-107A	HC/CONTAINMENT ATM RETURN ISOL	11715-FMC-092A1/1/C8	244'	AUX 7/J	S	1,24, 38	CLOSED	OPEN	YES	13075-HC-008/1	1-HC-SOV-107A	
7063	2	07	1-HC-TV-107A	HC/CONTAINMENT ATM RETURN ISOL	11715-FMC-092A1/1/C8	244'	AUX 7/J		1,24, 39	CLOSED	CLOSED	NO	13075-HC-008/1	1-HC-SOV-107A	
7061	2	07	1-HC-TV-107B	HC/CONTAINMENT ATM RETURN ISOL	11715-FMC-092A1/1/C8	244'	AUX 7/J	S	1,24, 38	CLOSED	OPEN	YES	13075-HC-009/1	1-HC-SOV-107B	
7061	2	07	1-HC-TV-107B	HC/CONTAINMENT ATM RETURN ISOL	11715-FMC-092A1/1/C8	244'	AUX 7/J		1,24, 39	CLOSED	CLOSED	NO	13075-HC-009/1	1-HC-SOV-107B	
1240	1, 2	07	1-HRS-TV-1623	HRS/RC COLD LEG SAMPLE COOLER ISOL	11715-FM-089D1/16/D4	259'	AUX 7.6/K	S	24	CLOSED	OPEN	NO	11715-HRS-014/3	1-HRS-SOV-1623	

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 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
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 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	STEM/EQUIPMENT DESCRIPTION	Dwg No./R/v./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1226	1, 2	07	1-HRS-TV-1625	HRS/HOT LEG SAMPLE COOLER INLET ISOL	11715-FM-089D1/16/E6	AUX	259'	7.6/K	S	24	CLOSED	OPEN	NO	11715-HRS-016/3	1-HRS-SOV-1625	
4268	1, 2	07	1-HRS-TV-1627	HRS/SAMPLING SYSTEM ISOL	11715-FM-089D1/16/F4	AUX	259'	7.6/K	S	24	CLOSED	OPEN	NO	N/A	1-HRS-SOV-1627	
4266	1, 2	07	1-HRS-TV-1628	SS/SAMPLING SYSTEM ISOL	11715-FM-108A1/03/E5	AUX	259'	--	--	--	CLOSED	CLOSED	NO	N/A	N/A	
5441	1	07	1-HV-PCV-1235A2	HV/CR & RR WATER SYSTEM FLOW CONTROL	11715-FB-040D1/15/E3	SB	--	AC RM	--	--	OPEN	OPEN	NO	11715-HV-058/2	N/A	
5442	1	07	1-HV-PCV-1235B2	HV/CR & RR WATER SYSTEM FLOW CONTROL	11715-FB-040D1/15/B3	SB	--	AC RM	--	--	OPEN	OPEN	NO	11715-HV-059/2	N/A	
5443	2	07	1-HV-PCV-1235C2	HV/CR & RR WATER SYSTEM FLOW CONTROL	11715-FB-040D1/15/D3	SB	--	AC RM	--	--	OPEN	OPEN	NO	11715-HV-060/2	N/A	
7255	1	07	1-IA-TV-102A	IA/INSTR AIR HEADER CONTMT ISOL	11715-FM-082N1/8/D3	AUX	244'	6/J	--	I	CLOSED	CLOSED	NO	11715-IA-015/3	1-IA-SOV-102A	
7257	2	07	1-IA-TV-102B	IA/INSTR AIR HEADER CONTMT ISOL	11715-FM-082N1/8/D3	AUX	244'	6/J	--	I	CLOSED	CLOSED	NO	11715-IA-016/3	1-IA-SOV-102B	
7163	1	07	1-LM-TV-100A	LM/LEAKAGE MONITORING CONTMT ISOL	11715-FM-092A1/15/E7	AUX	259'	6.5/J	S	I	OPEN	CLOSED	NO	11715-LM-001/5	1-LM-SOV-100A	
7165	2	07	1-LM-TV-100B	LM/LEAKAGE MONITORING CONTMT ISOL	11715-FM-092A1/15/E6	AUX	259'	6.5/J	S	I	OPEN	CLOSED	NO	11715-LM-002/5	1-LM-SOV-100B	
7167	1	07	1-LM-TV-100C	LM/LEAKAGE MONITORING CONTMT ISOL	11715-FM-092A1/15/E6	AUX	259'	6.5/JK	S	I	OPEN	CLOSED	NO	11715-LM-003/5	1-LM-SOV-100C	
7169	2	07	1-LM-TV-100D	LM/LEAKAGE MONITORING CONTMT ISOL	11715-FM-092A1/15/E5	AUX	259'	6.5/J	S	I	OPEN	CLOSED	NO	11715-LM-004/5	1-LM-SOV-100D	
7171	1	07	1-LM-TV-100E	LM/LEAKAGE MONITORING CONTMT ISOL	11715-FM-092A1/15/F6	AUX	259'	6.5/J	S	I	OPEN	CLOSED	NO	11715-LM-005/5	1-LM-SOV-100E	
7173	2	07	1-LM-TV-100F	LM/LEAKAGE MONITORING CONTMT ISOL	11715-FM-092A1/15/F5	AUX	259'	6.5/J	S	I	OPEN	CLOSED	NO	11715-LM-006/5	1-LM-SOV-100F	
7175	1	07	1-LM-TV-100G	LM/LEAKAGE MONITORING CONTMT ISOL	11715-FM-092A1/15/E7	AUX	259'	6/J	S	I	OPEN	CLOSED	NO	11715-LM-007/5	1-LM-SOV-100G	
7177	2	07	1-LM-TV-100H	LM/LEAKAGE MONITORING CONTMT ISOL	11715-FM-092A1/15/E6	AUX	259'	6/J	S	I,34	OPEN	CLOSED	NO	11715-LM-008	1-LM-SOV-100H	
7179	1	07	1-LM-TV-101A	LM/PRESS SENSOR CONTMT ISOL	11715-FM-092A1/15/D5	AUX	244'	7/J	S	I	OPEN	CLOSED	NO	11715-LM-017/5	1-LM-SOV-101A	
7181	2	07	1-LM-TV-101B	LM/PRESS SENSOR CONTMT ISOL	11715-FM-092A1/15/D5	AUX	246'	7/J	S	I	OPEN	CLOSED	NO	11715-LM-018/5	1-LM-SOV-101B	
7183	1	07	1-LM-TV-101C	LM/PRESS SENSOR CONTMT ISOL	11715-FM-092A1/15/D5	AUX	244'	7/J	S	I	OPEN	CLOSED	NO	11715-LM-017/5	1-LM-SOV-101C	
7185	2	07	1-LM-TV-101D	LM/PRESS SENSOR CONTMT ISOL	11715-FM-092A1/15/D4	AUX	246'	7/J	S	I	OPEN	CLOSED	NO	11715-LM-018/5	1-LM-SOV-101D	
4014	1	07	1-MS-PCV-101A	MS/SG A ATMOSPHERIC STEAM DUMP VALVE	11715-FM-070B1/19/E5	MSVH	306'	4.5/GA	S	R	25	CLOSED	OPEN	NO	11715-MS-012/7	INST AIR
4040	2	07	1-MS-PCV-101B	MS/SG B ATMOSPHERIC STEAM DUMP VALVE	11715-FM-070B2/19/E6	MSVH	306'	4/GD	S	R	25	CLOSED	OPEN	NO	11715-MS-013/9	INST AIR
4066	3	07	1-MS-PCV-101C	MS/SG C ATMOSPHERIC STEAM DUMP VALVE	11715-FM-070B3/23/E5	MSVH	308'	4.5/Gb	S	R	25	CLOSED	OPEN	NO	11715-MS-014/8	INST AIR

NORTH ANNA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
COMPOSITE SSEL  
(Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA1\_SSEL.DBF / 05/20/97 / 11:43:22  
Sort Criteria: Class, ID Number  
Filter Criteria: <none>  
Program File Name & Version: SSEL 2.2

LINE NO.	TRAIN	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
4009	1	07	1-MS-SV-101A	MS/SG A SAFETY VALVE	11715-FM-070B1/19/E6	MSVH	306'	--	S	1,8	CLOSED	CLOSED	NO	N/A	N/A	
4035	2	07	1-MS-SV-101B	MS/SG B SAFETY VALVE	11715-FM-070B2/19/D6	MSVH	306'	--	S	1,8	CLOSED	CLOSED	NO	N/A	N/A	
4061	3	07	1-MS-SV-101C	MS/SG C SAFETY VALVE	11715-FM-070B3/23/D6	MSVH	306'	--	S	1,8	CLOSED	CLOSED	NO	N/A	N/A	
4010	1	07	1-MS-SV-102A	MS/SG A SAFETY VALVE	11715-FM-070B1/19/E5	MSVH	306'	--	S	1,8	CLOSED	CLOSED	NO	N/A	N/A	
4036	2	07	1-MS-SV-102B	MS/SG B SAFETY VALVE	11715-FM-070B2/19/D5	MSVH	306'	--	S	1,8	CLOSED	CLOSED	NO	N/A	N/A	
4062	3	07	1-MS-SV-102C	MS/SG C SAFETY VALVE	11715-FM-070B3/23/D6	MSVH	306'	--	S	1,8	CLOSED	CLOSED	NO	N/A	N/A	
4011	1	07	1-MS-SV-103A	MS/SG A SAFETY VALVE	11715-FM-070B1/19/E6	MSVH	306'	--	S	1,8	CLOSED	CLOSED	NO	N/A	N/A	
4037	2	07	1-MS-SV-103B	MS/SG B SAFETY VALVE	11715-FM-070B2/19/D6	MSVH	306'	--	S	1,8	CLOSED	CLOSED	NO	N/A	N/A	
4063	3	07	1-MS-SV-103C	MS/SG C SAFETY VALVE	11715-FM-070B3/23/D6	MSVH	306'	--	S	1,8	CLOSED	CLOSED	NO	N/A	N/A	
4012	1	07	1-MS-SV-104A	MS/SG A SAFETY VALVE	11715-FM-070B1/19/E6	MSVH	306'	--	S	1,8	CLOSED	CLOSED	NO	N/A	N/A	
4038	2	07	1-MS-SV-104B	MS/SG B SAFETY VALVE	11715-FM-070B2/19/D6	MSVH	306'	--	S	1,8	CLOSED	CLOSED	NO	N/A	N/A	
4064	3	07	1-MS-SV-104C	MS/SG C SAFETY VALVE	11715-FM-070B3/23/D6	MSVH	306'	--	S	1,8	CLOSED	CLOSED	NO	N/A	N/A	
4013	1	07	1-MS-SV-105A	MS/SG A SAFETY VALVE	11715-FM-070B1/19/E5	MSVH	306'	--	S	1,8	CLOSED	CLOSED	NO	N/A	N/A	
4039	2	07	1-MS-SV-105B	MS/SG B SAFETY VALVE	11715-FM-070B2/19/D5	MSVH	306'	--	S	1,8	CLOSED	CLOSED	NO	N/A	N/A	
4065	3	07	1-MS-SV-105C	MS/SG C SAFETY VALVE	11715-FM-070B3/23/D5	MSVH	306'	--	S	1,8	CLOSED	CLOSED	NO	N/A	N/A	
4017	1, 2	07	1-MS-TV-101A	MS/SG A MSIV	11715-FM-070B1/19/C4	MSVH	285'	5.5/GB	S	--	OPEN	CLOSED	YES	11715-MS-110/8	1-MS-SOV-101A1,2,3,6,7	
4043	1, 2	07	1-MS-TV-101B	MS/SG B MSIV	11715-FM-070B2/19/C4	MSVH	285'	4.5/GB	S	--	OPEN	CLOSED	YES	11715-MS-111/9	1-MS-SOV-101B1,2,3,6,7	
4069	1, 2	07	1-MS-TV-101C	MS/SG C MSIV	11715-FM-070B3/23/C4	MSVH	285'	5/GB	S	--	OPEN	CLOSED	YES	11715-MS-112/9	1-MS-SOV-101C1,2,3,4,5,6,7	
7101	1	07	1-MS-TV-109	MS/STEAM DRAIN CONTMT ISOL	11715-FM-070A1/26/A8	MSVH	273'	4.5/GA	S	I	OPEN	CLOSED	NO	11715-MS-113/6	1-MS-SOV-109A 1-MS-SOV-109B	
7104	1	07	1-MS-TV-110	MS/SG BLOWDOWN CONTMT ISOL	11715-FM-070B3/23/A4	MSVH	271'	4.5/GA	S	I	OPEN	CLOSED	NO	11715-MS-114/3	1-MS-SOV-110A 1-MS-SOV-110B	
4083	1	07	1-MS-TV-111A	MS/TDAFW STEAM ADMISSION	11715-FM-070A3/26/E5	MSVH	274'	5.5	S	--	CLOSED	OPEN	NO	11715-MS-115/8	N/A	
4085	2	07	1-MS-TV-111B	MS/TDAFW STEAM ADMISSION	11715-FM-070A3/26/E4	MSVH	274'	5.5	S	--	CLOSED	OPEN	NO	11715-MS-116/10	N/A	
4099	1, 2	07	1-MS-TV-115	MS/TDAFW TRIP VALVE	11715-FM-070A3/26/C4	MSVH	274'	--	S	--	OPEN	OPEN	NO	N/A	N/A	
5119A	1	07	1-MS-LCV-101	MS/NEUTRON SHIELD SURGE TANK OUTLET ISOL	11715-FM-079B5/21/D3	CONTMT	262'	14	--	--	CLOSED	CLOSED	NO	N/A	N/A	



NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
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 Sort Criteria: Class, ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No /Rev./Zone	Building	EQUIPMENT Flr. Elv.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQD?	SUPPORTING SYS. DWG. NO /REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10) (11)	(12)	(13)	(14)	(15)	(16)	(17)	
1191	2	07	1-RC-HCV-1557A	RC/RC XS LETDOWN ISOL	11715-FM-093A1/19/E7	CONTMT	242'	1	A	--	28	CLOSED	CLOSED	NO	11715-RC-051/4 VIMS27749-27750 11715-FK-1E	1-RC-SOV-1557A
1193	2	07	1-RC-HCV-1557B	RC/RC XS LETDOWN ISOL	11715-FM-093A2/19/F7	CONTMT	243'	13	B	--	28	CLOSED	CLOSED	NO	11715-RC-052/4 VIMS28208-28211 11715-FK-1D	1-RC-SOV-1557B
1195	2	07	1-RC-HCV-1557C	RC/RC XS LETDOWN ISOL	11715-FM-093A3/22/F3	CONTMT	243'	7	5 C	--	28	CLOSED	CLOSED	NO	11715-RC-053/4 VIMS28616-28618 11715-FK-001D	1-RC-SOV-1557C
2020	2	07	1-RC-PCV-1455C	RC/PZR PORV	11715-FM-093B1/22/D3	CONTMT	308'	9	5	S	--	CLOSED	OP/CL	NO	11715-RC-111/12 11715-FK-001D	1-GN-SOV-1455C-1/2/3
2024	2	07	1-RC-PCV-1456	RC/PZR PORV	11715-FM-093B1/22/E3	CONTMT	308'	9	5	S	--	CLOSED	OP/CL	NO	11715-RC-109/11 11715-FK-001D	1-GN-SOV-1456-1/2/3
2007B	1, 2	07	1-RC-SV-1551A	RC/PRESSURIZER SAFETY VALVE A	11715-FM-093B1/22/E5	CONTMT	316'	9	5	S	1,5	CLOSED	CLOSED	NO	N/A	N/A
2007C	1, 2	07	1-RC-SV-1551B	RC/PRESSURIZER SAFETY VALVE B	11715-FM-093B1/22/E5	CONTMT	316'	9	5	S	1,5	CLOSED	CLOSED	NO	N/A	N/A
2007D	1, 2	07	1-RC-SV-1551C	RC/PRESSURIZER SAFETY VALVE C	11715-FM-093B1/22/E6	CONTMT	316'	9	5	S	1,5	CLOSED	CLOSED	NO	N/A	N/A
7137	1	07	1-RC-TV-1519A	RC/PRT PW FILL CONTMT ISOL	11715-FM-093B2/23/D8	AUX	244'	6	5	--	1	CLOSED	CLOSED	NO	11715-RC-036/6	1-RC-SOV-1519A
4259	1, 2	07	1-RH-FCV-1605	RH/RHR HX BYPASS	11715-FM-094A2/15/C7	CONTMT	234'	5		S	--	CLOSED	CLOSED	NO	11715-RH-004/6 11715-FK-001E	N/A
4257	1, 2	07	1-RH-HCV-1758	RH/RHR HX OUTLET	11715-FM-094A2/15/C5	CONTMT	228'	5		S R	--	OPEN	OP/CL	YES	11715-RH-005/4 VIMS 29912 11715-FK-001A	N/A
7187	1	07	1-RM-TV-100A	RM/RADIATION MONITORING RETURN CONTMT ISOL	11715-FM-082N3/8/C5	AUX	244'	7	J	S	I	OPEN	CLOSED	NO	11715-RM-024/4	1-RM-SOV-100A
7189	1	07	1-RM-TV-100B	RM/RADIATION MONITORING CONTMT ISOL	11715-FM-082N3/8/D5	AUX	244'	7	J	S	I	OPEN	CLOSED	NO	11715-RM-025/4	1-RM-SOV-100B
7191	2	07	1-RM-TV-100C	RM/RADIATION MONITORING CONTMT ISOL	11715-FM-082N3/8/D4	CONTMT	259'	8		S	I	OPEN	CLOSED	NO	11715-RM-026/7	1-RM-SOV-100C
7192	2	07	1-RM-TV-100D	RM/RADIATION MONITORING RETURN CONTMT ISOL	11715-FM-082N3/8/C5	AUX	245'	6	5/JK	S	I	OPEN	CLOSED	NO	11715-RM-027/4	1-RM-SOV-100D
2046	1, 2	07	1-SI-HCV-1850B	SI/ACCUM TEST ISOL	11715-FM-096B1/17/A6	CONTMT	221'	1	5	--	21,19	CLOSED	CLOSED	NO	11715-SI-022/3; 11715-FK-001E	1-SI-SOV-1850B
4273	1, 2	07	1-SI-HCV-1850D	SI/ACCUM TEST ISOL	11715-FM-096B2/16/B5	CONTMT	216'	13		--	22	CLOSED	CLOSED	NO	11715-SI-024/2; 11715-FK-001D	1-SI-SOV-1850D
4276	1, 2	07	1-SI-HCV-1850F	SI/ACCUM TEST ISOL	11715-FM-096B3/13/B5	CONTMT	221'	7	5	--	22	CLOSED	CLOSED	NO	11715-SI-026/3; 11715-FK-001D	1-SI-SOV-1850F

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

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 Sort Criteria: Class, ID Number  
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 Program File Name & Version: SSEM 2.2

LINE NO.	TRAIN	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Fir Elv.	LOCATION Re. or Row/Col.	SGRT NOTES	OP. Normal	ST. Desireg	POWER REQD?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10) (11)	(12)	(13)	(14)	(15)	(16)	(17)
7127	2	07	1-SI-HCV-1936	SI/WASTE GAS FLTR RETURN CONTMT ISOL	11715-FM-096B1/17/E5 CONTMT		241'	8	-- I	CLOSED	CLOSED	NO	11715-SI-014/9	1-SI-SOV-1936	
7119	1	07	1-SI-TV-100	SI/NITROGEN HEADER CONTMT ISOL	11715-FM-096B1/17/F3 AUX		246'	6.7/K	S I	OPEN	CLOSED	NO	11715-SI-034/5	1-SI-SOV-100A 1-SI-SOV-100B	
7128	1	07	1-SI-TV-101	SI/WASTE GAS FILTER CONTMT ISOL	11715-FM-096B1/17/E4 AUX		244'	7/L	S I	OPEN	CLOSED	NO	11715-SI-013/5	1-SI-SOV-101	
7129	2	07	1-SI-TV-1842	SI/ACCUM TEST LINE CONTMT ISOL	11715-FM-096B1/17/C4 CONTMT		262'	13	-- I	CLOSED	CLOSED	NO	11715-SI-033/7	1-SI-SOV-1842	
7125	1	07	1-SI-TV-1859	SI/ACCUM TEST LINE CONTMT ISOL	11715-FM-096A2/23/F7 SFGD		267'	--	-- I	CLOSED	CLOSED	NO	11715-SI-035/7	1-SI-SOV-1859	
7193	1	07	1-SS-TV-100A	SS/PZR LIQUID SAMPLING CONTMT ISOL	11715-FM-089D1/16/F6 CONTMT		253'	9	-- I	CLOSED	CLOSED	NO	11715-SS-001/6	1-SS-SOV-100A	
7195	2	07	1-SS-TV-100B	SS/PZR LIQUID SAMPLING CONTMT ISOL	11715-FM-089D1/16/F5 AUX		244'	7/K	-- I	CLOSED	CLOSED	NO	11715-SS-002/3	1-SS-SOV-100B	
7200A	1	07	1-SS-TV-101A	SS/PRESSURIZER VAPOR SAMPLE CONTMT ISOL	11715-FM-089D1/16/E6 CONTMT		253'	8.8	-- I	CLOSED	CLOSED	NO	N/A	N/A	
7200C	2	07	1-SS-TV-101B	SS/PRESSURIZER VAPOR SAMPLE CONTMT ISOL	11715-FM-089D1/16/E5 AUX		244'	7/K	-- I	CLOSED	CLOSED	NO	N/A	N/A	
7197	1	07	1-SS-TV-104A	SS/PZR RLF TK GAS SAMPLING CONTMT ISOL	11715-FM-089D1/16/D6 CONTMT		253'	8.8	-- I	CLOSED	CLOSED	NO	11715-SS-009/5	1-SS-SOV-104A	
7199	2	07	1-SS-TV-104B	SS/PZR RLF TK GAS SAMPLING CONTMT ISOL	11715-FM-089D1/16/D5 AUX		244'	7/K	-- I	CLOSED	CLOSED	NO	11715-SS-010/4	1-SS-SOV-104B	
7201	1	07	1-SS-TV-112A	SS/SG SURFACE SAMPLE CONTMT ISOL	11715-FM-089B3/16/D3 CONTMT		253'	8.5	-- I	CLOSED	CLOSED	NO	11715-SS-028/7	1-SS-SOV-112A	
7203	2	07	1-SS-TV-112B	SS/SG SURFACE SAMPLE CONTMT ISOL	11715-FM-089B3/16/C3 AUX		248'	6/JK	-- I	CLOSED	CLOSED	NO	11715-SS-029/4	1-SS-SOV-112B	
7205	1	07	1-SV-TV-102-1	SV/AIR EJECTOR DISCH CONTMT ISOL	11715-FM-072A2/20/C3 MSVH		272'	4.8/HA	-- I	CLOSED	CLOSED	NO	11715-SV-010	1-SV-SOV-102-1A	
7207	1	07	1-SV-TV-102-2	SV/AIR EJECTOR DISCH CONTMT ISOL	11715-FM-072A2/20/B3 TB		307'	7/C	-- I	CLOSED	CLOSED	NO	11715-SV-009	1-SV-SOV-102-2	
7209	2	07	1-SV-TV-103	SV/RADIATION MONITORING RETURN CONTMT ISOL	11715-FM-072A2/20/D3 MSVH		272'	4.8/HA	-- I	CLOSED	CLOSED	NO	11715-SV-011/6	1-SV-SOV-103	
5285	1	07	1-SW-TCV-102A	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G1/12/D4 AUX		244'	8/K	-- --	OPEN	OPEN	NO	11715-SW-070/1	N/A	
5286	1	07	1-SW-TCV-102B	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G1/12/D6 AUX		244'	8.5/K	-- --	OPEN	OPEN	NO	11715-SW-071/1	N/A	
5287	1	07	1-SW-TCV-102C	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G1/12/D8 AUX		244'	9/K	-- --	OPEN	OPEN	NO	11715-SW-072/1	N/A	
5205	2	07	1-SW-TV-101A	SW/UNIT 1 RECIRC AIR COOLING COIL ISOL	11715-FM-078A4/43/D4 SB		265'	5.5/GA	-- --	CLOSED	CLOSED	NO	11715-SW-037/7	N/A	
5208	2	07	1-SW-TV-101B	SW/UNIT 1 RECIRC AIR COOLING COIL ISOL	11715-FM-078A4/43/D4 SB		265'	5.5/GA	-- --	CLOSED	CLOSED	NO	11715-SW-038/7	N/A	
7155	1	07	1-VG-TV-100A	VG/PRIMARY VENT HDR CONTMT ISOL	11715-FM-090C1/17/F3 AUX		244'	6/J	S I	OPEN	CLOSED	NO	11715-VG-001/3	1-VG-SOV-100A	

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA1\_SSEL.DBF / 05/20/97 / 11:43:22  
 Sort Criteria: Class\_ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr.Elv.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
7157	2	07	1-VG-TV-100B	VG/PRIMARY VENT HDR CONTMT ISOL	11715-FM-090C1/17/D3	CONTMT	241'	8	S	I	OPEN	CLOSED	NO	11715-VG-002/B	1-VG-SOV-100B
7071	1	07	2-HC-TV-204A	HC/UNIT 2 CONT. ATM PURGE ISOL	11715-FMC-092A1/1/C3	AUX	244'	12.2/J	--	1,38	CLOSED	CLOSED	NO	N/A	2-HC-SOV-204A
7071	1	07	2-HC-TV-204A	HC/UNIT 2 CONT. ATM PURGE ISOL	11715-FMC-092A1/1/C3	AUX	244'	12.2/J	S	1,39	CLOSED	OPEN	YES	N/A	2-HC-SOV-204A
7073	1	07	2-HC-TV-204B	HC/UNIT 2 CONT. ATM PURGE ISOL	11715-FMC-092A1/1/C3	AUX	244'	12.2/J	--	1,38	CLOSED	CLOSED	NO	N/A	2-HC-SOV-204B
7073	1	07	2-HC-TV-204B	HC/UNIT 2 CONT. ATM PURGE ISOL	11715-FMC-092A1/1/C3	AUX	244'	12.2/J	S	1,39	CLOSED	OPEN	YES	N/A	2-HC-SOV-204B
7065A	1	07	2-HC-TV-205A	HC/HYDROGEN COMBINER 1 UNIT 2 DISCH ISOL	11715-FMC-092A1/1/E6	AUX	244'	11/L	--	1,38	CLOSED	CLOSED	NO	N/A	2-HC-SOV-205A
7065A	1	07	2-HC-TV-205A	HC/HYDROGEN COMBINER 1 UNIT 2 DISCH ISOL	11715-FMC-092A1/1/E6	AUX	244'	11/L	S	1,39	CLOSED	OPEN	YES	N/A	2-HC-SOV-205A
7063A	1	07	2-HC-TV-205B	HC/HYDROGEN COMBINER 1 UNIT 2 DISCH ISOL	11715-FMC-092A1/1/E7	AUX	244'	11/L	--	1,38	CLOSED	CLOSED	NO	N/A	2-HC-SOV-205B
7063A	1	07	2-HC-TV-205B	HC/HYDROGEN COMBINER 1 UNIT 2 DISCH ISOL	11715-FMC-092A1/1/E7	AUX	244'	11/L	S	1,39	CLOSED	OPEN	YES	N/A	2-HC-SOV-205B
7075	2	07	2-HC-TV-206A	HC/UNIT 2 CONT. ATM PURGE ISOL	11715-FMC-092A1/1/C3	AUX	244'	11.8/J	--	1,38	CLOSED	CLOSED	NO	N/A	2-HC-SOV-206A
7075	2	07	2-HC-TV-206A	HC/UNIT 2 CONT. ATM PURGE ISOL	11715-FMC-092A1/1/C3	AUX	244'	11.8/J	S	1,39	CLOSED	OPEN	YES	N/A	2-HC-SOV-206A
7077	2	07	2-HC-TV-206B	HC/UNIT 2 CONT. ATM PURGE ISOL	11715-FMC-092A1/1/C2	AUX	244'	11.8/J	--	1,38	CLOSED	CLOSED	NO	N/A	2-HC-SOV-206B
7077	2	07	2-HC-TV-206B	HC/UNIT 2 CONT. ATM PURGE ISOL	11715-FMC-092A1/1/C2	AUX	244'	11.8/J	S	1,39	CLOSED	OPEN	YES	N/A	2-HC-SOV-206B
7069	2	07	2-HC-TV-207A	HD/HYDROGEN COMBINER 2 UNIT 2 DISCH ISOL	11715-FMC-092A1/1/C6	AUX	244'	11/J	--	1,38	CLOSED	CLOSED	NO	N/A	2-HC-SOV-207A
7069	2	07	2-HC-TV-207A	HD/HYDROGEN COMBINER 2 UNIT 2 DISCH ISOL	11715-FMC-092A1/1/C6	AUX	244'	11/J	S	1,39	CLOSED	OPEN	YES	N/A	2-HC-SOV-207A
7067	2	07	2-HC-TV-207B	HC/HYDROGEN COMBINER 2 UNIT 2 DISCH ISOL	11715-FMC-092A1/1/C6	AUX	244'	11/J	--	1,38	CLOSED	CLOSED	NO	N/A	2-HC-SOV-207B
7067	2	07	2-HC-TV-207B	HC/HYDROGEN COMBINER 2 UNIT 2 DISCH ISOL	11715-FMC-092A1/1/C6	AUX	244'	11/J	S	1,39	CLOSED	OPEN	YES	N/A	2-HC-SOV-207B
5309	1	07	2-SW-TCV-202A	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G2/10/D4	AUX	244'	9.2/K	--	--	OPEN	OPEN	NO	12050-SW-034/2	N/A
5310	1	07	2-SW-TCV-202B	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G2/10/D6	AUX	244'	9.5/K	--	--	OPEN	OPEN	NO	12050-SW-035/2	N/A
5311	1	07	2-SW-TCV-202C	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G2/10/D8	AUX	244'	10/K	--	--	OPEN	OPEN	NO	12050-SW-036/2	N/A
7061A	2	07A	1-HC-TV-103A	HC/HYDROGEN ANALYZER UNIT 1 DISCH ISOL	11715-FMC-092A1/1/C8	AUX	244'	9/J	R	1,38	CLOSED	CLOSED	NO	N/A	N/A
7061B	2	07A	2-HC-TV-203A	HC/HYDROGEN ANALYZER UNIT 1 DISCH ISOL	11715-FMC-092A1/1/C6	AUX	244'	9/J	R	1,39	CLOSED	CLOSED	NO	N/A	N/A

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA1\_SSEL.DBF / 05/20/97 / 11:43:22  
 Sort Criteria: Class, ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN	CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D	SUPPORTING DWG. NO./REV.	SYS. & SUPPORTING	REQ'D INTERCONNECTIONS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(17)
5091	1	08A	1-CC-MOV-100A	CC/RHR HX OUTLET CONTROL VALVE	11715-FM-079B1/21/B3	CONTMT	243'	7	S R	17	CLOSED	OPEN	YES	N/A		N/A	
5099	1	08A	1-CC-MOV-100B	CC/RHR HX OUTLET CONTROL VALVE	11715-FM-079B1/21/A3	CONTMT	243'	7	S R	17	CLOSED	OPEN	YES	N/A		N/A	
3045	2	08A	1-CH-MOV-1115B	CH/RWST TO CCP INLET ISOL	11715-FM-095B2/24/B8	AUX	244'	7.6/J	S R	--	CLOSED	OPEN	YES	N/A		N/A	
1053	1	08A	1-CH-MOV-1115C	CH/VCT OUTLET TO CHARGING PUMPS	11715-FM-095B1/21/C6	AUX	278'	9/J	R	--	OPEN	OPEN	NO	N/A		1-CH-LT-1112	
3044	1	08A	1-CH-MOV-1115D	CH/RWST TO CCP INLET ISOL	11715-FM-095B2/24/B8	AUX	244'	7.6/J	S R	--	CLOSED	OPEN	YES	N/A		N/A	
1054	1	08A	1-CH-MOV-1115E	CH/VCT OUTLET TO CHARGING PUMPS	11715-FM-095B1/21/C6	AUX	278'	9/J	R	--	OPEN	OPEN	NO	N/A		1-CH-LT-1112	
1055	1	08A	1-CH-MOV-1267A	CH/CHARGING PUMP A INLET ISOL	11715-FM-095B2/24/C3	AUX	253'	8.2/J	R	--	OPEN	OPEN	NO	N/A		N/A	
1056	2	08A	1-CH-MOV-1269A	CH/CHARGING PUMP B INLET ISOL	11715-FM-095B2/24/C5	AUX	253'	8.5/J	R	--	OPEN	OPEN	NO	N/A		N/A	
1057	3	08A	1-CH-MOV-1270A	CH/CHARGING PUMP C INLET ISOL	11715-FM-095B2/24/C7	AUX	253'	8.6/J	R	--	OPEN	OPEN	NO	N/A		N/A	
7010	1	08A	1-CH-MOV-1270B	CH/LHS1 TO CHARGING PUMP SUCTION XCONN	11715-FM-095B2/24/C3	AUX	244'	8.6/J	R	I	OPEN	OPEN	NO	N/A		N/A	
1062	1	08A	1-CH-MOV-1275A	CH/CCP A TO SEAL WATER HX HEADER	11715-FM-095B2/24/D3	AUX	257'	8.2/J	R	--	OPEN	OPEN	NO	N/A		N/A	
1063	2	08A	1-CH-MOV-1275B	CH/CCP B TO SEAL WATER HX HEADER	11715-FM-095B2/24/D5	AUX	257'	8.6/J	R	--	OPEN	OPEN	NO	N/A		N/A	
1064	3	08A	1-CH-MOV-1275C	CH/CCP C TO SEAL WATER HX HEADER	11715-FM-095B2/24/D7	AUX	257'	8.6/J	R	--	OPEN	OPEN	NO	N/A		N/A	
1065	1	08A	1-CH-MOV-1286A	CH/CCP A TO BIT & REGEN HX	11715-FM-095B2/24/E4	AUX	257'	8.2/J	R	--	OPEN	OPEN	NO	N/A		N/A	
1066	2	08A	1-CH-MOV-1286B	CH/CCP B TO BIT & REGEN HX	11715-FM-095B2/24/E6	AUX	257'	8.6/J	R	--	OPEN	OPEN	NO	N/A		N/A	
1067	3	08A	1-CH-MOV-1286C	CH/CCP C TO BIT & REGEN HX	11715-FM-095B2/24/E8	AUX	257'	8.6/J	R	--	OPEN	OPEN	NO	N/A		N/A	
1068	1	08A	1-CH-MOV-1287A	CH/CCP A TO LOOP FILL	11715-FM-095B2/24/E4	AUX	257'	8.2/J	R	--	OPEN	OPEN	NO	N/A		N/A	
1069	2	08A	1-CH-MOV-1287B	CH/CCP B TO LOOP FILL	11715-FM-095B2/24/E6	AUX	257'	8.6/J	R	--	OPEN	OPEN	NO	N/A		N/A	
1070	3	08A	1-CH-MOV-1287C	CH/CCP C TO LOOP FILL	11715-FM-095B2/24/E8	AUX	257'	8.6/J	R	--	OPEN	OPEN	NO	N/A		N/A	
1081	1	08A	1-CH-MOV-1289A	CH/CHARGING FLOW TO REGEN HX	11715-FM-095C1/14/D4	AUX	244'	6/H	R	--	OPEN	OPEN	NO	N/A		N/A	
1074	1	08A	1-CH-MOV-1289B	CH/CCPs TO REGEN HX	11715-FM-095C1/14/C3	AUX	245'	7/K	R	--	OPEN	OPEN	NO	N/A		N/A	
1179	1	08A	1-CH-MOV-1350	CH/EMERGENCY BORATE VALVE	11715-FM-095B1/21/B5	AUX	274'	8.5/J	S R	--	CLOSED	OPEN	YES	N/A		N/A	
1090	1	08A	1-CH-MOV-1370	CH/CCP TO RCP SEAL INJECTION	11715-FM-095C2/13/F4	AUX	259'	9/L	R	--	OPEN	OPEN	NO	N/A		N/A	
1072	1, 2	08A	1-CH-MOV-1373	CH/CCP HEADER TO SEAL WATER HX	11715-FM-095B1/21/A8	AUX	250'	9/L	R	--	OPEN	OPEN	NO	N/A		N/A	
1119	1, 2	08A	1-CH-MOV-1380	CH/SEAL WATER RETURN ISOL	11715-FM-095C2/13/F4	CONTMT	241'	8	R	A,21	OPEN	OPEN	NO	VIMS26641,26846		N/A	
1119	1	08A	1-CH-MOV-1380	CH/RCP SEALWATER RETURN CONTMT ISOL	11715-FM-095C2/13/F4	CONTMT	241'	8	S R	I	OPEN	CLOSED	YES	N/A		1-EP-MC-20	

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA1\_SSEL.DBF / 05/20/97 / 11:43:22  
 Sort Criteria: Class, ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg No /Rev /Zone	Building	EQUIPMENT Fir.Elv.	LOCATION Rm. or Row/Col	SORT	NOTES	OP. Normal	ST. Desired	POWER REQD?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1132	1, 2	08A	1-CH-MOV-1381	11715-FM-09581/21/C8	AUX	244'	7/J	R	A,21	OPEN	OPEN	NO	N/A	N/A	
1132	2	08A	1-CH-MOV-1381	11715-FM-09581/21/C8	AUX	244'	7/J	S R	1	OPEN	CLOSED	YES	N/A	1-EP-MC-22	
4172	2	08A	1-FW-MOV-100A	11715-FM-074A1/32/A5	AFPH	275'	--	S R	7	CLOSED	OPEN	YES	N/A	N/A	
4158	2	08A	1-FW-MOV-100B	11715-FM-074A1/32/A6	AFPH	278'	--	R	7	OPEN	OPEN	NO	N/A	N/A	
4165	2	08A	1-FW-MOV-100C	11715-FM-074A1/32/A7	AFPH	275'	--	S R	7	CLOSED	OPEN	YES	N/A	N/A	
4157	1	08A	1-FW-MOV-100D	11715-FM-074A3/29/D8	AFPH	270'	--	R	--	OPEN	OPEN	NO	N/A	N/A	
5449H	1	08A	1-HV-MOV-111A	11715-FB-040A1/13	SB	254'	CHILLER RM 4/C	R	--	OPEN	OPEN	NO	N/A	N/A	
5449N	2	08A	1-HV-MOV-111B	11715-FB-040A1/13	SB	254'	CHILLER RM 5/D	R	--	OPEN	OPEN	NO	N/A	N/A	
5449Z7	2	08A	1-HV-MOV-111C	11715-FB-040A1/13/D6	SB	254'	CHILLER RM 4/C	R	--	OPEN	OPEN	NO	N/A	N/A	
5447	1	08A	1-HV-MOV-113A	11715-FB-040D1/15/E3	SB	--	AC RM	R	--	OPEN	OPEN	NO	N/A	N/A	
5448	1	08A	1-HV-MOV-113B	11715-FB-040D1/15/B3	SB	--	AC RM	R	--	OPEN	OPEN	NO	N/A	N/A	
5449	2	08A	1-HV-MOV-113C	11715-FB-040D1/15/D3	SB	--	AC RM	R	--	OPEN	OPEN	NO	N/A	N/A	
7002	1	08A	1-QS-MOV-100A	11715-FM-091A2/23/A3	QSPH	271'	--	S R	1	CLOSED	OPEN	YES	11715-FE-1Q1/21	1-EP-MC-20	
7005	2	08A	1-QS-MOV-100B	11715-FM-091A2/23/A3	QSPH	271'	--	R	1	OPEN	OPEN	NO	N/A	1-EP-MC-21	
3069	1	08A	1-QS-MOV-101A	11715-FM-091A2/23/D5	SFGD	256'	NOTE 1M	R	A	CLOSED	CLOSED	NO	N/A	N/A	
3069	1	08A	1-QS-MOV-101A	11715-FM-091A2/23/D5	SFGD	256'	NOTE 1M	S R	1	CLOSED	OPEN	YES	N/A	1-EP-MC-19	
3070	1	08A	1-QS-MOV-101B	11715-FM-091A2/23/E5	SFGD	256'	NOTE 1N	R	A	CLOSED	CLOSED	NO	N/A	N/A	
3070	2	08A	1-QS-MOV-101B	11715-FM-091A2/23/E5	SFGD	256'	NOTE 1N	S R	1	CLOSED	OPEN	YES	N/A	1-EP-MC-21	
3055	1	08A	1-QS-MOV-102A	11715-FM-091A1/20/C5	YARD/TUNL ISOL	270'	2 FT N OF AFPH	R	A,21	CLOSED	CLOSED	NO	N/A	N/A	
3055	1	08A	1-QS-MOV-102A	11715-FM-091A1/20/C5	YARD/TUNL ISOL	270'	2 FT N OF AFPH	S R	1,21	CLOSED	OPEN	YES	N/A	1-EP-MC-20	
3056	2	08A	1-QS-MOV-102B	11715-FM-091A1/20/C6	YARD/TUNL ISOL	272'	--	R	A,21	CLOSED	CLOSED	NO	N/A	N/A	
3056	2	08A	1-QS-MOV-102B	11715-FM-091A1/20/C6	YARD/TUNL ISOL	272'	--	S R	1,21	CLOSED	OPEN	YES	N/A	1-EP-MC-21	
3017	1	08A	1-RC-MOV-1535	11715-FM-093B1/22/E4	CONTMT	308'	9.4	S R	12	OPEN	OP/CL	YES	11715-RC-134/6	N/A	
3018	1	08A	1-RC-MOV-1536	11715-FM-093B1/22/D4	CONTMT	308'	9.2	S R	12	OPEN	OP/CL	YES	11715-RC-133/5	N/A	

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA1\_SSEL DRF / 05/20/97 / 11:43:22  
 Sort Criteria: Class, ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr.Elv.	LOCATION Rm. or Row/Col.	SORT NOTES	OP. ST.	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
4244	1, 2	OBA	1-RH-MOV-1700	RH/RHR PUMP SUCTION ISOL	11715-FM-094A1/14/A5	CONTMT	241'	2	S R 2	CLOSED	OPEN	YES	VIMS 27905 11715-FP-013A	1-RC-PT-1402		
4245	1, 2	OBA	1-RH-MOV-1701	RH/RHR PUMP SUCTION ISOL	11715-FM-094A1/14/A4	CONTMT	236'	4	S R 2	CLOSED	OPEN	YES	11715-FP-013A	1-RC-PT-1403		
4271	1, 2	OBA	1-RH-MOV-1720A	RH/RHR RETURN ISOL LOOP 2	11715-FM-094A2/15/C3	CONTMT	216'	12	S R --	CLOSED	OPEN	YES	11715-FP-032A	N/A		
4272	1, 2	OBA	1-RH-MOV-1720B	RH/RHR RETURN ISOL LOOP 3	11715-FM-094A2/15/B3	CONTMT	216'	7.5	S R --	CLOSED	OPEN	YES	VIMS 30454 11715-FP-013A OR 11715-FP-032A	N/A		
7039	2	OBA	1-RS-MOV-100A	RS/CASING COOLING PUMP A DISCH ISOL	11715-FM-091B1/05/E7	SFGD	267'	NOTE 1Z	S R I	CLOSED	OPEN	YES	N/A	1-EP-MC-20		
7042	2	OBA	1-RS-MOV-100B	RS/CASING COOLING PUMP B DISCH ISOL	11715-FM-091B1/05/F7	SFGD	267'	NOTE 1BB	S R I	CLOSED	OPEN	YES	N/A	1-EP-MC-21		
7038	2	OBA	1-RS-MOV-101A	RS/CASING COOLING PUMP A DISCH ISOL	11715-FM-091B1/05/E7	SFGD	267'	--	R I	OPEN	OPEN	NO	N/A	1-EP-MC-20		
7041	2	OBA	1-RS-MOV-101B	RS/CASING COOLING PUMP B DISCH ISOL	11715-FM-091B1/05/F7	SFGD	267'	--	R I	OPEN	OPEN	NO	N/A	1-EP-MC-21		
7022	2	OBA	1-RS-MOV-155A	RS/OUTSIDE RECIRC SPRAY PUMP A INLET ISOL	11715-FM-091A4/24/B6	SFGD	267'	--	R I	OPEN	OPEN	NO	N/A	1-EP-MC-19		
7027	2	OBA	1-RS-MOV-155B	RS/OUTSIDE RECIRC SPRAY PUMP B INLET ISOL	11715-FM-091A4/24/A6	SFGD	267'	--	R I	OPEN	OPEN	NO	N/A	1-EP-MC-21		
7024	2	OBA	1-RS-MOV-156A	RS/OUTSIDE RECIRC SPRAY PUMP A DISCH ISOL	11715-FM-091A4/24/D5	SFGD	256'	--	R I	OPEN	OPEN	NO	N/A	1-EP-MC-19		
1135	1	OBA	1-SI-MOV-1836	SI/CCP TO COLD LEGS 1, 2, 3	11715-FM-096A3/22/C8	AUX	244'	6/J	R A,21	CLOSED	CLOSED	NO	N/A	N/A		
1135	1	OBA	1-SI-MOV-1836	SI/CCP TO COLD LEGS 1, 2, 3	11715-FM-096A3/22/C8	AUX	244'	6/J	S R 1,21	CLOSED	OPEN	YES	N/A	1-EP-MC-22		
7009A	1	OBA	1-SI-MOV-1860A	SI/LHSI PUMP A SUMP ISOL	11715-FM-096A1/28/B7	QSPH	267'	3/K	S R I	CLOSED	OPEN	YES	N/A	1-EP-MC-19		
7011A	2	OBA	1-SI-MOV-1860B	SI/LHSI PUMP B SUMP ISOL	11715-FM-096A1/28/B5	QSPH	267'	3/K	S R I	CLOSED	OPEN	YES	N/A	N/A		
1058	1	OBA	1-SI-MOV-1863A	SI/LHSI HDR TO CCPs	11715-FM-096A2/23/C5	AUX	244'	7.6/J	R A	CLOSED	CLOSED	NO	N/A	N/A		
1058	1	OBA	1-SI-MOV-1863A	SI/LHSI HDR TO CCPs	11715-FM-096A2/23/C5	AUX	244'	7.6/J	S R I	CLOSED	OPEN	YES	N/A	1-EP-MC-19		
1058A	2	OBA	1-SI-MOV-1863B	SI/LHSI TO CHARGING PUMP A SUCTION X CONN	11715-FM-095B2/24/B8	AUX	244'	7.6/J	S R 1,32	CLOSED	OPEN	YES	N/A	1-EP-MC-21		
1058A	2	OBA	1-SI-MOV-1863B	SI/LHSI TO CHARGING PUMP A SUCTION X CONN	11715-FM-095B2/24/B8	AUX	244'	7.6/J	R A,32	CLOSED	CLOSED	NO	N/A	1-EP-MC-21		
2048	1, 2	OBA	1-SI-MOV-1865A	SI/ACCUM OUTLET ISOL	11715-FM-096B1/17/C7	CONTMT	216'	15	S R 2,19	OPEN	CLOSED	YES	VIMS30186-30188 11715-FP-012A	N/A		

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NAI\_SSEL.DBF / 05/20/97 / 11:43:22  
 Sort Criteria: Class, ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr.Elv.	LOCATION Rm. or Row/Col.	SORT	NOTES	<-- OP. Normal	ST. Desired	POWER REQ'D	SUPPORTING DWG. NO./REV.	SYS. & SUPPORTING	REQ'D INTERCONNECTIONS	REG. ISSUE
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	
4275	1, 2	O8A 1-SI-MOV-1865B	SI/ACCUM OUTLET ISOL	11715-FM-096B2/16/C6	CONTMT	216'	13	S R	2,22	OPEN	CLOSED	YES	VIMS30711,30597 11715-FP-012A	N/A		
4278	1, 2	O8A 1-SI-MOV-1865C	SI/ACCUM OUTLET ISOL	11715-FM-096B3/13/C6	CONTMT	216'	8	S R	2,22	OPEN	CLOSED	YES	VIMS30380,30294 11715-FP-012A	2J12N		
1086	1	O8A 1-SI-MOV-1867A	SI/CHARGING HEADER TO BIT ISOL	11715-FM-096A3/22/D4	AUX	244'	7/J	R	--	CLOSED	CLOSED	NO	N/A		N/A	
1087	1	O8A 1-SI-MOV-1867B	SI/CHARGING HEADER TO BIT ISOL	11715-FM-096A3/22/D4	AUX	244'	7/J	R	--	CLOSED	CLOSED	NO	N/A		N/A	
1087H	1	O8A 1-SI-MOV-1867C	SI/BIT TO COLD LEG LOOP ISOL	11715-FM-096A3/22/E7	AUX	244'	6/J	R	--	CLOSED	CLOSED	NO	N/A		N/A	
1087I	2	O8A 1-SI-MOV-1867D	SI/BIT TO COLD LEG LOOP ISOL	11715-FM-096A3/22/D7	AUX	244'	6/J	R	--	CLOSED	CLOSED	NO	N/A		N/A	
1136	1	O8A 1-SI-MOV-1869A	SI/CCP TO HOT LEGS 1, 2, 3	11715-FM-096A3/22/C8	AUX	244'	6/J	R	A,21	CLOSED	CLOSED	NO	N/A		N/A	
1136	1	O8A 1-SI-MOV-1869A	SI/CCP TO HOT LEGS 1, 2, 3	11715-FM-096A3/22/C8	AUX	244'	6/J	S R	1,21	CLOSED	OPEN	YES	N/A		1-EP-MC-19	
1088	1	O8A 1-SI-MOV-1869B	SI/CCP TO HOT LEGS 1, 2, 3	11715-FM-096A3/22/A8	AUX	244'	6/J	R	A	CLOSED	CLOSED	NO	N/A		N/A	
1088	1	O8A 1-SI-MOV-1869B	SI/CCP TO HOT LEGS 1, 2, 3	11715-FM-096A3/22/A8	AUX	244'	6/J	S R	I	CLOSED	OPEN	YES	N/A		1-EP-MC-21	
5175	2	O8A 1-SW-MOV-101A	SW/UNIT 1 RECIRC SPRAY HX ISOL	11715-FM-078A4/43/C3	QSPH	265'	NOTE 1K	S R	--	CLOSED	OPEN	YES	N/A		1-EP-MC-19	
5176	1	O8A 1-SW-MOV-101B	SW/UNIT 1 RECIRC SPRAY HX ISOL	11715-FM-078A4/43/C3	QSPH	265'	NOTE 1K	S R	--	CLOSED	OPEN	YES	N/A		1-EP-MC-21	
5177	2	O8A 1-SW-MOV-101C	SW/UNIT 1 RECIRC SPRAY HX ISOL	11715-FM-078A4/43/B3	QSPH	265'	NOTE 1K	S R	--	CLOSED	OPEN	YES	N/A		1-EP-MC-19	
5178	1	O8A 1-SW-MOV-101D	SW/UNIT 1 RECIRC SPRAY HX ISOL	11715-FM-078A4/43/B3	QSPH	265'	NOTE 1K	S R	--	CLOSED	OPEN	YES	N/A		1-EP-MC-21	
5178A	2	O8A 1-SW-MOV-103A	SW/RECIRC SPRAY COOLER A INLET ISOL	11715-FM-078B1/20/E3	QSPH	265'	--	R	--	OPEN	OPEN	NO	N/A		N/A	
5178B	2	O8A 1-SW-MOV-103B	SW/RECIRC SPRAY COOLER B INLET ISOL	11715-FM-078B1/20/E4	QSPH	265'	--	R	--	OPEN	OPEN	NO	N/A		N/A	
5178C	2	O8A 1-SW-MOV-103C	SW/RECIRC SPRAY COOLER C INLET ISOL	11715-FM-078B1/20/E6	QSPH	265'	--	R	--	OPEN	OPEN	NO	N/A		N/A	
5178D	2	O8A 1-SW-MOV-103D	SW/RECIRC SPRAY COOLER D INLET ISOL	11715-FM-078B1/20/E7	QSPH	265'	--	R	--	OPEN	OPEN	NO	N/A		N/A	
7014	1	O8A 1-SW-MOV-104A	SW/RECIRC SPRAY COOLER A DISCH ISOL	11715-FM-078B1/20/C4	QSPH	265'	NOTE 1U	S R	I	CLOSED	OPEN	YES	N/A		1-EP-MC-19	
7019	1	O8A 1-SW-MOV-104B	SW/RECIRC SPRAY COOLER B DISCH ISOL	11715-FM-078B1/20/C5	QSPH	265'	NOTE 1V	S R	I	CLOSED	OPEN	YES	N/A		1-EP-MC-21	
7031	2	O8A 1-SW-MOV-104C	SW/RECIRC SPRAY COOLER C DISCH ISOL	11715-FM-078B1/20/C6	QSPH	265'	NOTE 1W	S R	I	CLOSED	OPEN	YES	N/A		1-EP-MC-21	
7026	2	O8A 1-SW-MOV-104D	SW/RECIRC SPRAY COOLER D DISCH ISOL	11715-FM-078B1/20/C7	QSPH	265'	NOTE 1U	S R	I	CLOSED	OPEN	YES	N/A		1-EP-MC-19	

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA1\_SSEL.DBF / 05/20/97 / 11:43:22  
 Sort Criteria: Class\_ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQD?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10) (11)	(12)	(13)	(14)	(15)	(16)	(17)
5179	1	08A	1-SW-MOV-105A	SW/RECIRC SPRAY COOLER A OUTLET ISOL	11715-FM-078A4/43/C3	QSPH	265'	NOTE 1K	R A	CLOSED	CLOSED	NO	N/A	N/A	
5179	1	08A	1-SW-MOV-105A	SW/RECIRC SPRAY COOLER A OUTLET ISOL	11715-FM-078A4/43/C3	QSPH	265'	NOTE 1K	S R I	CLOSED	OPEN	YES	N/A	1-EP-MC-19	
5180	1	08A	1-SW-MOV-105B	SW/RECIRC SPRAY COOLER B OUTLET ISOL	11715-FM-078A4/43/C3	QSPH	265'	NOTE 1K	R A	CLOSED	CLOSED	NO	N/A	N/A	
5180	1	08A	1-SW-MOV-105B	SW/RECIRC SPRAY COOLER B OUTLET ISOL	11715-FM-078A4/43/C3	QSPH	265'	NOTE 1K	S R I	CLOSED	OPEN	YES	N/A	1-EP-MC-21	
5181	1	08A	1-SW-MOV-105C	SW/RECIRC SPRAY COOLER C OUTLET ISOL	11715-FM-078A4/43/C3	QSPH	265'	NOTE 1K	R A	CLOSED	CLOSED	NO	N/A	N/A	
5181	1	08A	1-SW-MOV-105C	SW/RECIRC SPRAY COOLER C OUTLET ISOL	11715-FM-078A4/43/C3	QSPH	265'	NOTE 1K	S R I	CLOSED	OPEN	YES	N/A	1-EP-MC-19	
5182	1	08A	1-SW-MOV-105D	SW/RECIRC SPRAY COOLER D OUTLET ISOL	11715-FM-078A4/43/C3	QSPH	265'	NOTE 1P	R A	CLOSED	CLOSED	NO	N/A	N/A	
5182	1	08A	1-SW-MOV-105D	SW/RECIRC SPRAY COOLER D OUTLET ISOL	11715-FM-078A4/43/C3	QSPH	265'	NOTE 1P	S R I	CLOSED	OPEN	YES	N/A	1-EP-MC-21	
5363	1	08A	1-SW-MOV-108A	SW/CC HX INLET ISOL	11715-FM-078C1/32/A4	AUX	244'	--	R --	OPEN	OPEN	NO	N/A	N/A	
5364	1	08A	1-SW-MOV-108B	SW/CC HX INLET ISOL	11715-FM-078C1/32/A4	AUX	244'	--	R --	OPEN	OPEN	NO	N/A	N/A	
5201	1	08A	1-SW-MOV-110A	SW/UNIT 1 RECIRC AIR COOLING COIL ISOL	11715-FM-078A4/43/D4	SB	265'	--	R --	CLOSED	CLOSED	NO	N/A	N/A	
5202	1	08A	1-SW-MOV-110B	SW/UNIT 1 RECIRC AIR COOLING COIL ISOL	11715-FM-078A4/43/D4	SB	265'	--	R --	CLOSED	CLOSED	NO	N/A	N/A	
5232	1	08A	1-SW-MOV-113A	SW/CCW FUEL PIT COOLERS ISOL	11715-FM-078A4/43/B7	AUX	244'	8.3/F	R --	CLOSED	CLOSED	NO	N/A	N/A	
5234	1	08A	1-SW-MOV-113B	SW/CCW FUEL PIT COOLERS ISOL	11715-FM-078A4/43/B5	AUX	244'	8.7/F	R --	CLOSED	CLOSED	NO	N/A	N/A	
5203	1	08A	1-SW-MOV-114A	SW/UNIT 1 RECIRC AIR COOLING COIL ISOL	11715-FM-078A4/43/D4	SB	265'	--	R --	CLOSED	CLOSED	NO	N/A	N/A	
5204	1	08A	1-SW-MOV-114B	SW/UNIT 1 RECIRC AIR COOLING COIL ISOL	11715-FM-078A4/43/D4	SB	265'	--	R --	CLOSED	CLOSED	NO	N/A	N/A	
5171	1	08A	1-SW-MOV-115A	SW/AUX SW PUMP ISOL	11715-FM-078A1/36/E6	SWPH	254'	8.5/C	R 11	CLOSED	CLOSED	NO	N/A	N/A	
5358	1	08A	1-SW-MOV-121A	SW/SW TO ARRAYS	11715-FM-078H/04/C5	SWVH	326'	--	R --	OPEN	OPEN	NO	N/A	N/A	
5355	1	08A	1-SW-MOV-121B	SW/SW TO ARRAYS	11715-FM-078H/04/C7	SWVH	326'	--	R --	OPEN	OPEN	NO	N/A	N/A	
5359	1	08A	1-SW-MOV-122A	SW/SW TO ARRAYS	11715-FM-078H/04/C5	SWVH	326'	--	R --	OPEN	OPEN	NO	N/A	N/A	
5356	1	08A	1-SW-MOV-122B	SW/SW TO ARRAYS	11715-FM-078H/04/C6	SWVH	326'	--	R --	OPEN	OPEN	NO	N/A	N/A	



NORTH ANNA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
COMPOSITE SSEL  
(Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NAI\_SSEL.DBF / 05/20/97 / 11:43:22  
Sort Criteria: Class, ID Number  
Filter Criteria: <none>  
Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elv.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQD?	SUPPORTING DWG. NO./REV.	SYS. & SUPPORTING COMPONENTS	REQ'D INTERCONNECTIONS	REG. ISSUE
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	
5348	1	OBA	1-SW-MOV-123A	SW/SW RESERVOIR ISOL	11715-FM-078H/04/E4	SWVH	326'	--	R --	OPEN	OPEN	NO	N/A		N/A	
5350	1	OBA	1-SW-MOV-123B	SW/SW RESERVOIR ISOL	11715-FM-078H/04/E8	SWVH	326'	--	R --	OPEN	OPEN	NO	N/A		N/A	
5211	1	OBA	2-SW-MOV-201A	SW/UNIT 2 RECIRC SPRAY HX ISOL	11715-FM-078A4/43/E7	QSPH	256'	QSPH	S R --	CLOSED	OPEN	YES	N/A		2-EP-MC-19	
5212	2	OBA	2-SW-MOV-201B	SW/UNIT 2 RECIRC SPRAY HX ISOL	11715-FM-078A4/43/E7	QSPH	256'	QSPH	S R --	CLOSED	OPEN	YES	N/A		2-EP-MC-21	
5213	1	OBA	2-SW-MOV-201C	SW/UNIT 2 RECIRC SPRAY HX ISOL	11715-FM-078A4/43/E7	QSPH	256'	QSPH	S R --	CLOSED	OPEN	YES	N/A		2-EP-MC-19	
5214	2	OBA	2-SW-MOV-201D	SW/UNIT 2 RECIRC SPRAY HX ISOL	11715-FM-078A4/43/E7	QSPH	256'	QSPH	S R --	CLOSED	OPEN	YES	N/A		2-EP-MC-21	
5214A	2	OBA	2-SW-MOV-203A	SW/RECIRC SPRAY COOLER A INLET ISOL	11715-FM-078B3/21/E7	QSPH	265'	--	R --	OPEN	OPEN	NO	N/A		N/A	
5214B	2	OBA	2-SW-MOV-203B	SW/RECIRC SPRAY COOLER B INLET ISOL	11715-FM-078B3/21/E6	QSPH	265'	--	R --	OPEN	OPEN	NO	N/A		N/A	
5214C	2	OBA	2-SW-MOV-203C	SW/RECIRC SPRAY COOLER C INLET ISOL	11715-FM-078B3/21/E5	QSPH	265'	--	R --	OPEN	OPEN	NO	N/A		N/A	
5214D	2	OBA	2-SW-MOV-203D	SW/RECIRC SPRAY COOLER D INLET ISOL	11715-FM-078B3/21/E3	QSPH	265'	--	R --	OPEN	OPEN	NO	N/A		N/A	
5215	1	OBA	2-SW-MOV-205A	SW/UNIT 2 RECIRC SPRAY HX ISOL	11715-FM-078A4/43/E7	QSPH	256'	--	R A	CLOSED	CLOSED	NO	N/A		N/A	
5215	1	OBA	2-SW-MOV-205A	SW/UNIT 2 RECIRC SPRAY HX ISOL	11715-FM-078A4/43/E7	QSPH	256'		S R I	CLOSED	OPEN	YES	N/A		2-EP-MC-19	
5216	2	OBA	2-SW-MOV-205B	SW/UNIT 2 RECIRC SPRAY HX ISOL	11715-FM-078A4/43/E7	QSPH	256'	--	R A	CLOSED	CLOSED	NO	N/A		N/A	
5216	2	OBA	2-SW-MOV-205B	SW/UNIT 2 RECIRC SPRAY HX ISOL	11715-FM-078A4/43/E7	QSPH	256'		S R I	CLOSED	OPEN	YES	N/A		2-EP-MC-21	
5217	1	OBA	2-SW-MOV-205C	SW/UNIT 2 RECIRC SPRAY HX ISOL	11715-FM-078A4/43/E7	QSPH	256'	--	R A	CLOSED	CLOSED	NO	N/A		N/A	
5217	1	OBA	2-SW-MOV-205C	SW/UNIT 2 RECIRC SPRAY HX ISOL	11715-FM-078A4/43/E7	QSPH	256'		S R I	CLOSED	OPEN	YES	N/A		2-EP-MC-19	
5218	2	OBA	2-SW-MOV-205D	SW/UNIT 2 RECIRC SPRAY HX ISOL	11715-FM-078A4/43/E7	QSPH	256'	--	R A	CLOSED	CLOSED	NO	N/A		N/A	
5218	2	OBA	2-SW-MOV-205D	SW/UNIT 2 RECIRC SPRAY HX ISOL	11715-FM-078A4/43/E7	QSPH	256'		S R I	CLOSED	OPEN	YES	N/A		2-EP-MC-21	
5365	1	OBA	2-SW-MOV-208A	SW/CC HX INLET ISOL	11715-FM-078C1/32/A4	AUX	244'	9.3/F	R --	OPEN	OPEN	NO	N/A		N/A	
5366	1	OBA	2-SW-MOV-208B	SW/CC HX INLET ISOL	11715-FM-078C1/32/A4	SWVH	--	--	R --	OPEN	OPEN	NO	N/A		N/A	
5219	1	OBA	2-SW-MOV-210A	SW/UNIT 2 RECIRC AIR COOLING COIL ISOL	11715-FM-078A4/43/F8	QSPH	--	--	R --	CLOSED	CLOSED	NO	N/A		N/A	
5220	1	OBA	2-SW-MOV-210B	SW/UNIT 2 RECIRC AIR COOLING COIL ISOL	11715-FM-078A4/43/F8	QSPH	--	--	R --	CLOSED	CLOSED	NO	N/A		N/A	
5233	1	OBA	2-SW-MOV-213A	SW/CCW FUEL PIT COOLERS ISOL	11715-FM-078A4/43/B7	AUX	--	--	R --	CLOSED	CLOSED	NO	N/A		N/A	
5235	1	OBA	2-SW-MOV-213B	SW/CCW FUEL PIT COOLERS ISOL	11715-FM-078A4/43/B5	AUX	244'	9.5/F	R --	CLOSED	CLOSED	NO	N/A		N/A	

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA1\_SSEL.DBF / 05/20/97 / 11:43:22  
 Sort Criteria: Class, ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No /Rev./Zone	Building	EQUIPMENT Fir. Elv.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. ST. Normal	OP. ST. Desired	POWER REQ'D	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10) (11)	(12)	(13)	(14)	(15)	(16)	(17)
5221	1	08A	2-SW-MOV-214A	SW/UNIT 2 RECIRC AIR COOLING COIL ISOL	11715-FM-078A4/43/F8	QSPH	--	--	R --	CLOSED	CLOSED	NO	N/A	N/A	
5222	1	08A	2-SW-MOV-214B	SW/UNIT 2 RECIRC AIR COOLING COIL ISOL	11715-FM-078A4/43/F8	QSPH	--	--	R --	CLOSED	CLOSED	NO	N/A	N/A	
5172	1	08A	2-SW-MOV-215A	SW/AUX SW PUMP ISOL	11715-FM-078A1/36/E7	SWPH	254'	8.5/C	R 11	CLOSED	CLOSED	NO	N/A	N/A	
5230	1	08A	2-SW-MOV-220A	SW/RADIATION MONITORING PUMP OUTLET ISOL	11715-FM-078A4/43/F3	TB	254'	--	R --	CLOSED	CLOSED	NO	N/A	N/A	
5231	1	08A	2-SW-MOV-220B	SW/RADIATION MONITORING PUMP OUTLET ISOL	11715-FM-078A4/43/F3	TB	254'	--	R --	CLOSED	CLOSED	NO	N/A	N/A	
5353	1	08A	2-SW-MOV-221A	SW/SW TO ARRAYS	11715-FM-078H/04/C8	SWVH	326'	--	R --	OPEN	OPEN	NO	N/A	N/A	
5360	1	08A	2-SW-MOV-221B	SW/SW TO ARRAYS	11715-FM-078H/04/C4	SWVH	326'	--	R --	OPEN	OPEN	NO	N/A	N/A	
5354	1	08A	2-SW-MOV-222A	SW/SW TO ARRAYS	11715-FM-078H/04/C7	SWVH	326'	--	R --	OPEN	OPEN	NO	N/A	N/A	
5361	1	08A	2-SW-MOV-222B	SW/SW TO ARRAYS	11715-FM-078H/04/C4	SWVH	326'	--	R --	OPEN	OPEN	NO	N/A	N/A	
5351	1	08A	2-SW-MOV-223A	SW/SW RESERVOIR ISOL	11715-FM-078H/04/D8	SWVH	326'	--	R --	OPEN	OPEN	NO	N/A	N/A	
5349	1	08A	2-SW-MOV-223B	SW/SW RESERVOIR ISOL	11715-FM-078H/04/D4	SWVH	326'	--	R --	OPEN	OPEN	NO	N/A	N/A	
7160	1	08B	1-AS-SOV-100A	AS/AIR EJECTOR STM INLET CONTMT ISOL PILOT	11715-FM-072A2/20/E5	TB	279'	8/Z	S R I	AIR	VENT	NO	11715-AS-006/4	N/A	
7162	1	08B	1-AS-SOV-100B	AS/AIR EJECTOR STM INLET CONTMT ISOL PILOT	11715-FM-072A2/20/E5	TB	279'	8/C	S R I	AIR	VENT	NO	11715-AS-007/4	N/A	
7108	1	08B	1-BD-SOV-100A	BD/SG 1A BLOWDOWN CONTMT ISOL PILOT	11715-FM-098A2/16/D5	AUX	244'	7/J	S R I	AIR	VENT	NO	11715-BD-001/6	N/A	
7110	2	08B	1-BD-SOV-100B	BD/SG BLOWDOWN CONTMT ISOL PILOT	11715-FM-098A2/16/D6	CONTMT	241'	8	S R I	AIR	VENT	NO	11715-BD-002/10	N/A	
7112	1	08B	1-BD-SOV-100C	BD/SG 1B BLOWDOWN CONTMT ISOL PILOT	11715-FM-098A3/15/D5	AUX	244'	7/J	S R I	AIR	VENT	NO	11715-BD-003/6	N/A	
7114	2	08B	1-BD-SOV-100D	BD/SG 1B BLOWDOWN CONTMT ISOL PILOT	11715-FM-098A3/15/D6	CONTMT	241'	8	S R I	AIR	VENT	NO	11715-BD-004/10	N/A	
7118	2	08B	1-BD-SOV-100F	BD/SG 1C BLOWDOWN CONTMT ISOL PILOT	11715-FM-098A4/17/C6	CONTMT	241'	8	S R I	AIR	VENT	NO	11715-BD-006/10	N/A	
7212	2	08B	1-CC-SOV-100A	CC/CC RETURN FROM COOLING CONTMT ISOL PILOT	11715-FM-079D4/22/E4	AUX	244'	7/K	S R I	AIR	VENT	NO	11715-CC-071/4	N/A	
7214	2	08B	1-CC-SOV-100B	CC/CC RETURN FROM COOLING COIL CONTMT ISOL PILOT	11715-FM-079D4/22/D4	AUX	244'	6/J	S R I	AIR	VENT	NO	11715-CC-072/4	N/A	

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NAI\_SSEL.DBF / 05/20/97 / 11:43:22  
 Sort Criteria: Class, ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col	SQRT NOTES	OP. Normal	ST. Desired	POWER REQD?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
7216	2	08B	1-CC-SOV-100C	CC/CC RETURN FROM COOLING COIL CONTMT ISOL PILOT	11715-FM-079D4/22/C4 AUX	244'	7/K	S R I	AIR	VENT	NO	11715-CC-073/4	N/A			
7218	1	08B	1-CC-SOV-101A	CC/THERMAL BARRIER DISCH CONTMT ISOL PILOT	11715-FM-079B1/21/D7 AUX	244'	7/K	S R I	AIR	VENT	NO	11715-CC-067/5	N/A			
7220	2	08B	1-CC-SOV-101B	CC/THERMAL BARRIER DISCH CONTMT ISOL PILOT	11715-FM-079B1/21/D6 CONTMT	241'	8	S R I	AIR	VENT	NO	11715-CC-074/5	N/A			
7222	1	08B	1-CC-SOV-102A	CC/RCP CC RETURN CONTMT ISOL PILOT	11715-FM-079B4/20/B6 AUX	244'	7/J	S R I	AIR	VENT	NO	11715-CC-078/4	N/A			
7224	2	08B	1-CC-SOV-102B	CC/RCP CC RETURN CONTMT ISOL PILOT	11715-FM-079B4/20/A3 CONTMT	241'	8	S R I	AIR	VENT	NO	11715-CC-075/8	N/A			
7226	1	08B	1-CC-SOV-102C	CC/RCP CC RETURN CONTMT ISOL PILOT	11715-FM-079B3/20/B6 AUX	244'	6.5/J	S R I	AIR	VENT	NO	11715-CC-079/5	N/A			
7228	2	08B	1-CC-SOV-102D	CC/RCP CC RETURN CONTMT ISOL PILOT	11715-FM-079B3/20/A3 CONTMT	241'	8	S R I	AIR	VENT	NO	11715-CC-076/6	N/A			
7230	1	08B	1-CC-SOV-102E	CC/RCP CC RETURN CONTMT ISOL PILOT	11715-FM-079B2/21/B6 AUX	244'	6.5/J	S R I	AIR	VENT	NO	11715-CC-080/4	N/A			
7232	2	08B	1-CC-SOV-102F	CC/RCP CC RETURN CONTMT ISOL PILOT	11715-FM-079B2/21/A4 CONTMT	241'	8	S R I	AIR	VENT	NO	11715-CC-077/6	N/A			
5093	1	08B	1-CC-SOV-103A	CC/RHR HX OUTLET CONTMT ISOL PILOT	11715-FM-079B1/21/B7 AUX	252'	7/L	S R I,27	AIR	VENT	NO	11715-CC-081/4	N/A			
5093	1	08B	1-CC-SOV-103A	CC/RHR HX OUTLET CONTMT ISOL PILOT	11715-FM-079B1/21/B7 AUX	252'	7/L	R A,27	AIR	AIR	YES	11715-CC-081/4	N/A			
5101	2	08B	1-CC-SOV-103B	CC/RHR HX OUTLET CONTMT ISOL PILOT	11715-FM-079B1/21/C7 AUX	252'	7/L	S R I,27	AIR	VENT	NO	11715-CC-082/4	N/A			
5101	1	08B	1-CC-SOV-103B	CC/RHR HX OUTLET CONTMT ISOL PILOT	11715-FM-079B1/21/C7 AUX	252'	7/L	R A,27	AIR	AIR	YES	11715-CC-082/4	N/A			
7238	1	08B	1-CC-SOV-104A1	CC/RCP CC CONTMT ISOL PILOT	11715-FM-079B2/21/E8 AUX	244'	6.2/J	S R I	AIR	VENT	NO	11715-CC-083/4	N/A			
7239	2	08B	1-CC-SOV-104A2	CC/RCP CC CONTMT ISOL PILOT	11715-FM-079B2/21/E8 AUX	244'	6.2/J	S R I	AIR	VENT	NO	11715-CC-083/4	N/A			
7242	1	08B	1-CC-SOV-104B1	CC/RCP CC CONTMT ISOL PILOT	11715-FM-079B3/20/E8 AUX	244'	6/J	S R I	AIR	VENT	NO	11715-CC-084/4	N/A			
7243	2	08B	1-CC-SOV-104B2	CC/RCP CC CONTMT ISOL PILOT	11715-FM-079B3/20/E8 AUX	244'	6/J	S R I	AIR	VENT	NO	11715-CC-084/4	N/A			
7246	1	08B	1-CC-SOV-104C1	CC/RCP CC CONTMT ISOL PILOT	11715-FM-079B4/20/E8 AUX	244'	6.5/J	S R I	AIR	VENT	NO	11715-CC-085/4	N/A			
7247	2	08B	1-CC-SOV-104C2	CC/RCP CC CONTMT ISOL PILOT	11715-FM-079B4/20/E8 AUX	244'	6.5/J	S R I	AIR	VENT	NO	11715-CC-085/4	N/A			
7250	1	08B	1-CC-SOV-105A	CC/CC RETURN FROM COOLING COIL CONTMT ISOL PILOT	11715-FM-079D4/22/E4 CONTMT	241'	8	S R I	AIR	VENT	NO	11715-CC-086/7	N/A			
7252	1	08B	1-CC-SOV-105B	CC/CC RETURN FROM COOLING COIL CONTMT ISOL PILOT	11715-FM-079D4/22/D4 CONTMT	241'	8	S R I	AIR	VENT	NO	11715-CC-087/8	N/A			
7254	1	08B	1-CC-SOV-105C	CC/CC RETURN FROM COOLING COIL CONTMT ISOL PILOT	11715-FM-079D4/22/C4 CONTMT	241'	8	S R I	AIR	VENT	NO	11715-CC-088/8	N/A			
1171	2	08B	1-CH-SOV-1113A1	CH/BAST TO VCT CONTROL PILOT	11715-CH-017/11	AUX	278'	8.5/J	R A	AIR	AIR	YES	11715-CH-017/11	1-EP-CB-26A		
1171	2	08B	1-CH-SOV-1113A1	CH/BAST TO VCT CONTROL PILOT	11715-CH-017/11	AUX	278'	8.5/J	S R I	AIR	VENT	NO	11715-CH-017/11	1-EP-CB-26A		

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
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 Sort Criteria: Class, ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP Normal	ST. Desired	POWER REQD?	SUPPORTING SYS. Dwg. No./Rev.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10) (11)	(12)	(13)	(14)	(15)	(16)	(17)		
1172	2	08B	1-CH-SOV-1113A2	CH/BAST TO VCT CONTROL PILOT	11715-CH-017/11	AUX	278'	8	5/J	R	A	AIR	AIR	YES	11715-CH-017/11 1-EP-CB-26A		
1172	2	08B	1-CH-SOV-1113A2	CH/BAST TO VCT CONTROL PILOT	11715-CH-017/11	AUX	278'	8	5/J	S	R	I	AIR	VENT	NO	11715-CH-017/11 1-EP-CB-26A	
1198	2	08B	1-CH-SOV-1201	CH/EXCESS LETDOWN HX ISOL PILOT	11715-CH-079/3	CONTMT	236'	6		R	--	VENT	VENT	NO	11715-FK-0010 N/A		
7131A	1	08B	1-CH-SOV-1204A	CH/LETDOWN LINE CONTMT ISOL PILOT	11715-CH-100/1	CONTMT	241'	9		R	I	VENT	VENT	NO	11715-CH-100/1 N/A		
7132A	2	08B	1-CH-SOV-1204B	CH/LETDOWN LINE CONTMT ISOL PILOT	11715-CH-070/5	AUX	245'	6	5/J	S	R	I	AIR	VENT	NO	11715-CH-070/5 N/A	
1108	1, 2	08B	1-CH-SOV-1303A	CH/SEAL WATER LEAKOFF PILOT	11715-CH-065/3	CONTMT	218'	18	5	R	21,36	VENT	VENT	NO	11715-FK-001E 1-CH-HCV-1303A		
1109	1, 2	08B	1-CH-SOV-1303B	CH/SEAL WATER LEAKOFF PILOT	11715-CH-066/3	CONTMT	219'	11	5	R	21,36	VENT	VENT	NO	11715-FK-001D 1-CH-HCV-1303B		
1110	1, 2	08B	1-CH-SOV-1303C	CH/SEAL WATER LEAKOFF PILOT	11715-CH-067/3	CONTMT	219'	7		R	21,36	VENT	VENT	NO	11715-FK-001D 1-CH-HCV-1303C		
1118	2	08B	1-CH-SOV-1307	CH/SEAL BYPASS OUTLET ISOL PILOT	11715-CH-074/4	CONTMT	255' A	8	5	R	36	VENT	VENT	NO	11715-FK-001D 1-CH-HCV-1307		
1085	1	08B	1-CH-SOV-1310	CH/CHARGING ISOL PILOT	11715-CH-069/3	CONTMT	222'	11	5	R	--	VENT	VENT	NO	11715-FK-001D N/A		
2007	1, 2	08B	1-CH-SOV-1311	CH/AUX SPRAY ISOL PILOT	11715-CH-003/4	CONTMT	220'	11		R	28	VENT	VENT	NO	11715-FK-001D N/A		
1207	2	08B	1-CH-SOV-1389	CH/EXCESS LETDOWN FLOW DIRECTING PILOT	11715-CH-075/3	CONTMT	234'	6		R	--	VENT	VENT	NO	11715-FK-010/11 N/A		
7140	1	08B	1-CV-SOV-150A	CV/ATMOS CLEANUP CONTMT ISOL PILOT	11715-FM-092A2/13/B4	AUX	244'	6	J	S	R	I	AIR	VENT	NO	11715-CV-002/6 N/A	
7142	2	08B	1-CV-SOV-150B	CV/ATMOS CLEANUP CONTMT ISOL PILOT	11715-FM-092A2/13/B5	AUX	244'	6	J	S	R	I	AIR	VENT	NO	11715-CV-003/7 N/A	
7144	1	08B	1-CV-SOV-150C	CV/ATMOS CLEANUP CONTMT ISOL PILOT	11715-FM-092A2/13/C4	AUX	244'	6	J	S	R	I	AIR	VENT	NO	11715-CV-004/7 N/A	
7146	2	08B	1-CV-SOV-150D	CV/ATMOS CLEANUP CONTMT ISOL PILOT	11715-FM-092A2/13/C5	AUX	244'	6	J	S	R	I	AIR	VENT	NO	11715-CV-005/6 N/A	
7148	1	08B	1-DA-SOV-100A	DA/SUMP DISCH CONTMT ISOL PILOT	11715-FM-090A1/15/E7	AUX	244'	6	J	R	I	VENT	VENT	NO	11715-DA-018/4 N/A		
7150	2	08B	1-DA-SOV-100B	DA/SUMP DISCH CONTMT ISOL PILOT	11715-FM-090C3/16/C3	CONTMT	241'	9		R	I	VENT	VENT	NO	11715-DA-019/7 N/A		
7152	1	08B	1-DG-SOV-100A	DG/PRIMARY DRAIN XFER CONTMT ISOL PILOT	11715-FM-090C1/15/B8	AUX	244'	7	J	R	I	VENT	VENT	NO	11715-DG-006/5 N/A		
7154	2	08B	1-DG-SOV-100B	DG/PRIMARY DRAIN XFER CONTMT ISOL PILOT	11715-FM-090C1/17/B7	CONTMT	241'	7		R	I	VENT	VENT	NO	11715-DG-005/5 N/A		
5543	1	08B	1-EG-SOV-600HA	EG/AIR START SOLENOID VALVE	11715-FM-107A1/09/E6	SB	270'	DG		S	R	36	OFF	ON	YES	N/A	EDG-1H
5544	2	08B	1-EG-SOV-600HB	EG/AIR START SOLENOID VALVE	11715-FM-107A2/09/E6	SB	270'	DG		S	R	36	OFF	ON	YES	N/A	EDG-1H
5545	1	08B	1-EG-SOV-600JA	EG/AIR START SOLENOID VALVE	11715-FM-107A3/10/E6	SB	270'	DG		S	R	36	OFF	ON	YES	N/A	EDG-1J
5546	2	08B	1-EG-SOV-600JB	EG/AIR START SOLENOID VALVE	11715-FM-107A4/10/E6	SB	270'	DG		S	R	36	OFF	ON	YES	N/A	EDG-1J
4210A1		08B	1-FW-SOV-1478-1	SOLENOID OPERATED VALVE		SB	294'	4/D, MER#1		S	R						

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
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 Sort Criteria: Class, ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elv.	LOCATION Rm. or Row/Col	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D	SUPPORTING SYS. DWG. NO./REV.	SYS. & SUPPORTING COMPONENTS	REQ'D INTERCONNECTIONS	REG. ISSUE
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(17)
4210A2	08B	1-FW-SOV-1478-2	SOLENOID OPERATED VALVE		SB	294'	4/D, MER#1	S	R							
4211A1	08B	1-FW-SOV-1479-1	SOLENOID OPERATED VALVE		SB	294'	3/D, MER#1	S	R							
4211A2	08B	1-FW-SOV-1479-2	SOLENOID OPERATED VALVE		SB	294'	3/D, MER#1	S	R							
4210B1	08B	1-FW-SOV-1488-1	SOLENOID OPERATED VALVE		SB	294'	4/D	S	R							
4210B2	08B	1-FW-SOV-1488-2	SOLENOID OPERATED VALVE		SB	294'	4/D	S	R							
4211B1	08B	1-FW-SOV-1489-1	SOLENOID OPERATED VALVE		SB	294'	3/D	S	R							
4211B2	08B	1-FW-SOV-1489-2	SOLENOID OPERATED VALVE		SB	294'	3/D	S	R							
4210C1	08B	1-FW-SOV-1498-1	SOLENOID OPERATED VALVE		SB	294'	4/D, MER#1	S	R							
4210C2	08B	1-FW-SOV-1498-2	SOLENOID OPERATED VALVE		SB	294'	4/D, MER#1	S	R							
4211C1	08B	1-FW-SOV-1499-1	SOLENOID OPERATED VALVE		SB	294'	3/D	S	R							
4211C2	08B	1-FW-SOV-1499-2	SOLENOID OPERATED VALVE		SB	294'	3/D	S	R							
7044	1	08B	1-HC-SOV-104A	HS/CONTAINMENT ATM PURGE PILOT	11715-FMC-092A1/1/C4	AUX	244'	6/H	S	R	1,24,38	VENT	AIR	YES	13075-HC-002/1	1-EP-CB-80E
7044	1	08B	1-HC-SOV-104A	HS/CONTAINMENT ATM PURGE PILOT	11715-FMC-092A1/1/C4	AUX	244'	6/H	R		1,24,39	VENT	VENT	NO	13075-HC-002/1	1-EP-CB-80E
7046	1	08B	1-HC-SOV-104B	HC/CONTAINMENT ATM PURGE ISOL PILOT	11715-FMC-092A1/1/C4	AUX	244'	6/H	S	R	1,24,38	VENT	AIR	YES	13075-HC-003/1	1-EP-CB-80B
7046	1	08B	1-HC-SOV-104B	HC/CONTAINMENT ATM PURGE ISOL PILOT	11715-FMC-092A1/1/C4	AUX	244'	6/H	R		1,24,39	VENT	VENT	NO	13075-HC-003/1	1-EP-CB-80B
7053	1	08B	1-HC-SOV-105A	HC/CONTAINMENT ATM RETURN ISOL PILOT	11715-FMC-092A1/1/E8	AUX	244'	7/K	S	R	1,24,38	VENT	AIR	YES	N/A	1-EP-CB-80E
7053	1	08B	1-HC-SOV-105A	HC/CONTAINMENT ATM RETURN ISOL PILOT	11715-FMC-092A1/1/E8	AUX	244'	7/K	R		1,24,39	VENT	VENT	NO	N/A	1-EP-CB-80E
7051	1	08B	1-HC-SOV-105B	HC/CONTAINMENT ATM RETURN ISOL PILOT	11715-FMC-092A1/1/E8	AUX	244'	7/K	S	R	1,24,38	VENT	AIR	YES	11715-HC-005	1-EP-CB-80B
7051	1	08B	1-HC-SOV-105B	HC/CONTAINMENT ATM RETURN ISOL PILOT	11715-FMC-092A1/1/E8	AUX	244'	7/K	R		1,24,39	VENT	VENT	NO	11715-HC-005	1-EP-CB-80B
7055	2	08B	1-HC-SOV-106A	HC/CONTAINMENT ATM PURGE ISOL PILOT	11715-FMC-092A1/1/C5	AUX	244'	6/J	S	R	1,24,38	VENT	AIR	YES	13075-HC-006/1	1-EP-CB-80G
7055	2	08B	1-HC-SOV-106A	HC/CONTAINMENT ATM PURGE ISOL PILOT	11715-FMC-092A1/1/C5	AUX	244'	6/J	R		1,24,39	VENT	VENT	NO	13075-HC-006/1	1-EP-CB-80G

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

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 Sort Criteria: Class, ID Number  
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 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQD?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
7057	2	08B	1-HC-SOV-106B	HC/CONTAINMENT ATM PURGE ISOL PILOT	11715-FMC-092A1/1/C5	AUX 244'	6/I	S R	1,24,38	VENT	AIR	YES	13075-HC-007/1	1-EP-CB-80D	
7057	2	08B	1-HC-SOV-106B	HC/CONTAINMENT ATM PURGE ISOL PILOT	11715-FMC-092A1/1/C5	AUX 244'	6/J	R	1,24,39	VENT	VENT	NO	13075-HC-007/1	1-EP-CB-80D	
7064	2	08B	1-HC-SOV-107A	HC/CONTAINMENT ATM RETURN ISOL PILOT	11715-FMC-092A1/1/C8	AUX 244'	7/I	S R	1,24,38	VENT	AIR	YES	13075-HC-008/1	1-EP-CB-80G	
7064	2	08B	1-HC-SOV-107A	HC/CONTAINMENT ATM RETURN ISOL PILOT	11715-FMC-092A1/1/C8	AUX 244'	7/J	R	1,24,39	VENT	VENT	NO	13075-HC-008/1	1-EP-CB-80G	
7062	2	08B	1-HC-SOV-107B	HC/CONTAINMENT ATM RETURN ISOL PILOT	11715-FMC-092A1/1/C8	AUX 244'	7/J	S R	1,24,38	VENT	AIR	YES	13075-HC-009/1	1-EP-CB-80D	
7062	2	08B	1-HC-SOV-107B	HC/CONTAINMENT ATM RETURN ISOL PILOT	11715-FMC-092A1/1/C8	AUX 244'	7/J	R	1,24,39	VENT	VENT	NO	13075-HC-009/1	1-EP-CB-80D	
7062A	2	08B	1-HC-TV-105	HC/HYDROGEN ANALYZER UNIT 1 DISCH ISOL	11715-FMC-092A1/1/B8	AUX 244'	7/J	R	1,38	CLOSED	CLOSED	NO	N/A	N/A	
1241	1, 2	08B	1-HRS-SOV-1623	HRS/RC COLD LEG SAMPLE COOLER ISOL PILOT	11715-FM-089D1/16/D5	AUX 259'	7.6/K	S R	24	VENT	AIR	YES	11715-HRS-014/3	INST AIR	
1227	1, 2	08B	1-HRS-SOV-1625	HRS/HOT LEG SAMPLE COOLER INLET ISOL PILOT	11715-FM-089D1/16/E6	AUX 259'	7.6/K	S R	24	VENT	AIR	YES	11715-HRS-016/3	INST AIR	
4269	1, 2	08B	1-HRS-SOV-1627	HRS/SAMPLING SYSTEM ISOL PILOT	11715-FM-089D1/16/F4	AUX 259'	7.6/K	S R	24	VENT	AIR	YES	N/A	INST AIR	
4267	1, 2	08B	1-HRS-SOV-1628	SS/SAMPLING SYSTEM ISOL	11715-FM-108A1/03/E5	AUX 259'	--	R	--	VENT	VENT	NO	N/A	N/A	
5425R	1	08B	1-HV-SOV-1200A	HV/CND WTR PUMP SEAL FLOW CONTROL	11715-FB-040D1/15	SB 256'	CHILLER RM	S R	--	OP/CL	OPEN	YES	N/A	N/A	
5425S	1	08B	1-HV-SOV-1200B	HV/CND WTR PUMP SEAL FLOW CONTROL	11715-FB-040D1/15	SB 256'	CHILLER RM	S R	--	OP/CL	OPEN	YES	N/A	N/A	
5425T	1	08B	1-HV-SOV-1200C	HV/CND WTR PUMP SEAL FLOW CONTROL	11715-FB-040D1/15	SB 256'	CHILLER RM	S R	--	OP/CL	OPEN	YES	N/A	N/A	
7256	1	08B	1-IA-SOV-102A	IA/INSTR AIR HEADER CONTMT ISOL PILOT	11715-FM-082N1/8/D5	AUX 244'	6/J	R	1	VENT	VENT	NO	11715-IA-015/3	N/A	
7258	1	08B	1-IA-SOV-102B	IA/INSTR AIR HDR CONTMT ISOL PILOT	11715-FM-082N1/8/D3	AUX 244'	6/J	R	1	VENT	VENT	NO	11715-IA-016/3	N/A	
7164	1	08B	1-LM-SOV-100A	LM/LEAKAGE MONITORING CONTMT ISOL PILOT	11715-FM-092A1/15/F7	AUX 259'	6.5/J	S R	1	AIR	VENT	NO	11715-LM-001/5	N/A	
7166	2	08B	1-LM-SOV-100B	LM/LEAKAGE MONITORING CONTMT ISOL PILOT	11715-FM-092A1/15/F6	AUX 259'	6.5/J	S R	1	AIR	VENT	NO	11715-LM-002/5	N/A	
7168	1	08B	1-LM-SOV-100C	LM/LEAKAGE MONITORING CONTMT ISOL PILOT	11715-FM-092A1/15/F6	AUX 259'	6.5/JK	S R	1	AIR	VENT	NO	11715-LM-003/5	N/A	
7170	2	08B	1-LM-SOV-100D	LM/LEAKAGE MONITORING CONTMT ISOL PILOT	11715-FM-092A1/15/F5	AUX 259'	6.5/J	S R	1	AIR	VENT	NO	11715-LM-004/5	N/A	

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA1\_SSEL.DBF / 05/20/97 / 11:43:22  
 Sort Criteria: Class\_ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT MOTES	DP Normal	ST. Desired	POWER REQD?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10) (11)	(12)	(13)	(14)	(15)	(16)	(17)
7172	1	08B	1-LM-SOV-100E	LM/LEAKAGE MONITORING CONTMT ISOL PILOT	11715-FM-092A1/15/F6 AUX	259'	6.5/J	S R I	AIR	VENT	NO	11715-LM-005/5	N/A	
7174	2	08B	1-LM-SOV-100F	LM/LEAKAGE MONITORING CONTMT ISOL PILOT	11715-FM-092A1/15/F5 AUX	259'	6.5/J	S R I	AIR	VENT	NO	11715-LM-006/5	N/A	
7176	1	08B	1-LM-SOV-100G	LM/LEAKAGE MONITORING CONTMT ISOL PILOT	11715-FM-092A1/15/F6 AUX	259'	6/J	S R I	AIR	VENT	NO	11715-LM-007/5	N/A	
7178	2	08B	1-LM-SOV-100H	LM/LEAKAGE MONITORING CONTMT ISOL PILOT	11715-FM-092A1/15/F6 AUX	259'	6/J	S R I,31	AIR	VENT	NO	11715-LM-008	N/A	
7180	1	08B	1-LM-SOV-101A	LM/PRESS SENSOR CONTMT ISOL PILOT	11715-FM-092A1/15/D5 AUX	244'	7/J	S R I	AIR	VENT	NO	11715-LM-017/5	N/A	
7182	2	08B	1-LM-SOV-101B	LM/PRESS SENSOR CONTMT ISOL PILOT	11715-FM-092A1/15/D5 AUX	246'	7/J	S R I	AIR	VENT	NO	11715-LM-018/5	N/A	
7184	1	08B	1-LM-SOV-101C	LM/PRESS SENSOR CONTMT ISOL PILOT	11715-FM-092A1/15/D5 AUX	244'	7/J	S R I	AIR	VENT	NO	11715-LM-017/5	N/A	
7186	2	08B	1-LM-SOV-101D	LM/PRESS SENSOR CONTMT ISOL PILOT	11715-FM-092A1/15/D5 AUX	246'	7/J	S R I	AIR	VENT	NO	11715-LM-018/5	N/A	
4018	1, 2	08B	1-MS-SOV-101A1	MS/SG A MSIV PILOT VALVE	11715-FM-070B1/19/E4 QSPH	272'	4.5/GB	S R --	AIR	VENT	YES	N/A	N/A	
4019	1, 2	08B	1-MS-SOV-101A2	MS/SG A MSIV PILOT VALVE	11715-FM-070B1/19/E4 QSPH	272'	4.5/GB	S R --	AIR	VENT	YES	N/A	N/A	
4020	1, 2	08B	1-MS-SOV-101A6	MS/SG A MSIV PILOT VALVE	11715-FM-070B1/19/F4 QSPH	272'	4.5/GB	S R --	AIR	VENT	YES	N/A	N/A	
4021	1, 2	08B	1-MS-SOV-101A7	MS/SG A MSIV PILOT VALVE	11715-FM-070B1/19/D3 QSPH	272'	4.5/GB	S R --	AIR	VENT	YES	N/A	N/A	
4044	1, 2	08B	1-MS-SOV-101B1	MS/SG B MSIV PILOT VALVE	11715-FM-070B2/19/E4 QSPH	272'	4.5/GB	S R --	AIR	VENT	YES	11715-MS-111/9	N/A	
4045	1, 2	08B	1-MS-SOV-101B2	MS/SG B MSIV PILOT VALVE	11715-FM-070B2/19/E4 QSPH	272'	4.5/GB	S R --	AIR	VENT	YES	11715-MS-111/9	N/A	
4046	1, 2	08B	1-MS-SOV-101B6	MS/SG B MSIV PILOT VALVE	11715-FM-070B2/19/E4 QSPH	272'	4.5/GB	S R --	AIR	VENT	YES	11715-MS-111/9	N/A	
4047	1, 2	08B	1-MS-SOV-101B7	MS/SG B MSIV PILOT VALVE	11715-FM-070B2/19/F4 QSPH	272'	4.5/GB	S R --	AIR	VENT	YES	11715-MS-111/9	N/A	
4070	1, 2	08B	1-MS-SOV-101C1	MS/SG C MSIV PILOT VALVE	11715-FM-070B3/23/D4 QSPH	272'	4.5/GB	S R --	AIR	VENT	YES	11715-MS-112/9	N/A	
4071	1, 2	08B	1-MS-SOV-101C2	MS/SG C MSIV PILOT VALVE	11715-FM-070B3/23/D4 QSPH	272'	4.5/GB	S R --	AIR	VENT	YES	11715-MS-112/9	N/A	
4072	1, 2	08B	1-MS-SOV-101C4	MS/SG C MSIV PILOT VALVE	11715-FM-070B3/23/D4 QSPH	272'	4.5/GB	S R --	AIR	VENT	YES	11715-MS-112/9	N/A	
4073	1, 2	08B	1-MS-SOV-101C5	MS/SG C MSIV PILOT VALVE	11715-FM-070B3/23/D4 QSPH	272'	4.5/GB	S R --	AIR	VENT	YES	11715-MS-112/9	N/A	
4074	1, 2	08B	1-MS-SOV-101C6	MS/SG C MSIV PILOT VALVE	11715-FM-070B3/23/D4 QSPH	272'	4.5/GB	S R --	AIR	VENT	YES	11715-MS-112/9	N/A	
4075	1, 2	08B	1-MS-SOV-101C7	MS/SG C MSIV PILOT VALVE	11715-FM-070B3/23/D4 QSPH	272'	4.5/GB	S R --	AIR	VENT	YES	11715-MS-112/9	N/A	
7102	2	08B	1-MS-SOV-109A	MS/STEAM DRAIN CONTMT ISOL PILOT	11715-FM-070A1/26/A8 MSVH	273'	4.5/GA	S R 1,5,36	AIR	VENT	NO	11715-MS-113/6	N/A	
7103	1	08B	1-MS-SOV-109B	MS/STEAM DRAIN CONTMT ISOL PILOT	11715-FM-070A1/26/A8 MSVH	273'	4.5/GA	S R 1,5,36	AIR	VENT	NO	11715-MS-113/6	N/A	
7105	1	08B	1-MS-SOV-110A	MS/SG BLOWDOWN CONTMT ISOL PILOT	11715-FM-070B3/23/A4 MSVH	271'	4.6/GA	S R I	AIR	VENT	NO	11715-MS-114/3	N/A	

NORTH ANNA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
COMPOSITE SSEL  
(Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA1\_SSEL.DBF / 05/20/97 / 11:43:22  
Sort Criteria: Class, ID Number  
Filter Criteria: <none>  
Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Fir. Elev.	LOCATION Rm. or Row/Col.	SORT NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING DNG. NO./REV.	SYS. & SUPPORTING COMPONENTS	REQ'D INTERCONNECTIONS	REG. ISSUE	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
7106	1	08B	1-MS-SOV-110B	MS/SG BLOWDOWN CONTMT ISOL PILOT	11715-FM-070B3/23/A4	MSVH	271'	4.6/GA	S	R	I	AIR	VENT	NO	11715-MS-114/3	N/A
4084	1	08B	1-MS-SOV-111A	MS/TDAFW STEAM ADMISSION PILOT	11715-FM-070A3/26/E5	MSVH	252'	5.5	S	R	--	AIR	VENT	YES	11715-MS-115/8	N/A
4086	2	08B	1-MS-SOV-111B	MS/TDAFW STEAM ADMISSION PILOT	11715-FM-070A3/26/E4	MSVH	252'	5.5	S	R	--	AIR	VENT	YES	11715-MS-116/10	N/A
5119B	1	08B	1-NS-SOV-101	NS/NEUTRON SHIELD SURGE TANK OUTLET ISOL PILOT	11715-FM-079B5/21/D3	CONTMT	262'	14	R	34		VENT	VENT	NO	11715-MS-001	N/A
3001	1	08B	1-RC-SOV-101A-1	RC/RV VENT VALVE	11715-FM-093A3/22/A5	CONTMT	262'	TOP OF RV HEAD	R	--		CLOSED	CLOSED	NO	N/A	N/A
3002	2	08B	1-RC-SOV-101A-2	RC/RV VENT VALVE	11715-FM-093A3/22/A5	CONTMT	262'	TOP OF RV HEAD	R	--		CLOSED	CLOSED	NO	N/A	N/A
3003	1	08B	1-RC-SOV-101B-1	RC/RV VENT VALVE	11715-FM-093A3/22/A5	CONTMT	262'	TOP OF RV HEAD	R	--		CLOSED	CLOSED	NO	N/A	N/A
3004	2	08B	1-RC-SOV-101B-2	RC/RV VENT VALVE	11715-FM-093A3/22/A5	CONTMT	262'	TOP OF RV HEAD	R	--		CLOSED	CLOSED	NO	N/A	N/A
3013	1	08B	1-RC-SOV-102A1	RC/PZR VENT VALVE	11715-FM-093B1/22/C3	CONTMT	291'	PC	R	--		CLOSED	CLOSED	NO	N/A	N/A
3014	2	08B	1-RC-SOV-102A2	RC/PZR VENT VALVE	11715-FM-093B1/22/C3	CONTMT	291'	PC	R	--		CLOSED	CLOSED	NO	N/A	N/A
3015	1	08B	1-RC-SOV-102B1	RC/PZR VENT VALVE	11715-FM-093B1/22/C3	CONTMT	291'	PC	R	--		CLOSED	CLOSED	NO	N/A	N/A
3016	2	08B	1-RC-SOV-102B2	RC/PZR VENT VALVE	11715-FM-093B1/22/C3	CONTMT	291'	PC	R	--		CLOSED	CLOSED	NO	N/A	N/A
2021	2	08B	1-RC-SOV-1455C-1	GN/PZR PORV PILOT	11715-FM-105A1/20/F5	CONTMT	308'	9.5	S	R	33	VENT	AIR	YES	11715-RC-111/12 ;11715-FK-001D	N/A
2022	2	08B	1-RC-SOV-1455C-2	GN/PZR PORV PILOT	11715-FM-105A1/20/F5	CONTMT	308'	9.5	S	R	33	VENT	AIR	YES	11715-RC-111/12 ;11715-FK-001D	N/A
2023	2	08B	1-RC-SOV-1455C-3	GN/PZR PORV PILOT	11715-FM-105A1/20/F5	CONTMT	308'	9.5	S	R	33	AIR	VENT	YES	11715-RC-111/12	N/A
2026	2	08B	1-RC-SOV-1456-1	GN/PZR PORV PILOT	11715-FM-105A1/20/F6	CONTMT	308'	9.5	S	R	33	VENT	AIR	YES	11715-RC-109/11 ;11715-FK-001D	N/A
2027	2	08B	1-RC-SOV-1456-2	GN/PZR PORV PILOT	11715-FM-105A1/20/F6	CONTMT	308'	9.5	S	R	33	VENT	AIR	YES	11715-RC-109/11 ;11715-FK-001D	N/A
2028	2	08B	1-RC-SOV-1456-3	GN/PZR PORV PILOT	11715-FM-105A1/20/F6	CONTMT	308'	9.5	S	R	33	AIR	VENT	YES	11715-RC-109/11	N/A
7138	1	08B	1-RC-SOV-1519A	RC/PRT PW FILL CONTMT ISOL PILOT	11715-RC-036/5	AUX	244'	6.5/J	R	I		VENT	VENT	NO	11715-RC-036/6	N/A
1192	2	08B	1-RC-SOV-1557A	RC/RC XS LETDOWN ISOL PILOT	11715-RC-051/4	CONTMT	245'	13 A	R	--		VENT	VENT	NO	VIMS27749-27750 11715-FK-001E	N/A
1194	2	08B	1-RC-SOV-1557B	RC/RC XS LETDOWN ISOL PILOT	11715-RC-052/4	CONTMT	243'	13 B	R	--		VENT	VENT	NO	VIMS28208-28211 11715-FK-001D	N/A
1196	2	08B	1-RC-SOV-1557C	RC/RC XS LETDOWN ISOL PILOT	11715-RC-053/4	CONTMT	243'	7.5 C	R	--		VENT	VENT	NO	VIMS28616-28218 11715-FK-001D	N/A



NORTH ANVA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA1\_SSEL.DBF / 05/20/97 / 11:43:22  
 Sort Criteria: Class, ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN	CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Fir. Elv.	LOCATION Re. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQD?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
7188	1	08B	1-RM-SOV-100A	RM/RADIATION MONITORING RETURN CONTMT ISOL PILOT	11715-FM-082N3/8/C5	AUX	245'	6 5/JK	S	R I	AIR	VENT	NO	11715-RM-024/4	N/A	
7190	1	08B	1-RM-SOV-100B	RM/RADIATION MONITORING CONTMT ISOL PILOT	11715-FM-082N3/8/D5	AUX	244'	7/J	S	R I	AIR	VENT	NO	11715-RM-025/4	N/A	
7191A	2	08B	1-RM-SOV-100C	RM/RADIATION MONITORING CONTMT ISOL PILOT	11715-FM-082N3/8/D4	CONTMT	259'	8	S	R I	AIR	VENT	NO	11715-RM-026/7	N/A	
7192A	2	08B	1-RM-SOV-100D	RM/RADIATION MONITORING RETURN CONTMT ISOL PILOT	11715-FM-082N3/8/C5	AUX	245'	6 5/JK	S	R I	AIR	VENT	NO	11715-RM-027/4	N/A	
7029	2	08B	1-RS-MOV-156B	RS/OUTSIDE RECIRC SPRAY PUMP B DISCH ISOL	11715-FM-091A4/24/D5	SFGD	256'	--	R	I	OPEN	OPEN	NO	N/A	1-EP-MC-21	
7123A	1	08B	1-SI-SOV-100A	SI/NITROGEN HEADER CONTMT ISOL PILOT	11715-FM-096B1/17/F3	AUX	246'	6 7/K	S	R I	AIR	VENT	NO	11715-SI-034/5	N/A	
7123B	1	08B	1-SI-SOV-100B	SI/NITROGEN HEADER CONTMT ISOL PILOT	11715-FM-096B1/17/F3	AUX	246'	6 7/K	S	R I	AIR	VENT	NO	11715-SI-034/5	N/A	
7124	1	08B	1-SI-SOV-101	SI/WASTE GAS FILTER CONTMT ISOL PILOT	11715-FM-096B1/17/E4	AUX	244'	7/L	S	R I	AIR	VENT	NO	11715-SI-013/5	N/A	
7130	2	08B	1-SI-SOV-1842	SI/ACCUM TEST LINE CONTMT ISOL PILOT	11715-FM-096B1/17/C4	CONTMT	262'	13	R	I	VENT	VENT	NO	11715-SI-033/7	N/A	
2047	1, 2	08B	1-SI-SOV-1850B	SI/ACCUM TEST ISOL PILOT	11715-SI-022/3	CONTMT	221'	1.5	R	21,36,19	VENT	VENT	NO	11715-FK-001E	1-SI-HCV-1850B	
4274	1, 2	08B	1-SI-SOV-1850D	SI/ACCUM TEST ISOL PILOT	11715-SI-024/2	CONTMT	221'	13	R	22,36	VENT	VENT	NO	11715-FK-001G	1-SI-HCV-1850D	
4277	1, 2	08B	1-SI-SOV-1850F	SI/ACCUM TEST ISOL PILOT	11715-SI-026/3	CONTMT	221'	7.5	R	22	VENT	VENT	NO	11715-FK-001D;1 1715-FK-001D	N/A	
7126	1	08B	1-SI-SOV-1859	SI/ACCUM TEST LINE CONTMT ISOL PILOT	11715-FM-096A2/23/F7	SFGD	267'	--	R	I	VENT	VENT	NO	11715-SI-035/7	N/A	
7128	2	08B	1-SI-SOV-1936	SI/WASTE GAS FLTR RETURN CONTMT ISOL PILOT	11715-FM-096B1/17/E5	CONTMT	241'	8	R	I	VENT	VENT	NO	11715-SI-014/9	N/A	
7194	1	08B	1-SS-SOV-100A	SS/PZR LIQUID SAMPLING CONTMT ISOL PILOT	11715-FM-089D1/16/C8	CONTMT	253'	9	R	I	VENT	VENT	NO	11715-SS-001/6	N/A	
7196	2	08B	1-SS-SOV-100B	SS/PZR LIQUID SAMPLING CONTMT ISOL PILOT	11715-FM-089D1/16/C8	AUX	244'	7/K	R	I	VENT	VENT	NO	11715-SS-002/3	N/A	
7200B	1	08B	1-SS-SOV-101A	SS/PRESSURIZER VAPOR SAMPLE CONTMT ISOL PILOT	11715-FM-089D1/16/C8	CONTMT	253'	8.8	R	I	VENT	VENT	NO	N/A	N/A	
7200D	2	08B	1-SS-SOV-101B	SS/PRESSURIZER VAPOR SAMPLE CONTMT ISOL PILOT	11715-FM-089D1/16/C8	AUX	244'	7/K	R	I	VENT	VENT	NO	N/A	N/A	

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA1 SSEL.DBF / 05/20/97 / 11:43:22  
 Sort Criteria: Class, ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO	EQUIP TRAIN CLASS	MARK NO	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No /Rev./Zone	Building	EQUIPMENT Flr. Elev	LOCATION Rm. or Row/Col	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D	SUPPORTING SYS. DMG. NO /REV.	REQ'D & SUPPORTING COMPONENTS	INTERCONNECTIONS	REG. ISSUE	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	
7198	1	08B	1-SS-SOV-104A	SS/PZR RLF TK GAS SAMPLING ISOL PILOT	11715-FM-089D1/16/C8	CONTMT	253'	8	B	R	1	VENT	VENT	NO	11715-SS-009/5	N/A	
7200	2	08B	1-SS-SOV-104B	SS/PZR RLF TK GAS SAMPLING ISOL PILOT	11715-FM-089D1/16/C8	AUX	244'	7	K	R	1	VENT	VENT	NO	11715-SS-010/4	N/A	
7202	1	08B	1-SS-SOV-112A	SS/SG SURFACE SAMPLE ISOL	11715-SS-028/7	CONTMT	253'	8	5	R	1	VENT	VENT	NO	11715-SS-028/7	N/A	
7204	2	08B	1-SS-SOV-112B	SS/SG SURFACE SAMPLE ISOL PILOT	11715-FM-089B3/16/C3	AUX	248'	6	JK	R	1	VENT	VENT	NO	11715-SS-029/4	N/A	
1236	1, 2	08B	1-SS-TV-102A	SS/COLD LEG SAMPLE HEADER ISOL	11715-FM-089D1/16/D6	CONTMT	241'	8	5	S	R	A,40	CLOSED	OP/CL	YES	11715-SS-005/5; 11715-FK-001D	N/A
1236	1	08B	1-SS-TV-102A	SS/COLD LEG SAMPLE HEADER ISOL	11715-FM-089D1/16/D6	CONTMT	253' A	8	5	R	1,40	CLOSED	CLOSED	NO	11715-SS-005/5; 11715-FK-001D	N/A	
1237	1, 2	08B	1-SS-TV-102B	SS/RC COLD LEG SAMPLE ISOL	11715-FM-089D1/16/D6	AUX	245'	7	K	S	R	A,40	CLOSED	OP/CL	YES	11715-SS-006/3	N/A
1237	2	08B	1-SS-TV-102B	SS/RC COLD LEG SAMPLE ISOL	11715-FM-089D1/16/D6	AUX	245'	7	K	R	1,40	CLOSED	CLOSED	NO	11715-SS-006/3	N/A	
426	1, 2	08B	1-SS-TV-103A	SS/SAMPLING SYSTEM ISOL	11715-FM-089D1/16/F7	CONTMT	241'	7	5	S	R	A,40	CLOSED	OP/CL	YES	11715-SS-013/3; 11715-SS-008	N/A
4264	1	08B	1-SS-TV-103A	SS/SAMPLING SYSTEM ISOL	11715-FM-089D1/16/F7	CONTMT	226'	7	5	R	1,40	CLOSED	CLOSED	NO	11715-SS-013/3; 11715-SS-008	N/A	
4265	1, 2	08B	1-SS-TV-103B	SS/SAMPLING SYSTEM ISOL	11715-FM-089D1/16/F5	AUX	245'			S	R	A,40	CLOSED	OP/CL	YES	N/A	N/A
4265	2	08B	1-SS-TV-103B	SS/SAMPLING SYSTEM ISOL	11715-FM-089D1/16/F5	AUX				R	1,40	CLOSED	CLOSED	NO	N/A	N/A	
1224	1, 2	08B	1-SS-TV-106A	SS/HOT LEG SAMPLE HEADER ISOL	11715-FM-089D1/16/E6	CONTMT	241'	8	5	S	R	A,40	CLOSED	OP/CL	YES	11715-SS-011/6; 11715-FK-001D	N/A
1224	1	08B	1-SS-TV-106A	SS/HOT LEG SAMPLE HEADER ISOL	11715-FM-089D1/16/E6	CONTMT	253' A	8	5	R	1,40	CLOSED	CLOSED	NO	11715-SS-011/6; 11715-FK-001D	N/A	
1225	1, 2	08B	1-SS-TV-106B	SS/HOT LEG SAMPLE ISOL	11715-FM-089D1/16/E6	AUX	245'	7	K	S	R	A,40	CLOSED	OP/CL	YES	11715-SS-012/3	N/A
1225	2	08B	1-SS-TV-106B	SS/HOT LEG SAMPLE ISOL	11715-FM-089D1/16/E6	AUX	247'	7	K	R	1,40	CLOSED	CLOSED	NO	11715-SS-012/3	N/A	
4262	1, 2	08B	1-SS-TV-107A	SS/RHR HX OUTLET TO SAMPLING SYSTEM	11715-FM-089D1/16/F8	CONTMT	216'	7		S	R	--	CLOSED	OPEN	YES	11715-SS-013/3; 11715-FK-001D; VIMS30448-30450	N/A
4263	1, 2	08B	1-SS-TV-107B	SS/RHR HX OUTLET TO SAMPLING SYSTEM	11715-FM-089D1/16/F8	CONTMT	241'	4		S	R	--	CLOSED	OPEN	YES	11715-SS-014/3; VIMS27348,27370	N/A
1223	1, 2	08B	1-SS-TV-108D	SS/HOT LEG SAMPLE ISOL	11715-FM-089D1/16/D8	CONTMT	241'	13	B	S	R	--	CLOSED	OPEN	YES	11715-SS-018/4; VIMS 28479, 28416, 28436	N/A

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA1\_SSEL.DBF / 05/20/97 / 11:43:22  
 Sort Criteria: Class, ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN	CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr Elv.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP Normal	ST Desired	POWER REQ'D	SUPPORTING DWG. NO./REV.	SYS. & SUPPORTING COMPONENTS	REQ'D INTERCONNECTIONS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	
1231	1, 2	08B	1-SS-TV-109A	SS/COLD LEG SAMPLE ISOL	11715-FM-089D1/16/D8	CONTMT	243' CA	1.5 A	S R	--	CLOSED	OPEN	NO	11715-SS-019/3 VIMS 27864 11715-FK-001E	N/A		
7206	1	08B	1-SV-SOV-102-1	SV/AIR EJECTOR DISCH PILOT	11715-FM-072A2/20/C3	MSVH	272'	4.9/HA	R	1,34	VENT	VENT	NO	11715-SV-010	N/A		
7208	1	08B	1-SV-SOV-102-2	SV/AIR EJECTOR DISCH PILOT	11715-FM-072A2/20/B3	TR	307'	7/C	R	1,31	VENT	VENT	NO	11715-SV-009	N/A		
7210	2	08B	1-SV-SOV-103	SV/RADIATION MONITORING RETURN CONTMT ISOL PILOT	11715-FM-072A2/20/D3	MSVH	272'	4.9/HA	R	I	VENT	VENT	NO	11715-SV-011/6	N/A		
5206	2	08B	1-SW-SOV-101A-1	SW/UNIT 1 RECIRC AIR COOLING COIL ISOL PILOT	11715-FM-078A4/43/D4	SB	265'	5.5/GA	R	--	VENT	VENT	NO	11715-SW-037/7	N/A		
5207	2	08B	1-SW-SOV-101A-2	SW/UNIT 1 RECIRC AIR COOLING COIL ISOL PILOT	11715-FM-078A4/43/D4	SB	265'	5.5/GA	R	--	VENT	VENT	NO	11715-SW-037/7	N/A		
5209	2	08B	1-SW-SOV-101B-1	SW/UNIT 1 RECIRC AIR COOLING COIL ISOL PILOT	11715-FM-078A4/43/D4	SB	265'	5.5/GA	R	--	VENT	VENT	NO	11715-SW-038/7	N/A		
5210	2	08B	1-SW-SOV-101B-2	SW/UNIT 1 RECIRC AIR COOLING COIL ISOL PILOT	11715-FM-078A4/43/D4	SB	265'	5.5/GA	R	--	VENT	VENT	NO	11715-SW-038/7	N/A		
7156	1	08B	1-VG-SOV-100A	VG/PRIMARY VENT HDR CONTMT ISOL PILOT	11715-FM-090C1/17/F4	AUX	244'	6/J	S R	I	AIR	VENT	NO	11715-VG-001/3	N/A		
7158	2	08B	1-VG-SOV-100B	VG/PRIMARY VENT HDR CONTMT ISOL PILOT	11715-FM-090C1/17/D4	CONTMT	241'	8	S R	I	AIR	VENT	NO	11715-VG-002/8	N/A		
5547	1	08B	2-EG-SOV-700HA	EG/AIR START SOLENOID VALVE	12050-FM-107A1	SB	270'	DG	S R	36	OFF	ON	YES	N/A		EDG-2H	
5548	2	08B	2-EG-SOV-700HB	EG/AIR START SOLENOID VALVE	12050-FM-107A2	SB	270'	DG	S R	36	OFF	ON	YES	N/A		EDG-2H	
5549	1	08B	2-EG-SOV-700JA	EG/AIR START SOLENOID VALVE	15050-FM-107A3	SB	270'	DG	S R	36	OFF	ON	YES	N/A		EDG-2J	
5550	2	08B	2-EG-SOV-700JB	EG/AIR START SOLENOID VALVE	12050-FM-107A4	SB	270'	DG	S R	36	OFF	ON	YES	N/A		EDG-2J	
7072	1	08B	2-HC-SOV-204A	HC/UNIT 2 CONT. ATM PURGE ISOL PILOT	11715-FMC-092A1/1/C3	AUX	244'	12.2/J	R	1,38	VENT	VENT	NO	N/A		N/A	
7072	1	08B	2-HC-SOV-204A	HC/UNIT 2 CONT. ATM PURGE ISOL PILOT	11715-FMC-092A1/1/C3	AUX	244'	12.2/J	S R	1,39	VENT	AIR	YES	N/A		2-EP-CB-80E	
7074	1	08B	2-HC-SOV-204B	HC/UNIT 2 CONT. ATM PURGE ISOL PILOT	11715-FMC-092A1/1/C3	AUX	244'	12.2/J	R	1,38	VENT	VENT	NO	N/A		N/A	
7074	1	08B	2-HC-SOV-204B	HC/UNIT 2 CONT. ATM PURGE ISOL PILOT	11715-FMC-092A1/1/C3	AUX	244'	12.2/J	S R	1,39	VENT	AIR	YES	N/A		2-EP-CB-80B	
7066A	1	08B	2-HC-SOV-205A	HC/HYDROGEN COMBINER 1 UNIT 2 DISCH ISOL PILOT	11715-FMC-092A1/1/F7	AUX	244'	11/L	R	1,38	VENT	VENT	NO	N/A		N/A	

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA1 SSEL DBF / 05/20/97 / 11:43:22  
 Sort Criteria: Class\_ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elv.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQD?	SUPPORTING DWG. NO./REV.	SYS. & SUPPORTING	REQ'D INTERCONNECTIONS & COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	
7066A	1	08B	2-HC-SOV-205A	HC/HYDROGEN COMBINER 1 UNIT 2 DISCH ISOL PILOT	11715-FMC-092A1/1/F7 AUX	244'	11/L	S R	1,39	VENT	AIR	YES	N/A		2-EP-CB-80E	
7064A	1	08B	2-HC-SOV-205B	HC/HYDROGEN COMBINER UNIT 2 DISCH ISOL PILOT	11715-FMC-092A1/1/F7 AUX	244'	11/L	R	1,38	VENT	VENT	NO	N/A		N/A	
7064A	1	08B	2-HC-SOV-205B	HC/HYDROGEN COMBINER UNIT 2 DISCH ISOL PILOT	11715-FMC-092A1/1/F7 AUX	244'	11/L	S R	1,39	VENT	AIR	YES	N/A		2-EP-CB-80B	
7076	2	08B	2-HC-SOV-206A	HC/UNIT 2 CONT. ATM PURGE ISOL PILOT	11715-FMC-092A1/1/C3 AUX	244'	11.8/J	R	1,38	VENT	VENT	NO	N/A		N/A	
7076	2	08B	2-HC-SOV-206A	HC/UNIT 2 CONT. ATM PURGE ISOL PILOT	11715-FMC-092A1/1/C3 AUX	244'	11.8/J	S R	1,39	VENT	AIR	YES	N/A		2-EP-CB-80G	
7078	2	08B	2-HC-SOV-206B	HC/UNIT 2 CONT. ATM PURGE ISOL PILOT	11715-FMC-092A1/1/C2 AUX	244'	11.8/J	R	1,38	VENT	VENT	NO	N/A		N/A	
7078	2	08B	2-HC-SOV-206B	HC/UNIT 2 CONT. ATM PURGE ISOL PILOT	11715-FMC-092A1/1/C2 AUX	244'	11.8/J	S R	1,39	VENT	AIR	YES	N/A		2-EP-CB-80D	
7070	2	08B	2-HC-SOV-207A	HC/HYDROGEN COMBINER 2 UNIT 2 DISCH ISOL PILOT	11715-FMC-092A1/1/C6 AUX	244'	11/J	R	1,38	VENT	VENT	NO	N/A		N/A	
7070	2	08B	2-HC-SOV-207A	HC/HYDROGEN COMBINER 2 UNIT 2 DISCH ISOL PILOT	11715-FMC-092A1/1/C6 AUX	244'	11/J	S R	1,39	VENT	AIR	YES	N/A		2-EP-CB-80G	
7068	2	08B	2-HC-SOV-207B	HC/HYDROGEN COMBINER 2 UNIT 2 DISCH ISOL PILOT	11715-FMC-092A1/1/C6 AUX	244'	11/J	R	1,38	VENT	VENT	NO	N/A		N/A	
7068	2	08B	2-HC-SOV-207B	HC/HYDROGEN COMBINER 2 UNIT 2 DISCH ISOL PILOT	11715-FMC-092A1/1/C6 AUX	244'	11/J	S R	1,39	VENT	AIR	YES	N/A		2-EP-CB-80D	
7062B	2	08B	2-HC-TV-203B	HC/HYDROGEN ANALYZER UNIT 1 DISCH ISOL	11715-FMC-092A1/1/B6 AUX	244'	7/J	R	1,39	CLOSED	CLOSED	NO	N/A		N/A	
5432	1	11	1-HV-E-4A	HV/CHILLER UNIT	11715-FB-04001/15/E5 SB	254'	AC RM 4/C	S R	--	ON	ON	YES	11715-FB-040A1/13		1-EP-MC-10	
5433	1	11	1-HV-E-4B	HV/CHILLER UNIT	11715-FB-04001/15/B5 SB	254'	AC RM 4/C	S R	--	ON	ON	YES	11715-FB-040A1/13		1-EP-MC-11	
5434	2	11	1-HV-E-4C	HV/CHILLER UNIT	11715-FB-04001/15/D5 SB	254'	AC RM 4/D	S R	--	ON	ON	YES	11715-FB-040A1/13		1-EP-MC-41	
6057	1	14	1-BP-SW-1	BP/BY-PASS SWITCH 1 (MANUAL)	11715-FE-001V1/02/J2 SB	277'	9/C	S		INVERT	INVERT	YES	11715-FE-11E/05		1-VB-I-01	
6058	1	14	1-BP-SW-2	BP/BY-PASS SWITCH 2 (MANUAL)	11715-FE-001V1/02/J4 SB	277'	9/C	S		INVERT	INVERT	YES	11715-FE-11E/05		1-VB-I-02	
6059	2	14	1-BP-SW-3	BP/BY-PASS SWITCH 3 (MANUAL)	11715-FE-001V1/02/J5 SB	277'	8/C	S		INVERT	INVERT	YES	11715-FE-11E/05		1-VB-I-03	
6060	2	14	1-BP-SW-4	BP/BY-PASS SWITCH 4 (MANUAL)	11715-FE-001V1/02/J7 SB	277'	8/D	S		INVERT	INVERT	YES	11715-FE-11E/05		1-VB-I-04	

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NAI\_SSEL.DBF / 05/20/97 / 11:43:22  
 Sort Criteria: Class, ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT NOTES	DP. ST.	POWER REQ'D	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE	
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10) (11)	Normal (12)	Desired (13)	(14)	(15)	(16)	(17)
6065	1	14	1-EP-CB-002	EP/120 AC UNIT 1 APP-R DIST PNL (RED)	11715-FE-001AE1/13/A SB 7	254'	10/C	S R --	N/A	N/A	YES	N/A	1-VB-1-01	
6061	1	14	1-EP-CB-04A	EP/120V VITAL AC 1-I BUS (RED & ORANGE)	11715-FE-001V1/02/01 SB	277'	9/C	S R --	N/A	N/A	YES	N/A	1-BP-SW-01	
6062	1	14	1-EP-CB-04B	EP/120V VITAL AC 1-II BUS (WHITE)	11715-FE-001V1/02/02 SB	277'	9/C	S R --	N/A	N/A	YES	N/A	1-BP-SW-02	
6063	2	14	1-EP-CB-04C	EP/120V VITAL AC 1-III BUS (BLUE & PURPLE)	11715-FE-001V1/02/04 SB	277'	9/C	S R --	N/A	N/A	YES	N/A	1-BP-SW-03	
6064	2	14	1-EP-CB-04D	EP/120V VITAL AC 1-IV BUS (YELLOW)	11715-FE-001V1/02/05 SB	277'	9/C	S R --	N/A	N/A	YES	N/A	1-BP-SW-04	
6045	1	14	1-EP-CB-12A	EP/125V VITAL DC BUS (1-1)	11715-FE-001E1/18/E7 SB	254'	9/C	S R --	N/A	N/A	YES	N/A	1-BY-C-02,-03,-04;1-BY-B-01	
6046	1	14	1-EP-CB-12B	EP/125V VITAL DC BUS (1-II)	11715-FE-001E1/18/D7 SB	254'	9/C	S R --	N/A	N/A	YES	N/A	1-BY-C-02,-03,-04;1-BY-B-02	
6047	2	14	1-EP-CB-12C	EP/125V VITAL DC BUS (1-III)	11715-FE-001E2/17/E7 SB	259'	8/C	S R --	N/A	N/A	YES	N/A	1-BY-C-05,-06,-07;1-BY-B-03	
6048	2	14	1-EP-CB-12D	EP/125V VITAL DC BUS (1-IV)	11715-FE-001E2/17/D7 SB	254'	8/C	S R --	N/A	N/A	YES	N/A	1-BY-C-05,-06,-07;1-BY-B-04	
6035	1	14	1-EP-CB-16A	EP/120V SEMI-VITAL AC 1A BUS	11715-FE-001W1/16/E1 SB	277'	8/D	S R --	N/A	N/A	YES	N/A	TRANS-70	
6037	2	14	1-EP-CB-16B	EP/120V SEMI-VITAL AC 1B BUS	11715-FE-001W1/16/E3 SB	277'	8/D	S R --	N/A	N/A	YES	N/A	TRANS-71	
5571	1	14	1-EP-CB-41AN	EP/HEAT TRACE DISTRIBUTION CABINET	11715-FE-1Q/27 AFPH	271'	1.1/LA	S R --	ON	ON	YES	N/A	N/A	
5583	2	14	1-EP-CB-41AR	EP/HEAT TRACE DISTRIBUTION CABINET	11715-FE-63 SERIES AFPH	271'	1.1/LA	S R 30	ON	ON	YES	N/A	N/A	
5572	1	14	1-EP-CB-41BN	EP/HEAT TRACE DISTRIBUTION CABINET	11715-FE-1Q/27 AFPH	271'	1.1/LA	S R --	ON	ON	YES	N/A	N/A	
5584	2	14	1-EP-CB-41BR	EP/HEAT TRACE DISTRIBUTION CABINET	11715-FE-63 SERIES AFPH	271'	1.1/LA	S R 30	ON	ON	YES	N/A	N/A	
6068	1	14	1-EP-CB-80B	EP/120 VAC INSTRUM DIST PANEL 1-II	11715-FE-018S/19/J4 SB	277'	6/C	S R 1	N/A	N/A	YES	11715-FE-1AB/12	1-EP-CB-04B	
6069	2	14	1-EP-CB-80D	EP/120 VAC INSTRUM DIST PANEL 1-IV	11715-FE-018T/21/J5 SB	277'	7/E	S R 1	N/A	N/A	YES	11715-FE-1AD/10	1-EP-CB-04D	
6070	1	14	1-EP-CB-80E	EP/120 VAC INSTRUM DIST PANEL 1-V	13075-FE-018Y/8 SB	277'	7/D	S R 1	N/A	N/A	YES	11715-FE-1AA/13	1-EP-CB-04A	
6071	2	14	1-EP-CB-80G	EP/120 VAC INSTRUM DIST PANEL 1-VII	13075-FE-018Y/8 SB	277'	7/D	S R 1	N/A	N/A	YES	11715-FE-1AC/12	1-EP-CB-04C	
6049	1	15	1-BY-B-01	BY/125V BATTERY 1-1	11715-FE-001E1/18/D7 SB	294'	9/C	S --	N/A	N/A	YES	N/A	N/A	
6050	1	15	1-BY-B-02	BY/125V BATTERY 1-II	11715-FE-001E1/18/B7 SB	252'	9/C	S --	N/A	N/A	YES	N/A	N/A	
6051	2	15	1-BY-B-03	BY/125V BATTERY 1-III	11715-FE-001E2/17/E7 SB	294'	8/DB	S --	N/A	N/A	YES	N/A	N/A	
6052	2	15	1-BY-B-04	BY/125V BATTERY 1-IV	11715-FE-001E2/17/C7 SB	252'	8/D	S --	N/A	N/A	YES	N/A	N/A	

NORTH ANNA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
COMPOSITE SSEL  
(Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA1\_SSEL.DBF / 05/20/97 / 11:43:22  
Sort Criteria: Class, ID Number  
Filter Criteria: <none>  
Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN	CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING DMG. NO./REV.	SYS. & SUPPORTING COMPONENTS	REQ'D INTERCONNECTIONS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10) (11)	(12)	(13)	(14)	(15)	(16)	(17)	
6066	1	15	1-EG-B-01A	AP/EDG BATTERIES AND RACKS	11715-1-30-212C	SB	272'	EDG1H	S --	N/A	N/A	NO	N/A	N/A	N/A	
6067	2	15	1-EG-B-03C	AP/EDG BATTERIES AND RACKS	11715-1-30-212C	SB	272'	EDG1J	S --	N/A	N/A	NO	N/A	N/A	N/A	
6040	1	16	1-BY-C-02	BY/BATTERY CHARGER 1-I	11715-FE-001E1/18/D7	SB	254'	EMER SWGR	S R --	N/A	N/A	YES	N/A		1-EP-MC-10	
6039	1	16	1-BY-C-03	BY/BATTERY CHARGER 1C-I	11715-FE-001E1/18/D8	SB	254'	EMER SWGR	S R --	N/A	N/A	YES	N/A		1-EP-MC-10	
6041	1	16	1-BY-C-04	BY/BATTERY CHARGER 1-11	11715-FE-001E1/18/C7	SB	254'	EMER SWGR	S R --	N/A	N/A	YES	N/A		1-EP-MC-10	
6043	2	16	1-BY-C-05	BY/BATTERY CHARGER 1-111	11715-FE-010B1/19/A9	SB	254'	EMER SWGR	S R --	N/A	N/A	YES	N/A		1-EP-MC-11	
6042	2	16	1-BY-C-06	BY/BATTERY CHARGER 1C-11	11715-FE-010B1/19/C9	SB	254'	EMER SWGR	S R --	N/A	N/A	YES	N/A		1-EP-MC-11	
6044	2	16	1-BY-C-07	BY/BATTERY CHARGER 1-1V	11715-FE-010B1/19/F6	SB	254'	EMER SWGR	S R --	N/A	N/A	YES	N/A		1-EP-MC-11	
6053	1	16	1-VB-I-01	VB/INVERTER TO VITAL 1-I BUS	11715-FE-011E/05/B8	SB	252'	9/C	S R --	N/A	N/A	YES	N/A		1-EP-CB-12A	
6054	1	16	1-VB-I-02	VB/INVERTER TO VITAL 1-11 BUS	11715-FE-011E/05/EB	SB	252'	9/C	S R --	N/A	N/A	YES	N/A		1-EP-CB-12B	
6055	2	16	1-VB-I-03	VB/INVERTER TO VITAL 1-111 BUS	11715-FE-011E/05/H8	SB	252'	8/C	S R --	N/A	N/A	YES	N/A		1-EP-CB-12C	
6056	2	16	1-VB-I-04	VB/INVERTER TO VITAL 1-1V BUS	11715-FE-011E/05/L8	SB	252'	8/C	S R --	N/A	N/A	YES	N/A		1-EP-CB-12D	
6001	1	17	EDG-1H*	AP/EMERGENCY DIESEL GENERATOR 1H	11715-FE-003A1/21/B3	SB	272'	14/D	S R --	OFF	ON	YES	N/A		1-BY-B-01,-02	
6002	2	17	EDG-1J*	AP/EMERGENCY DIESEL GENERATOR 1J	11715-FE-003A1/21/B1	SB	272'	16/D	S R --	OFF	ON	YES	N/A		1-BY-B-03,-04	
5003	1	18	1-CC-FT-100A	CC/CCW HX OUTLET FLOW	11715-FM-079A1/17/E4	AUX	259'	8.5/F	S R --	ON	ON	YES	11715-CC-063/3	N/A		
5007	1	18	1-CC-FT-100B	CC/CCW HX OUTLET FLOW	11715-FM-079A1/17/D4	AUX	259'	8.5/F	S R --	ON	ON	YES	11715-CC-063/3	N/A		
5088	1	18	1-CC-FT-132A	CC/CC HX FLOW TO RHR HX	11715-FM-079B1/21/F6	CONTMT	216'	7	S R --	ON	ON	YES	11715-CC-110/5	N/A		
5096	1	18	1-CC-FT-132B	CC/CC HX FLOW TO RHR HX	11715-FM-079B1/21/F5	CONTMT	216'	4.5	S R --	ON	ON	YES	11715-CC-111/6; 11715-FK-1B	N/A		
5049	1, 2	18	1-CC-LT-101	CC/CC SURGE TANK LEVEL	11715-FM-079A1/17/D7	AUX	298'	9/F	S R --	ON	ON	YES	11715-CC-057/8	N/A		
5011	1	18	1-CC-PT-100	CC/CCW HX OUTLET PRESSURE	11715-FM-079A1/17/D3	AUX	245'	8.5/G	S R --	ON	ON	YES	11715-CC-059/6	N/A		
1076	1	18	1-CH-E/P-1122	CH/CHARGING FLOW TO REGEN HX	11715-CH-001/7	AUX	245'	12/H	R --	ON	ON	YES	N/A	N/A		
1092	1	18	1-CH-E/P-1186	CH/CCP TO RCP SEAL INJECTION	11715-CH-068/1	AUX	245'	8.5/L	R --	ON	ON	YES	N/A	N/A		
1201	2	18	1-CH-E/P-HCV-1137	CH/EXCESS LETDOWN HX ISOL E/P	11715-CH-077/3	CONTMT	217'	5.5	R --	ON	ON	YES	11715-FK-01A/14 11715-FK-001A	RACK 1-100		
1177	1	18	1-CH-FT-1110	CH/BAST TO VCT FLOW	11715-FM-095B1/21/B4	AUX	274'	8.5/JK	S R --	ON	ON	YES	11715-CH-015/4	N/A		
1168	2	18	1-CH-FT-1113	CH/BAST TO VCT FLOW	11715-FM-095B1/21/B4	AUX	274'	8.5/J	S R --	ON	ON	YES	N/A	N/A		
1077	1	18	1-CH-FT-1122	CH/CHARGING FLOW TO REGEN HX	11715-FM-095C1/14/C4	AUX	245'	12/H	S R --	ON	ON	YES	11715-CH-001/7	N/A		

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA1\_SSEL.DBF / 05/20/97 / 11:43:22  
 Sort Criteria: Class, ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Fir. Elev.	LOCATION Rm. or Row/Col.	SORT NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1099	1, 2	18	1-CH-FT-1124	CH/RCP SEAL WATER INJECTION FLOW	11715-FM-095C2/13/C3	AUX	244'	8.5/HJ	S	R	20	ON	ON	YES	11715-CH-058/4	N/A
1101	1, 2	18	1-CH-FT-1127	CH/RCP SEAL WATER INJECTION FLOW	11715-FM-095C2/13/B3	AUX	244'	8.5/HJ	S	R	20	ON	ON	YES	11715-CH-059/4	N/A
1103	1, 2	18	1-CH-FT-1130	CH/RCP SEAL WATER INJECTION FLOW	11715-FM-095C2/13/A3	AUX	244'	8.5/HJ	S	R	20	ON	ON	YES	11715-CH-060/5	N/A
1142	1	18	1-CH-LT-1106	CH/BAST A LEVEL	11715-FM-095A1/22/E2	AUX	289'	8.5/G	S	R	--	ON	ON	YES	11715-CH-046/3	N/A
1144	2	18	1-CH-LT-1108	CH/BAST B LEVEL	11715-FM-095A1/22/E4	AUX	289'	9/G	S	R	--	ON	ON	YES	11715-CH-047/4	N/A
1051	1	18	1-CH-LT-1112	CH/VCT LEVEL	11715-FM-095B1/21/D5	AUX	274'	9.5/J	S	R	--	ON	ON	YES	11715-CH-011/9	N/A
1049	1	18	1-CH-LT-1115	CH/VCT LEVEL	11715-FM-095B1/21/D5	AUX	274'	9.5/J	S	R	--	ON	ON	YES	11715-CH-012/6	N/A
1143	1	18	1-CH-LT-1161	CH/BAST A LEVEL	11715-FM-095A1/22/E4	AUX	274'	9.4/H	S	R	--	ON	ON	YES	11715-CH-042/3	N/A
1145	1	18	1-CH-TIC-1107	CH/BAST A TEMPERATURE	11715-FM-095A1/22/E4	AUX	274'	8.5/H	S	R	--	ON	ON	YES	11715-CH-044/3	N/A
1147	2	18	1-CH-TIC-1109	CH/BAST B TEMPERATURE	11715-FM-095A1/22/E5	AUX	274'	9.1/GH	S	R	--	ON	ON	YES	11715-CH-041/6	N/A
1146	1	18	1-CH-TIC-1162	CH/BAST A TEMPERATURE	11715-FM-095A1/22/E3	AUX	274'	9.1/H	S	R	--	ON	ON	YES	11715-CH-045/2	N/A
4119	1	18	1-CN-LT-100A	CN/CONDENSATE STORAGE TANK LEVEL	11715-FM-074A3/29/D3	AFPH	274'	--	S	R	--	N/A	N/A	YES	11715-CN-071/3	N/A
4120	1	18	1-CN-LT-100B	CN/CONDENSATE STORAGE TANK LEVEL	11715-FM-074A3/29/D3	AFPH	274'	--	S	R	--	N/A	N/A	YES	11715-CN-001/10	N/A
4101	1	18	1-CN-LT-104	CN/CONDENSATE STORAGE TANK LEVEL	11715-FM-073A/31/B6	YARD	302'	--	R	--	--	ON	ON	YES	11715-CN-002/4	N/A
5497	1	18	1-EG-LS-103-HA	EG/FUEL OIL DAY TANK LEVEL	11715-FB-035A2/21/C4	SB	270'	DG	S	R	--	OFF	ON	YES	N/A	N/A
5498	2	18	1-EG-LS-103-HB	EG/FUEL OIL DAY TANK LEVEL	11715-FB-035A2/21/C4	SB	270'	DG	S	R	--	OFF	ON	YES	N/A	N/A
5501	1	18	1-EG-LS-103-JA	EG/FUEL OIL DAY TANK LEVEL	11715-FB-035A2-21/B4	SB	270'	DG	S	R	--	OFF	ON	YES	N/A	N/A
5502	2	18	1-EG-LS-103-JB	EG/FUEL OIL DAY TANK LEVEL	11715-FB-035A2/21/B4	SB	270'	DG	S	R	--	OFF	ON	YES	N/A	N/A
5495	1	18	1-EG-LS-1HA	EG/FUEL OIL DAY TANK LEVEL	11715-FB-035A2/21/D3	SB	270'	DG	S	R	--	OFF	ON	YES	N/A	N/A
5496	2	18	1-EG-LS-1HB	EG/FUEL OIL DAY TANK LEVEL	11715-FB-035A2/21/D3	SB	270'	DG	S	R	--	OFF	ON	YES	N/A	N/A
5499	1	18	1-EG-LS-1JA	EG/FUEL OIL DAY TANK LEVEL	11715-FB-035A2/21/B5	SB	270'	DG	S	R	--	OFF	ON	YES	N/A	N/A
5500	2	18	1-EG-LS-1JB	EG/FUEL OIL DAY TANK LEVEL	11715-FB-035A2/21/B5	SB	270'	DG	S	R	--	OFF	ON	YES	N/A	N/A
4174	1	18	1-FW-FT-100A	FW/AFWP TO SG A FLOW	11715-FM-074A1/32/D6	AFPH	273'	--	S	R	--	ON	ON	YES	11715-FW-050/6	N/A
4159	2	18	1-FW-FT-100B	FW/AFWP TO SG B FLOW	11715-FM-074A1/32/C6	AFPH	273'	--	S	R	--	ON	ON	YES	11715-FW-051/6	N/A
4163	2	18	1-FW-FT-100C	FW/AFWP TO SG C FLOW	11715-FM-074A1/32/B7	AFPH	273'	--	S	R	--	ON	ON	YES	11715-FW-052/7	N/A
4182	1	18	1-FW-LT-1474	FW/SG A LEVEL	11715-FM-074A1/32/F7	CONTMT	263'	2	S	R	--	ON	ON	YES	11715-FW-094/9; 11715-FK-001B	N/A

NORTH ANNA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
COMPOSITE SSEL  
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Sort Criteria: Class, ID Number  
Filter Criteria: <none>  
Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No /Rev./Zone	Building	EQUIPMENT Flr. Elv.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP Normal	ST Desired	POWER REQD?	SUPPORTING DWG. NO./REV	SYS. & SUPPORTING	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	
4184	1	18	1-FW-LT-1475	FW/SG A LEVEL	11715-FM-074A1/32/F6	CONTMT	263'	18.5	S R	--	ON	ON	YES	11715-FW-100/9; 11715-FK-001A	N/A	
4186	1	18	1-FW-LT-1476	FW/SG A LEVEL	11715-FM-074A1/32/F6	CONTMT	263'	1	S R	--	ON	ON	YES	11715-FW-106/8; 11715-FK-001B	N/A	
4178	1	18	1-FW-LT-1477	FW/SG A LEVEL	11715-FM-074A1/32/F8	CONTMT	241'	1.5	S R	--	ON	ON	YES	11715-FW-091/7; 11715-FK-001B	RACK 1-112	
4194	2	18	1-FW-LT-1484	FW/SG B LEVEL	11715-FM-074A1/32/D7	CONTMT	263'	14	S R	--	ON	ON	YES	11715-FW-096/9; 11715-FK-001A	N/A	
4196	2	18	1-FW-LT-1485	FW/SG B LEVEL	11715-FM-074A1/32/D6	CONTMT	263'	13.2	S R	--	ON	ON	YES	11715-FW-102/9; 11715-FK-001A	N/A	
4198	2	18	1-FW-LT-1486	FW/SG B LEVEL	11715-FM-074A1/32/D6	CONTMT	263'	14	S R	--	ON	ON	YES	11715-FW-108/9; 11715-FK-001A	N/A	
4190	2	18	1-FW-LT-1487	FW/SG B LEVEL	11715-FM-074A1/32/D8	CONTMT	241'	13	S R	--	ON	ON	YES	11715-FW-092/7 VIMS 2632B 11715-FK-001A	RACK 1-107	
4204	3	18	1-FW-LT-1494	FW/SG C LEVEL	11715-FM-074A1/32/C7	CONTMT	259'	8	S R	--	ON	ON	YES	11715-FW-098/9; 11715-FK-001A	N/A	
4206	3	18	1-FW-LT-1495	FW/SG C LEVEL	11715-FM-074A1/32/C7	CONTMT	260'	8.3	S R	--	ON	ON	YES	11715-FW-104/9; 11715-FK-001A	N/A	
4208	3	18	1-FW-LT-1496	FW/SG C LEVEL	11715-FM-074A1/32/C6	CONTMT	260'	8.6	S R	--	ON	ON	YES	11715-FW-110/8; 11715-FK-001A	N/A	
4200	3	18	1-FW-LT-1497	FW/SG C LEVEL	11715-FM-074A1/32/C8	CONTMT	241' A	8	S R	--	ON	ON	YES	11715-FW-093/8; 11715-FK-001A	N/A	
4144	2	18	1-FW-PC-159A	FW/PRESSURE CONTROL	11715-FM-074A3/29/F8	AFPH	273'	--	S R	--	ON	ON	YES	N/A	N/A	
4149	2	18	1-FW-PC-159B	FW/PRESSURE CONTROL	11715-FM-074A3/29/E8	AFPH	273'	--	S R	--	ON	ON	YES	N/A	N/A	
4134	1	18	1-FW-PI-156A	FW/TDAFWP SUCTION (LOCAL)	11715-FM-074A3/29/B7	AFPH	274'	--	S	--	N/A	N/A	NO	N/A	N/A	
4128	2	18	1-FW-PI-156B	FW/MDAFWP SUCTION (LOCAL)	11715-FM-074A3/29/B6	AFPH	273'	--	S	--	N/A	N/A	NO	N/A	1-FW-P-3A	
4122	2	18	1-FW-PI-156C	FW/MDAFWP SUCTION (LOCAL)	11715-FM-074A3/29/B5	AFPH	273'	--	S	--	N/A	N/A	NO	N/A	1-FW-P-3B	
4148	2	18	1-FW-PT-101A	FW/AFWP TO SG B PRESSURE	11715-FM-074A3/29/F8	AFPH	273'	--	S R	--	ON	ON	YES	N/A	N/A	
4153	2	18	1-FW-PT-101B	FW/AFWP TO SG C PRESSURE	11715-FM-074A3/29/E8	AFPH	273'	--	S R	--	ON	ON	YES	N/A	N/A	
4156	1	18	1-FW-PT-101C	FW/AFWP TO SG A PRESSURE	11715-FM-074A3/29/E8	AFPH	273'	--	S R	--	ON	ON	YES	N/A	N/A	
4135	1	18	1-FW-PT-103A	FW/TDAFWP SUCTION PRESSURE	11715-FM-074A3/29/C7	AFPH	273'	--	S R	--	ON	ON	YES	11715-FW-003/3	N/A	
4129	2	18	1-FW-PT-103B	FW/MDAFWP SUCTION PRESSURE	11715-FM-074A3/29/C6	AFPH	272'	--	S R	--	ON	ON	YES	11715-FW-001/4	N/A	



NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

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 Sort Criteria: Class, ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	TRAIN	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT NOTES		OP. Normal	ST. Desired	POWER REQD?	SUPPORTING DWG. NO./REV.	SYS. & SUPPORTING COMPONENTS	REQ'D INTERCONNECTIONS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	
4123	2	18	1-FW-PT-103C	FW/MDAFWP SUCTION PRESSURE	11715-FM-074A3/29/C5	AFPH	272'	--	S	R --	ON	ON	YES	11715-FW-002/5	N/A		
2040	1	18	1-GN-PT-134A	GN/N2 RESERVE PRESSURE	11715-FM-105A1/20/DB	CONTMT	291'	9.5	S	R --	ON	ON	YES	11715-GN-007	N/A		
2042	2	18	1-GN-PT-134B	GN/N2 RESERVE PRESSURE	11715-FM-105A1/20/D3	CONTMT	291'	9.5	S	R --	ON	ON	YES	11715-GN-008	N/A		
5449G	1	18	1-HV-FS-1213A	HV/CHILLER FLOW SWITCH	11715-FB-040A1/13	SB	254'	CHILLER RM 4/C	S	R --	ON	ON	YES	N/A	N/A		
5449M	2	18	1-HV-FS-1213B	HV/CHILLER FLOW SWITCH	11715-FB-040A1/13	SB	254'	CHILLER RM 5/D	S	R --	ON	ON	YES	N/A	N/A		
5449Z6	2	18	1-HV-FS-1213C	HV/CHILLER FLOW SWITCH	11715-FB-040A1/13/D6	SB	254'	CHILLER RM 4/C	S	R --	ON	ON	YES	N/A	N/A		
5425N	1	18	1-HV-FS-1215A	HV/CND WTR PUMP SEAL FLOW SWITCH	11715-FB-040D1/15	SB	254'	CHILLER RM	S	R --	ON	ON	YES	N/A	N/A		
5425P	1	18	1-HV-FS-1215B	HV/CND WTR PUMP SEAL FLOW SWITCH	11715-FB-040D1/15	SB	254'	CHILLER RM	S	R --	ON	ON	YES	N/A	N/A		
5425Q	2	18	1-HV-FS-1215C	HV/CND WTR PUMP SEAL FLOW SWITCH	11715-FB-040D1/15	SB	254'	CHILLER RM	S	R --	ON	ON	YES	N/A	N/A		
5444	1	18	1-HV-PC-1235A	HV/CR & RR WATER SYSTEM FLOW CONTROL	11715-FB-040D1/15/E5	SB	254'	CHILLER RM	S	--	VENT	VENT	NO	N/A	N/A		
5445	1	18	1-HV-PC-1235B	HV/CR & RR WATER SYSTEM FLOW CONTROL	11715-FB-040D1/15/B5	SB	254'	CHILLER RM	S	--	VENT	VENT	NO	N/A	N/A		
5446	2	18	1-HV-PC-1235C	HV/CR & RR WATER SYSTEM FLOW CONTROL	11715-FB-040D1/15/C5	SB	254'	CHILLER RM	S	--	VENT	VENT	NO	N/A	N/A		
5425M	1	18	1-HV-PDS-1228A	HV/CND WTR STRAINER DIFF PRESS	11715-FB-040D1/15	SB	254'	CHILLER RM	S	R --	ON	ON	YES	N/A	N/A		
5425L	1	18	1-HV-PDS-1228B	HV/CND WTR STRAINER DIFF PRESS	11715-FB-040D1/15	SB	254'	CHILLER RM	S	R --	ON	ON	YES	N/A	N/A		
4007	1	18	1-MS-PT-101A	MS/SG A STEAM PRESSURE	11715-FM-070B1/19/C6	QSPH	280'	4.5/GB	S	R --	ON	ON	YES	11715-MS-012/7	N/A		
4033	2	18	1-MS-PT-101B	MS/SG B STEAM PRESSURE	11715-FM-070B2/19/C5	QSPH	256'	4.5/GB	S	R --	ON	ON	YES	11715-MS-013/9	RACK 1-800		
4059	3	18	1-MS-PT-101C	MS/SG C STEAM PRESSURE	11715-FM-070B3/23/B6	QSPH	255'	3/GB	S	R --	ON	ON	YES	11715-MS-014/8	RACK 1-801		
4003	1	18	1-MS-PT-1474	MS/SG A STEAM PRESSURE	11715-FM-070B1/19/D7	QSPH	256'	3/GA	S	R 9	ON	ON	YES	11715-MS-144/6	RACK 1-800		
4005	2	18	1-MS-PT-1476	MS/SG A STEAM PRESSURE	11715-FM-070B1/19/C6	QSPH	256'	4/GB	S	R 9	ON	ON	YES	11715-MS-156/5	RACK 1-802		
4029	1	18	1-MS-PT-1485	MS/SG B STEAM PRESSURE	11715-FM-070B2/19/C7	QSPH	256'	3/GA	S	R 9	ON	ON	YES	11715-MS-146/5	N/A		
4031	2	18	1-MS-PT-1486	MS/SG B STEAM PRESSURE	11715-FM-070B2/19/C6	QSPH	256'	4/GB	S	R 9	ON	ON	YES	11715-MS-158/4	N/A		
4055	2	18	1-MS-PT-1494	MS/SG C STEAM PRESSURE	11715-FM-070B3/23/B7	QSPH	256'	3/GA	S	R 9	ON	ON	YES	11715-MS-148/6	RACK 1-800		
4057	1	18	1-MS-PT-1496	MS/SG C STEAM PRESSURE	11715-FM-070B3/23/C6	QSPH	256'	4/GB	S	R 9	ON	ON	YES	11715-MS-160/5	RACK 1-802		
4015	1	18	1-MS-PY-101A	MS/SG A STEAM DUMP VALVE E/P TRANSDUCER	11715-MS-012/7	QSPH	272'	4/GB	S	R --	ON	ON	YES	N/A	N/A		

NORTH ANNA UNIT 1  
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Filter Criteria: <none>  
Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elv.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D & SUPPORTING COMPONENTS	INTERCONNECTIONS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10) (11)	(12)	(13)	(14)	(15)	(16)	(17)	
4041	2	18	1-MS-PY-101B	MS/SG B STEAM DUMP VALVE E/P TRANSDUCER	11715-MS-013/9	QSPH	272'	4/GB	S R --	ON	ON	YES	N/A	N/A		
4067	3	18	1-MS-PY-101C	MS/SG C STEAM DUMP VALVE E/P TRANSDUCER	11715-MS-014/8	QSPH	272'	4/GA	S R --	ON	ON	YES	N/A	N/A		
7008	1, 2	18	1-QS-LI-101	QS/CHEMICAL ADD TANK LEVEL INDICATOR	11715-FM-091A1/20/D6 SB		277'	CR	S R I	ON	ON	YES	11715-QS-006/3	1-E1-CB-05		
3047	1, 2	18	1-QS-LT-100A	QS/RWST LEVEL	11715-FM-091A1/20/D8	YARD	271'	NOTE 1A	S R --	ON	ON	YES	11715-QS-003/9	N/A		
3048	1, 2	18	1-QS-LT-100B	QS/RWST LEVEL	11715-FM-091A1/20/D6	YARD	271'	NOTE 1B	S R --	ON	ON	YES	11715-QS-004/10	N/A		
3049	1, 2	18	1-QS-LT-100C	QS/RWST LEVEL	11715-FM-091A1/20/D8	YARD	271'	NOTE 1A	S R --	ON	ON	YES	11715-QS-016/8	N/A		
3050	1, 2	18	1-QS-LT-100D	QS/RWST LEVEL	11715-FM-091A1/20/D6	YARD	271'	NOTE 1B	S R --	ON	ON	YES	11715-QS-017/9	N/A		
7007	1, 2	18	1-QS-LT-101	QS/CHEMICAL ADD TANK LEVEL XMTR	11715-FM-091A1/20/E6	YARD/TUNL	280'	1.5/L	S R I	ON	ON	YES	11715-QS-006/3	1-E1-CB-23D		
3030	1, 2	18	1-RC-LIS-1310	RC/HOT LEG ISOLATOR	13075-FM-093C1/06/F5	AUX	259' 6"	Cable Vault	S R --	ON	ON	YES	N/A	N/A		
3029	1, 2	18	1-RC-LIS-1311	RC/RV HEAD ISOLATOR	13075-FM-093C1/06/E5	AUX	259' 6"	Cable Vault	S R --	ON	ON	YES	N/A	N/A		
3025	1, 2	18	1-RC-LIS-1312	RC/SEAL TABLE ISOLATOR	13075-FM-093C1/06/B5	AUX	259' 6"	Cable Vault	S R --	ON	ON	YES	N/A	N/A		
3038	1, 2	18	1-RC-LIS-1320	RC/HOT LEG ISOLATOR	13075-FM-093C2/06/D5	AUX	259' 6"	Cable Vault	S R --	ON	ON	YES	N/A	N/A		
3039	1, 2	18	1-RC-LIS-1321	RC/RV HEAD ISOLATOR	13075-FM-093C2/06/E5	AUX	259' 6"	Cable Vault	S R --	ON	ON	YES	N/A	N/A		
3043	1, 2	18	1-RC-LIS-1322	RC/SEAL TABLE ISOLATOR	13075-FM-093C2/06/A5	AUX	259' 6"	Cable Vault	S R --	ON	ON	YES	N/A	N/A		
3026	1, 2	18	1-RC-LT-1310	RC/PLENUM LEVEL	13075-FM-093C1/06/E2	AUX	259' 6"	Cable Vault	S R --	ON	ON	YES	N/A	N/A		
3028	1, 2	18	1-RC-LT-1311	RC/N-RANGE LEVEL	13075-FM-093C1/06/E4	AUX	259' 6"	Cable Vault	S R --	ON	ON	YES	N/A	N/A		
3027	1, 2	18	1-RC-LT-1312	RC/W-RANGE LEVEL	13075-FM-093C1/06/E3	AUX	259' 6"	Cable Vault	S R --	ON	ON	YES	N/A	N/A		
3042	1, 2	18	1-RC-LT-1320	RC/PLENUM LEVEL	13075-FM-093C2/06/F8	AUX	259' 6"	Cable Vault	S R --	ON	ON	YES	N/A	N/A		
3040	1, 2	18	1-RC-LT-1321	RC/N-RANGE LEVEL	13075-FM-093C2/06/F7	AUX	259' 6"	Cable Vault	S R --	ON	ON	YES	N/A	N/A		
3041	1, 2	18	1-RC-LT-1322	RC/W-RANGE LEVEL	13075-FM-093C2/06/F8	AUX	259' 6"	Cable Vault	S R --	ON	ON	YES	N/A	N/A		
3005	1, 2	18	1-RC-LT-1459	RC/PZR LEVEL	11715-FM-093B1/22/C6	CONTMT	263'	9	S R --	ON	ON	YES	11715-RC-061/13 ;11715-FK-001C	RACK 1-115		
3006	1, 2	18	1-RC-LT-1460	RC/PZR LEVEL	11715-FM-093B1/22/C6	CONTMT	263'	10	S R --	ON	ON	YES	11715-RC-062/9; 11715-FK-001C	RACK 1-118		
3007	1, 2	18	1-RC-LT-1461	RC/PZR LEVEL	11715-FM-093B1/22/C4	CONTMT	263'	9.5	S R --	ON	ON	YES	11715-RC-063/10 ;11715-FK-001C	RACK 1-117		

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

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 Sort Criteria: Class, ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	TRAIN	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg No./Rev./Zone	Building	EQUIPMENT Flr Elv	LOCATION Rm. or Row/Col.	SORT NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10) (11)	(12)	(13)	(14)	(15)	(16)	(17)
3008	2	18	1-RC-LT-1462	RC/PZR LEVEL	11715-FM-09381/22/C4	CONTMT	263'	9.5	S R --	ON	ON	YES	11715-RC-064/4; 11715-FK-001C	RACK 1-116	
2032	1, 2	18	1-RC-LT-1470	RC/PRT LEVEL	11715-FM-09382/23/C4	CONTMT	244' 9"	10	S R 16	ON	ON	YES	11715-RC-035/5 VIMS 28722 11715-FK-001A	N/A	
2017	2	18	1-RC-PJ-1444	RC/PZR PRESSURE	11715-RC-110/5	SB	277'	CR	S R --	ON	ON	YES	N/A	N/A	
2001	1	18	1-RC-PT-1402	RC/REACTOR COOLANT WR PRESSURE	11715-FM-093A3/22/D8	CONTMT	241' C	9	S R --	ON	ON	YES	11715-RC-131/16 11715-FK-001A	RACK 1-103	
2002	1	18	1-RC-PT-1402-1	RC/REACTOR COOLANT WR PRESSURE	11715-FM-093A3/22/D8	CONTMT	241'	9	S R --	ON	ON	YES	11715-RC-133/5	N/A	
2016	2	18	1-RC-PT-1444	RC/PZR PRESSURE	11715-FM-09381/22/C4	CONTMT	263'	9.5	S R --	ON	ON	YES	11715-RC-110/5; 11715-FK-001C	RACK 1-116	
2018	2	18	1-RC-PT-1445	RC/PZR PRESSURE	11715-FM-09381/22/C6	CONTMT	263'	10	S R --	ON	ON	YES	11715-RC-108/5; 11715-FK-001C	RACK 1-117	
2010	2	18	1-RC-PT-1455	RC/PZR PRESSURE	11715-FM-09381/22/C6	CONTMT	263'	9.2	S R --	ON	ON	YES	11715-RC-069/10 11715-FK-001C	N/A	
2012	2	18	1-RC-PT-1456	RC/PZR PRESSURE	11715-FM-09381/22/C6	CONTMT	263'	9.5	S R --	ON	ON	YES	11715-RC-071/9; 11715-FK-001C	RACK 1-118	
2014	2	18	1-RC-PT-1457	RC/PZR PRESSURE	11715-FM-09381/22/C4	CONTMT	263'	10	S R --	ON	ON	YES	11715-RC-073/9; 11715-FK-001C	RACK 1-117	
2030	1, 2	18	1-RC-PT-1472	RC/PRT PRESSURE	11715-FM-09382/23/C4	CONTMT	241'	8	S R 16	ON	ON	YES	11715-RC-041/3; 11715-FK-001A	RACK 1-103	
4258	1, 2	18	1-RH-E/P-HCV-175B	RH/RHR HX OUTLET E/P	11715-RH-005/4	CONTMT	218'	5.5	S R --	ON	ON	YES	11715-FK-001A	RACK 1-100	
4260	1, 2	18	1-RH-FT-1605	RH/RHR HX OUTLET FLOW	11715-FM-094A2/15/C4	CONTMT	217'	5.5	S R --	ON	ON	YES	11715-RH-004/6 11715-FK-01A/14	RACK 1-100	
4252	1, 2	18	1-RH-PIC-1602	RH/RHR PUMPS DISCHARGE PRESSURE	11715-FM-094A1/14/F7	CONTMT	234'	5	S R --	ON	ON	YES	11715-RH-001/2 VIMS 27369 11715-FP-013A 11715-FM-9	N/A	
4243	1, 2	18	1-RH-PT-1403	RH/RHR PUMP INLET PRESSURE	11715-FM-094A1/14/B5	CONTMT	216' 11"	4.2	S R --	ON	ON	YES	VIMS26381,25950 11715-FK-001B	N/A	
7036B	2	18	1-RS-LI-103A	RS/CASING COOLING TANK LEVEL INDICATOR	11715-FM-091B1/05/3D	SB	277'	7/C	S R I	N/A	N/A	YES	11715-RS-029/6	1-RS-LT-103A	
7036F	2	18	1-RS-LI-103B	RS/CASING COOLING TANK LEVEL INDICATOR	11715-FM-091B1/05/3C	SB	277'	7/C	S R I	N/A	N/A	YES	11715-RS-030/6	1-RS-LT-103B	
7036D	2	18	1-RS-LS-103A	RS/CASING COOLING TANK LEVEL SWITCH	11715-FM-091B1/05/3D	SB	252'	6.5/D	S R I, 36	N/A	N/A	NO	N/A	1-EI-CB-238	

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
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 Sort Criteria: Class, ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	TRAIN	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DMG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
7036G	2	18	1-RS-LS-103B	RS/CASING COOLING TANK LEVEL SWITCH	11715-FM-091B1/05/3C	SB	252'	6.5/D	S R	I, 36	N/A	N/A	NO	N/A	1-EI-CB-230	
7036A	2	18	1-RS-LT-103A	RS/CASING COOLING TANK LEVEL XMTR	11715-FM-091B1/05/4D	YARD	270'	NOTE 1X	S R	I	N/A	N/A	YES	11715-RS-029/6	1-EP-CB-04B	
7036E	2	18	1-RS-LT-103B	RS/CASING COOLING TANK LEVEL XMTR	11715-FM-091B1/05/4C	YARD	270'	NOTE 1X	S R	I	N/A	N/A	YES	11715-RS-030/6	1-EP-CB-04D	
5239	1	18	1-SW-FS-102A	SW/CCP SEAL & GEAR BOX COOLER FLOW	11715-FM-078G1/12/D2	AUX	244'	8/K	S R	--	ON	ON	YES	11715-SW-080/2	N/A	
5243	1	18	1-SW-FS-102B	SW/CCP SEAL & GEAR BOX COOLER FLOW	11715-FM-078G1/12/D7	AUX	244'	8.5/K	S R	--	ON	ON	YES	11715-SW-081/2	N/A	
5247	1	18	1-SW-FS-102C	SW/CCP SEAL & GEAR BOX COOLER FLOW	11715-FM-078G1/12/D7	AUX	244'	9/K	S R	--	ON	ON	YES	11715-SW-082/2	N/A	
5340	1	18	1-SW-FT-103	SW/SW RETURN HEADER FLOW	11715-SW-096/1	SWVH	325'	NOTE 1I	S R	--	ON	ON	YES	11715-SW-011/8	N/A	
5346	1	18	1-SW-FT-104	SW/SW RETURN HEADER FLOW	11715-FM-078H/04/D7	SWVH	325'	IRR #1	S R	--	ON	ON	YES	11715-SW-010/8	N/A	
5250	1	18	1-SW-FT-109A	SW/CCP SEAL & GEAR BOX COOLER FLOW	11715-FM-078G1/12/B2	AUX	244'	8/H	S	--	N/A	N/A	NO	11715-SW-086/1	N/A	
5261	1	18	1-SW-FT-109B	SW/CCP SEAL & GEAR BOX COOLER FLOW	11715-FM-078G1/12/A2	AUX	244'	8.5/F	S	--	N/A	N/A	NO	11715-SW-087/1	N/A	
5336	1	18	1-SW-FT-110	SW/SW HEADER TO VALVE HOUSE FLOW	11715-FM-078H/04/D5	SWVH	325'	NOTE 1H	S R	--	ON	ON	YES	11715-SW-096/1	F-SW103;JB-5102;JB-1534	
5342	1	18	1-SW-FT-111	SW/SW HEADER TO VALVE HOUSE FLOW	11715-FM-078H/04/E8	SWVH	325'	NOTE 1H	S R	--	ON	ON	YES	11715-SW-097/1	F-SW104;JB-5102;JB-1534	
5163	1	18	1-SW-PT-101A	SW/SW PUMP DISCHARGE PRESSURE	11715-FM-078A3/28/D6	SWPH	328'	--	S R	--	ON	ON	YES	11715-SW-027/6	N/A	
5165	2	18	1-SW-PT-101B	SW/SW PUMP DISCHARGE PRESSURE	11715-FM-078A3/28/D5	SWPH	328'	--	S R	--	OFF	ON	YES	11715-SW-028/6	N/A	
5288	1	18	1-SW-TIC-102A	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G1/12/D4	AUX	244'	8/K	S R	--	ON	ON	YES	11715-SW-070/1	N/A	
5289	1	18	1-SW-TIC-102B	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G1/12/D6	AUX	244'	8.5/K	S R	--	ON	ON	YES	11715-SW-071/1	N/A	
5290	1	18	1-SW-TIC-102C	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G1/12/D8	AUX	244'	9/K	S R	--	ON	ON	YES	11715-SW-072/1	N/A	
5300	1	18	1-SW-TSH-103A	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G1/12/D4	SB	252'	6.5/D	S R	36	ON	ON	YES	N/A	1-EI-CB-44	
5301	1	18	1-SW-TSH-103B	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G1/12/D6	SB	252'	6.5/D	S R	36	ON	ON	YES	N/A	1-EI-CB-44	
5302	1	18	1-SW-TSH-103C	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G1/12/D8	SB	252'	6.5/D	S R	36	ON	ON	YES	N/A	1-EI-CB-44	
5297	1	18	1-SW-TT-103A	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G1/12/D4	AUX	246'	8.2/J	S R	36	ON	ON	YES	11715-SW-007/6	1-CH-P-1A	
5298	1	18	1-SW-TT-103B	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G1/12/D6	AUX	246'	8.5/J	S R	36	ON	ON	YES	11715-SW-008/6	1-CH-P-1B	
5299	1	18	1-SW-TT-103C	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G1/12/D8	AUX	246'	9/J	S R	36	ON	ON	YES	11715-SW-009/6	1-CH-P-1C	
5505	1	18	2-EG-LS-203-HA	EG/FUEL OIL DAY TANK LEVEL	11715-FB-035A2/21/B4	SB	270'	DG	S R	--	OFF	ON	YES	N/A	N/A	
5506	2	18	2-EG-LS-203-HB	EG/FUEL OIL DAY TANK LEVEL	11715-FB-035A2/21/B4	SB	270'	DG	S R	--	OFF	ON	YES	N/A	N/A	
5509	1	18	2-EG-LS-203-JA	EG/FUEL OIL DAY TANK LEVEL	11715-FB-035A2/21/D4	SB	270'	DG	S R	--	OFF	ON	YES	N/A	N/A	

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
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LINE NO.	EQUIP TRAIN	CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elv.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING DWG. NO./REV.	SYS. & SUPPORTING COMPONENTS	REQ'D INTERCONNECTIONS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	
5510	2	18	2-EG-LS-203-JB	EG/FUEL OIL DAY TANK LEVEL	11715-FB-035A2/21/D4 SB		270'	DG	S R	--	OFF	ON	YES	N/A		N/A	
5503	1	18	2-EG-LS-2HA	EG/FUEL OIL DAY TANK LEVEL	11715-FB-035A2/21/C3 SB		270'	DG	S R	--	OFF	ON	YES	N/A		N/A	
5504	2	18	2-EG-LS-2HB	EG/FUEL OIL DAY TANK LEVEL	11715-FB-035A2/21/C3 SB		270'	DG	S R	--	OFF	ON	YES	N/A		N/A	
5507	1	18	2-EG-LS-2JA	EG/FUEL OIL DAY TANK LEVEL	11715-FB-035A2/21/D5 SB		270'	DG	S R	--	OFF	ON	YES	N/A		N/A	
5508	2	18	2-EG-LS-2JB	EG/FUEL OIL DAY TANK LEVEL	11715-FB-035A2/21/D5 SB		270'	DG	S R	--	OFF	ON	YES	N/A		N/A	
5251	1	18	2-SW-FS-202A	SW/CCP SEAL & GEAR BOX COOLER FLOW	11715-FM-078G2/10/D7 AUX		244'	9/K	S R	--	ON	ON	YES	12050-SW-046/2		N/A	
5255	1	18	2-SW-FS-202B	SW/CCP SEAL & GEAR BOX COOLER FLOW	11715-FM-078G2/10/D7 AUX		244'	9/K	S R	--	ON	ON	YES	12050-SW-047/2		N/A	
5259	1	18	2-SW-FS-202C	SW/CCP SEAL & GEAR BOX COOLER FLOW	11715-FM-078G2/10/D7 AUX		244'	9/K	S R	--	ON	ON	YES	12050-SW-048/2		N/A	
5167	1	18	2-SW-PT-201A	SW/SW PUMP DISCHARGE PRESSURE	11715-FM-078A3/28/D4 SWPH		328'	--	S R	--	ON	ON	YES	12050-SW-012/3		N/A	
5169	2	18	2-SW-PT-201B	SW/SW PUMP DISCHARGE PRESSURE	11715-FM-078A3/28/D3 SWPH		328'	--	S R	--	OFF	ON	YES	12050-SW-013/3		N/A	
5312	1	18	2-SW-TIC-202A	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G2/10/D4 AUX		244'	9.2/K	S R	--	ON	ON	YES	12050-SW-034/2		N/A	
5313	1	18	2-SW-TIC-202B	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G2/10/D6 AUX		244'	9.5/K	S R	--	ON	ON	YES	12050-SW-035/2		N/A	
5314	1	18	2-SW-TIC-202C	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G2/10/D6 AUX		244'	10/K	S R	--	ON	ON	YES	12050-SW-036/2		N/A	
5324	1	18	2-SW-TSH-203A	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G2/10/D4 SB		252'	11/D	S R	36	ON	ON	YES	N/A		2-EI-CB-23F	
5325	1	18	2-SW-TSH-203B	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G2/10/D6 SB		252'	11/D	S R	36	ON	ON	YES	N/A		2-EI-CB-23F	
5326	1	18	2-SW-TSH-203C	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G2/10/D8 SB		252'	6/D	S R	36	ON	ON	YES	N/A		2-EI-CB-23F	
5321	1	18	2-SW-TT-203A	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G2/10/D4 AUX		244'	9/J	S R	--	ON	ON	YES	12050-SW-022/5		N/A	
5322	1	18	2-SW-TT-203B	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G2/10/D6 AUX		244'	9.5/J	S R	--	ON	ON	YES	12050-SW-023/5		N/A	
5323	1	18	2-SW-TT-203C	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G2/10/D8 AUX		244'	10/J	S R	--	ON	ON	YES	12050-SW-024/5		N/A	
5009	1	19	1-CC-TE-100	CC/CCW HX OUTLET TEMP	11715-FM-079A1/17/D3 AUX		244'	8.3/G	S R	--	ON	ON	YES	11715-CC-106/3		N/A	
5086	1	19	1-CC-TE-101A	CC/CCW PUMPS SUCTION HEADER TEMP	11715-FM-079A1/17/C7 AUX		244'	8.5/H	S R	--	ON	ON	YES	11715-CC-099/3		N/A	
5087A	1	19	1-CC-TE-101B	CC/CCW PUMPS SUCTION HEADER TEMP	11715-FM-079A1/17/C7 AUX		244'	8.5/H	S R	--	ON	ON	YES	11715-CC-107/5		N/A	
5094	1	19	1-CC-TE-149A	CC/RHR HX COOLING WATER OUTLET TEMP	11715-FM-079B1/21/A8 AUX		244'	7/KL	S R	--	ON	ON	YES	11715-CC-100/3		N/A	
5102	1	19	1-CC-TE-149B	CC/RHR HX COOLING WATER OUTLET TEMP	11715-FM-079B1/21/C7 AUX		244'	7/KL	S R	--	ON	ON	YES	11715-CC-101/4		N/A	
5118	1	19	1-CC-TE-150A	CC/RHR PUMP SEAL COOLER OUTLET TEMP	11715-FM-079B5/21/C4 CONTMT		231'	6	S R	--	ON	ON	YES	11715-CC-023/3		N/A	

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA1\_SSEL.DBF / 05/20/97 / 11:43:22  
 Sort Criteria: Class, ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	TRAIN	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elv.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
5119	1	19	1-CC-TE-1508	CC/RHR PUMP SEAL COOLER OUTLET TEMP	11715-FM-079B5/21/B4	CONTMT	231'	6	S	R --	ON	ON	YES	11715-CC-024/3	N/A	
1082	1	19	1-CH-TE-1123	CH/REGEN HX OUTLET CHARGING TEMP	11715-FM-095C1/14/E5	CONTMT	241'	11	S	R --	N/A	N/A	YES	11715-CH-002/4 VIMS 27172 11715-CH-002	N/A	
5449E	1	19	1-HV-TC-1200A	HV/CHILLED WATER P. DISCH. TEMP.	11715-FB-040A1/13	SB	254'	CHILLER RM	S	R --	ON	ON	YES	N/A	N/A	
5449K	2	19	1-HV-TC-1200B	HV/CHILLED WATER P. DISCH. TEMP.	11715-FB-040A1/13	SB	254'	CHILLER RM	S	R --	ON	ON	YES	N/A	N/A	
5449Z4	2	19	1-HV-TC-1200C	HV/CHILLED WATER PUMP DISCH. TEMP.	11715-FB-040A1/13/D6	SB	254'	CHILLER RM	S	R --	OFF	ON	YES	N/A	N/A	
3034	1, 2	19	1-RC-TE-1313	RC/RVLS TEMP	13075-FM-093C1/06/F7	CONTMT	291'	4	S	R --	ON	ON	YES	N/A	N/A	
3033	1, 2	19	1-RC-TE-1314	RC/RVLS TEMP	13075-FM-093C1/06/F6	CONTMT	274'	5	S	R --	ON	ON	YES	N/A	N/A	
3031	1, 2	19	1-RC-TE-1315	RC/RVLS TEMP	13075-FM-093C1/06/E6	CONTMT	259'	9	S	R --	ON	ON	YES	N/A	N/A	
3032	1, 2	19	1-RC-TE-1316	RC/RVLS TEMP	13075-FM-093C1/06/F6	CONTMT	259'	5	S	R --	ON	ON	YES	N/A	N/A	
3021	1, 2	19	1-RC-TE-1317	RC/RVLS IN-CORE THIMBLE	13075-FM-093C1/06/C8	CONTMT	216'	4	S	R --	ON	ON	YES	N/A	N/A	
3023	1, 2	19	1-RC-TE-1318	RC/RVLS THIMBLE TO BELLOWS LINE	13075-FM-093C1/06/B7	CONTMT	244'	4	S	R --	ON	ON	YES	N/A	N/A	
3035	1, 2	19	1-RC-TE-1323	RC/RVLS TEMP	13075-FM-093C2/06/E3	CONTMT	291'	4	S	R --	ON	ON	YES	N/A	N/A	
3036	1, 2	19	1-RC-TE-1324	RC/RVLS TEMP	13075-FM-093C2/06/E4	CONTMT	284'	5	S	R --	ON	ON	YES	N/A	N/A	
3037	1, 2	19	1-RC-TE-1325	RC/RVLS TEMP	13075-FM-093C2/06/D4	CONTMT	259'	3	S	R --	ON	ON	YES	N/A	N/A	
3022	1, 2	19	1-RC-TE-1327	RC/RVLS IN-CORE THIMBLE	13075-FM-093C1/06/C8	CONTMT	244'	4	S	R --	ON	ON	YES	N/A	N/A	
3024	1, 2	19	1-RC-TE-1328	RC/RVLS IN-CORE THIMBLE	13075-FM-093C1/06/B8	CONTMT	244'	4	S	R --	ON	ON	YES	N/A	N/A	
4281	1, 2	19	1-RC-TE-1410	RC/LOOP 1 COLD LEG TEMP (T-COLD)	11715-FM-093A1/19/C8	CONTMT	244'	18.7	S	R --	ON	ON	YES	11715-RC-121/16	N/A	
4280	1, 2	19	1-RC-TE-1413	RC/LOOP 1 HOT LEG TEMP (T-HOT)	11715-FM-093A1/19/E6	CONTMT	244'	2	S	R --	ON	ON	YES	11715-RC-124/17	N/A	
4285	1, 2	19	1-RC-TE-1420	RC/LOOP 2 COLD LEG TEMP (T-COLD)	11715-FM-093A2/19/C8	CONTMT	244'	13	S	R --	ON	ON	YES	11715-RC-122/15	N/A	
4284	1, 2	19	1-RC-TE-1423	RC/LOOP 2 HOT LEG TEMP (T-HOT)	11715-FM-093A2/19/E6	CONTMT	244'	14	S	R --	ON	ON	YES	11715-RC-125/14	N/A	
4289	1, 2	19	1-RC-TE-1430	RC/LOOP 3 COLD LEG TEMP (T-COLD)	11715-FM-093A3/22/D2	CONTMT	244'	7	S	R --	ON	ON	YES	11715-RC-123/14	N/A	
4288	1, 2	19	1-RC-TE-1433	RC/LOOP 3 HOT LEG TEMP (T-HOT)	11715-FM-093A3/22/E5	CONTMT	257'	8	S	R --	ON	ON	YES	11715-RC-126/18	N/A	
3019	1, 2	19	1-RC-TE-1463	RC/PZR PORV OUTLET TEMP	11715-FM-093B1/22/B5	CONTMT	311'	9	R	--	ON	ON	YES	11715-RC-056/4; N/A 11715-RC-055		
4280A	1, 2	19	1-RC-TR-1410	RC/LP1, CH1, HOT/COLD LEG TMP	11715-RC-121,124	SB	277'	ER	S	R --	ON	ON	YES	11715-FE-9EX	1-EP-MC-20	
4284A	1, 2	19	1-RC-TR-1413	RC/LOOP 2 HOT LEG TEMP	11715-RC-125/14	SB	277'	CR	S	R --	ON	ON	YES	11715-FE-9Y	1-EP-MC-20	

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA1\_SSEL.DBF / 05/20/97 / 11:43:22  
 Sort Criteria: Class, ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev	LOCATION Rm. or Row/Col	SORT NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DMG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE	
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10) (11)	(12)	(13)	(14)	(15)	(16)	(17)	
4285A	1, 2	19	1-RC-TR-1420	RC/LOOP 2 WIDE RANGE HOT/COLD LEG TEMP	11715-RC-122/15	SB	277'	CR	S R	--	ON	ON	YES	11715-FE-9EY	1-EP-MC-20
4289A	1, 2	19	1-RC-TR-1430	RC/LOOP 3 WIDE RANGE HOT/COLD LEG TEMP	11715-RC-123/14	SB	277'	CR	S R	--	ON	ON	YES	11715-FE-9EY	1-EP-MC-20
4288A	1, 2	19	1-RC-TR-1433	RC/LOOP 3 HOT LEG TEMP	11715-RC-126/18	SB	277'	CR	S R	--	ON	ON	YES	11715-FE-9EX	1-EP-MC-20
4254	1, 2	19	1-RH-TE-1604	RH/RHR HX INLET TEMPERATURE	11715-FM-094A2/15/C8	CONTMT	231'	5	S R	--	ON	ON	YES	11715-RH-002/4 VIMS 27370 11715-RH-002	N/A
4261	1, 2	19	1-RH-TE-1606	RH/RHR HX OUTLET TEMPERATURE	11715-FM-094A2/15/C4	CONTMT	216'	7	S R	--	ON	ON	YES	11715-RH-003/4 VIMS30284-30287	N/A
5294	1	19	1-SW-TE-103A	SW/CCP LUBE OIL COOLER CONTROL	11715-SW-007/6	AUX	246'	8.2/J	S R	--	ON	ON	YES	N/A	N/A
5295	1	19	1-SW-TE-103B	SW/CCP LUBE OIL COOLER CONTROL	11715-SW-008/6	AUX	246'	8.5/J	S R	--	ON	ON	YES	N/A	N/A
5296	1	19	1-SW-TE-103C	SW/CCP LUBE OIL COOLER CONTROL	11715-SW-009/6	AUX	246'	9/J	S R	--	ON	ON	YES	N/A	N/A
5330	1	19	1-SW-TE-106	SW/SW HEADER TO VALVE HOUSE TEMP	11715-FM-078H/04/E6	SWVH	321'	SWVH	S R	--	ON	ON	YES	11715-SW-048/5	JB-5104;JB-5072
5333	1	19	1-SW-TE-107	SW/SW HEADER TO VALVE HOUSE TEMP	11715-FM-078H/04/E7	SWVH	326'	SWVH	S R	--	ON	ON	YES	11715-SW-047/5	JB-5102;JB-1534
5318	1	19	2-SW-TE-203A	SW/CCP LUBE OIL COOLER CONTROL	12050-SW-022/5	AUX	246'	9/J	S R	--	ON	ON	YES	N/A	N/A
5319	1	19	2-SW-TE-203B	SW/CCP LUBE OIL COOLER CONTROL	12050-SW-023/5	AUX	246'	9.5/J	S R	--	ON	ON	YES	N/A	N/A
5320	1	19	2-SW-TE-203C	SW/CCP LUBE OIL COOLER CONTROL	12050-SW-024/5	AUX	246'	10/J	S R	--	ON	ON	YES	N/A	N/A
5004	1	20	1-CC-FI-100A	CC/CCW HX OUTLET FLOW	11715-FM-079A1/17/F4	SB	277'	CR	S R	36	ON	ON	YES	11715-CC-063/3	1-EI-CB-04
5008	1	20	1-CC-FI-100B	CC/CCW HX OUTLET FLOW	11715-FM-079A1/17/D4	SB	277'	CR	S R	36	ON	ON	YES	11715-CC-063/3	1-EI-CB-04
5089	1	20	1-CC-FI-132A-1	CC/CC HX FLOW TO RHR HX	11715-FM-079B1/21/F6	SB	277'	CR	S R	36	ON	ON	YES	11715-CC-110/5	1-EI-CB-04
5097	1	20	1-CC-FI-132B-1	CC/CC HX FLOW TO RHR HX	11715-FM-079B1/21/F5	SB	277'	CR	S R	36	ON	ON	YES	11715-CC-111/6	1-EI-CB-04
5050	1, 2	20	1-CC-LI-101-1	CC/CC SURGE TANK LEVEL	11715-FM-079A1/17/D7	SB	277'	CR	S R	--	ON	ON	YES	11715-CC-057/8	N/A
5051	1, 2	20	1-CC-LI-101-2	CC/CC SURGE TANK LEVEL	11715-FM-079A1/17/D7	SB	277'	CR	S R	--	ON	ON	YES	11715-CC-057/8	N/A
5052	1, 2	20	1-CC-LI-101-3	CC/CC SURGE TANK LEVEL	11715-FM-079A1/17/D7	SB	297.5'	CR	S R	--	ON	ON	YES	11715-CC-057/8	N/A
5012	1	20	1-CC-PI-100	CC/CCW HX OUTLET PRESSURE	11715-FM-079A1/17/D3	SB	277'	CR	S R	36	ON	ON	YES	11715-CC-059/6	1-EI-CB-04
5010	1	20	1-CC-TI-100	CC/CCW HX OUTLET TEMP	11715-FM-079A1/17/D3	SB	277'	CR	S R	36	ON	ON	YES	11715-CC-106/3	1-EI-CB-04
5087	1	20	1-CC-TI-101A	CC/CCW PUMPS SUCTION HEADER TEMP	11715-FM-079A1/17/C7	SB	277'	CR	S R	36	ON	ON	YES	11715-CC-099/3	1-EI-CB-04
5087B	1	20	1-CC-TI-101B	CC/CCW PUMPS SUCTION HEADER TEMP	11715-FM-079A1/17/C7	SB	277'	CR	S R	36	ON	ON	YES	11715-CC-107/5	1-EI-CB-04

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NAI\_SSEL.DBF / 05/20/97 / 11:43:22  
 Sort Criteria: Class, ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
5095	1	20	1-CC-TI-149A	CC/RHR HX COOLING WATER OUTLET TEMP	11715-FM-07981/21/A8	SB	277'	CR	S	R	36	ON	ON	YES	11715-CC-100/3	1-EI-CB-04
5103	1	20	1-CC-TI-149B	CC/RHR HX COOLING WATER OUTLET TEMP	11715-FM-07981/21/C7	SB	277'	CR	S	R	36	ON	ON	YES	11715-CC-101/4	1-EI-CB-04
5087C	1	20	1-CC-TI-201B	CC/CCW PUMPS SUCTION HEADER TEMP	11715-FM-079A1/17/C7	SB	277'	CR	S	R	36	ON	ON	YES	11715-CC-107/5	2-EI-CB-04
1079	1	20	1-CH-FC-1122C	CH/CHARGING FLOW TO REGEN HX	11715-CH-001/7	SB	277'	CR	S	R	--	ON	ON	YES	N/A	N/A
1178	1	20	1-CH-FI-1110	CH/BAST TO VCT FLOW	11715-CH-015/4	SB	277'	CR	S	R	--	ON	ON	YES	N/A	N/A
1078	1	20	1-CH-FI-1122A	CH/CHARGING FLOW TO REGEN HX	11715-CH-001/7	SB	277'	CR	S	R	36	ON	ON	YES	N/A	1-EI-CB-03
1190	1, 2	20	1-CH-FI-1124A	CH/RCP SEAL WATER INJECTION FLOW	11715-CH-058/4	SB	277'	CR	S	R	20, 36	ON	ON	YES	N/A	1-EI-CB-03
1102	1, 2	20	1-CH-FI-1127A	CH/RCP SEAL WATER INJECTION FLOW	11715-CH-059/4	SB	277'	CR	S	R	20, 36	ON	ON	YES	N/A	1-EI-CB-03
1104	1, 2	20	1-CH-FI-1130A	CH/RCP SEAL WATER INJECTION FLOW	11715-CH-060/5	SB	277'	CR	S	R	20, 36	ON	ON	YES	N/A	1-EI-CB-03
1093	1	20	1-CH-HIC-1186	CH/CCP TO RCP SEAL INJECTION	11715-CH-068/1	SB	277'	CR	R	--	ON	ON	YES	N/A	1-EI-CB-01	
1158	1	20	1-CH-LI-1106	CH/BAST A LEVEL	11715-CH-046/3	SB	277'	CR	S	R	--	ON	ON	YES	N/A	N/A
1160	2	20	1-CH-LI-1108	CH/BAST B LEVEL	11715-CH-047/4	SB	277'	CR	S	R	--	ON	ON	YES	N/A	N/A
1052	1	20	1-CH-LI-1112	CH/VCT LEVEL	11715-CH-011/9	SB	277'	CR	S	R	36	ON	ON	YES	N/A	1-EI-CB-03
1050	1	20	1-CH-LI-1115	CH/VCT LEVEL	11715-CH-012/6	SB	277'	CR	S	R	36	ON	ON	YES	N/A	1-EI-CB-03
1159	1	20	1-CH-LI-1161	CH/BAST A LEVEL	11715-CH-042/3	SB	277'	CR	S	R	--	ON	ON	YES	N/A	N/A
1083	1	20	1-CH-TI-1123	CH/REGEN HX OUTLET CHARGING TEMP	11715-CH-002/4	SB	277'	CR	S	R	36	N/A	N/A	YES	N/A	1-EI-CB-03
4121	1	20	1-CN-LI-100B-1	CN/CONDENSATE STORAGE TANK LEVEL	11715-CN-001/10	SB	277'	CR	S	R	36	ON	ON	YES	N/A	1-EI-CB-04
4101A	1	20	1-CN-LI-104	CN/CONDENSATE STORAGE TANK LEVEL	11715-CN-002/4	SB	277'	CR	S	R	--	ON	ON	YES	N/A	N/A
55501	1	20	1-EE-EG-01C	EG/CRE PANEL 1H	DWG NOT AVAILABLE	SB	272'	EDG	S	R	6,41	N/A	N/A	YES	N/A	N/A
5550K	1	20	1-EE-EG-02C	EG/CRE PANEL 2H	DWG NOT AVAILABLE	SB	272'	EDG	S	R	6,41	N/A	N/A	YES	N/A	N/A
5550J	1	20	1-EE-EG-03C	EG/CRE PANEL 1J	DWG NOT AVAILABLE	SB	272'	EDG	S	R	6,41	N/A	N/A	YES	N/A	N/A
5550L	1	20	1-EE-EG-04C	EG/CRE PANEL 2J	DWG NOT AVAILABLE	SB	272'	EDG	S	R	6,41	N/A	N/A	YES	N/A	N/A
5550E	1	20	1-EE-EG-1A	EG/EDG RM DIESEL GAGEBOARD 1H	11715-1.30-212C	SB	272'	EDG	S	R	6,36	N/A	N/A	YES	N/A	EDG-1H
5550A	1	20	1-EE-EG-1B	EG/EDG RM ENGINE CONTRGL RELAY BOX 1H	11715-1.30-212C	SB	272'	EDG	S	R	6,36, 41	N/A	N/A	YES	N/A	EDG-1H
5550G	1	20	1-EE-EG-2A	EG/EDG RM DIESEL GAGEBOARD 2H	11715-1.30-212C	SB	272'	EDG	S	R	6,36	N/A	N/A	YES	N/A	EDG-2H



NORTH ANNA UNIT 3  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA1 SSEL DBF / 05/20/97 / 11:43:22  
 Sort Criteria: Class, ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAHN CLASS	MARK NO.	SYSTF //EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Fir. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP Normal	ST. Desired	POWER REQD?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
5550C	1	20	1-EE-EG-2B	EG/EDG RM ENGINE CONTROL RELAY BOX 2H	11715-1.30-212C	SB	272'	EDG	S R 6,36, 41	N/A	N/A	YES	N/A	EDG-2H	
5550F	1	20	1-EE-EG-3A	EG/EDG RM DIESEL GAGEBOARD 1J	11715-1.30-212C	SB	272'	EDG	S R 6,36	N/A	N/A	YES	N/A	EDG-1J	
5550B	1	20	1-EE-EG-3B	EG/EDG RM ENGINE CONTROL RELAY BOX 1J	11715-1.30-212C	SB	272'	EDG	S R 6,36, 41	N/A	N/A	YES	N/A	EDG-1J	
5550H	1	20	1-EE-EG-4A	EG/EDG RM DIESEL GAGEBOARD 2J	11715-1.30-212C	SB	272'	EDG	S R 6,36	N/A	N/A	YES	N/A	EDG-2J	
5550D	1	20	1-EE-EG-4B	EG/EDG RM ENGINE CONTROL RELAY BOX 2J	11715-1.30-212C	SB	272'	EDG	S R 6,36, 41	N/A	N/A	YES	N/A	EDG-2J	
6100		20	1-EG-P-1H	EDG CONTROL PANEL		SB	270'	EDG	S --						
6101		20	1-EG-P-1J	EDG CONTROL PANEL		SB	270'	EDG	S --						
5535	1	20	1-EG-PS-602HA	EG/AIR COMPRESSOR AIR RECEIVER PRESSURE	11715-FM-107A1/09/E5	SB	270'	EDG	S R	ON	ON	YES	N/A	1-EG-P-1H	
5536	2	20	1-EG-PS-602HB	EG/AIR COMPRESSOR AIR RECEIVER PRESSURE	11715-FM-107A2/09/E5	SB	270'	EDG	S R	ON	ON	YES	N/A	1-EG-P-1H	
5537	1	20	1-EG-PS-602JA	EG/AIR COMPRESSOR AIR RECEIVER PRESSURE	11715-FM-107A3/10/E5	SB	270'	EDG	S R	ON	ON	YES	N/A	1-EG-P-1J	
5538	2	20	1-EG-PS-602JB	EG/AIR COMPRESSOR AIR RECEIVER PRESSURE	11715-FM-107A4/10/E5	SB	270'	EDG	S R	ON	ON	YES	N/A	1-EG-P-1J	
5519	1	20	1-EG-PS-603H	EG/FUEL OIL DIFF PRESS	11715-1.30-212C	SB	270'	EDG	S R	OFF	ON	YES	N/A	1-EG-P-1H	
5520	2	20	1-EG-PS-603J	EG/FUEL OIL DIFF PRESS	11715-1.30-212C	SB	270'	EDG	S R	OFF	ON	YES	N/A	1-EG-P-1J	
5377	1	20	1-EI-CB-01	EI/BENCH BOARD 1-1	11715-FE-027B/33/4	SB	277'	CR	S R --	N/A	N/A	YES	N/A	N/A	
5378	1	20	1-EI-CB-02	EI/BENCH BOARD 1-2	11715-FE-027B/33/4	SB	277'	CR	S R --	N/A	N/A	YES	N/A	N/A	
5379	1	20	1-EI-CB-03	EI/VERTICAL BOARD 1-1	11715-FE-027B/33/4	SB	277'	CR	S R --	N/A	N/A	YES	N/A	N/A	
5380	1	20	1-EI-CB-04	EI/VERTICAL BOARD 1-2	11715-FE-027B/33/4	SB	277'	CR	S R --	N/A	N/A	YES	N/A	N/A	
5381	1	20	1-EI-CB-05	EI/VERTICAL BOARD 1-3	11715-FE-027B/33/4	SB	277'	CR	S R --	N/A	N/A	YES	N/A	N/A	
5382	1	20	1-EI-CB-06A	EI/AUXILIARY SHUTDOWN PANEL	11715-FE-027A/22/A3	SB	254'	8/G9	S R --	N/A	N/A	YES	N/A	N/A	
5383	1	20	1-EI-CB-06B	EI/AUXILIARY SHUTDOWN PANEL	11715-FE-027A/22/A3	SB	254'	8/CD	S R --	N/A	N/A	YES	N/A	N/A	
5479A	1	20	1-EI-CB-08A	EG/EMERG DG CONTROL PANEL (H-TRAIN)	11715-FE-027B/33/H2	SB	277'	CR	S R 6	N/A	N/A	YES	N/A	N/A	
5479B	1	20	1-EI-CB-08B	EG/EMERG DG CONTROL PANEL (H-TRAIN)	11715-FE-027B/33/H2	SB	277'	CR	S R 6,41	N/A	N/A	YES	N/A	N/A	

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA1\_SSEL.DBF / 05/20/97 / 11:43:22  
 Sort Criteria: Class, ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN	CLASS	MARK NO	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP Normal	ST Desired	POWER REQ'D?	SUPPORTING DWG. NO./REV.	SYS. & SUPPORTING COMPONENTS	REQ'D INTERCONNECTIONS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	
5384	1	20	1-EI-CB-18A	EI/COMPUTER I/O CABINET 00	11715-FE-027B/33/5	SB	277'	COMP #2	R	--	N/A	N/A	YES	N/A	N/A	N/A	
5385	1	20	1-EI-CB-18B	EI/COMPUTER I/O CABINET 01	11715-FE-027B/33/5	SB	277'	COMP #2	R	--	N/A	N/A	YES	N/A	N/A	N/A	
5386	1	20	1-EI-CB-18C	EI/COMPUTER I/O CABINET 02	11715-FE-027B/33/5	SB	277'	COMP #2	R	--	N/A	N/A	YES	N/A	N/A	N/A	
5418B	1	20	1-EI-CB-201	EI/DIESEL ISOL PANEL (H-TRAIN)	11715-FE-3KG/3	SB	272'	EDG	S	R	6,41	N/A	N/A	YES	N/A	N/A	
5183A	1	20	1-EI-CB-202	EI/EMERG SWGR RM DG ISOL PANEL (H-TRAIN)	11715-FE-027A/22/E4	SB	254'	7/D	S	R	6,41	N/A	N/A	YES	N/A	N/A	
5387	1	20	1-EI-CB-21	EI/CONTROL PANEL	11715-FE-027B/33/6	SB	277'	LOGIC	S	R	--	N/A	N/A	YES	N/A	N/A	
5388	1	20	1-EI-CB-21A	EI/CONTROL PANEL	DWG NOT AVAILABLE	SB	277'	8.4/D	S	R	--	N/A	N/A	YES	N/A	N/A	
5389	1	20	1-EI-CB-23A	EI/PROCESS CABINET A	11715-FE-004A/22	SB	252'	IRR #1	S	R	41	N/A	N/A	YES	N/A	N/A	
5390	1	20	1-EI-CB-23B	EI/PROCESS CABINET B	11715-FE-004B/26	SB	252'	IRR #1	S	R	41	N/A	N/A	YES	N/A	N/A	
5391	1	20	1-EI-CB-23C	EI/PROCESS CABINET C	11715-FE-004C/24	SB	252'	IRR #1	S	R	41	N/A	N/A	YES	N/A	N/A	
5392	1	20	1-EI-CB-23D	EI/PROCESS CABINET D	11715-FE-004D/27	SB	252'	IRR #1	S	R	41	N/A	N/A	YES	N/A	N/A	
5393	1	20	1-EI-CB-23E	EI/PROCESS CABINET E	11715-FE-004E/18	SB	252'	IRR #1	S	R	41	N/A	N/A	YES	N/A	N/A	
5394	1	20	1-EI-CB-25	EI/CONTROL PANEL	11715-FE-027B/33/4	SB	277'	LOGIC	S	R	--	N/A	N/A	YES	N/A	N/A	
5395	1	20	1-EI-CB-300	EI/CONTROL PANEL	DWG NOT AVAILABLE	SB	277'	8.8/D	S	R	--	N/A	N/A	N/A	N/A	N/A	
5396	1	20	1-EI-CB-301C	EI/CONTROL PANEL	11715-FE-027A/22	SB	252'	5.2/DE	S	R	--	N/A	N/A	YES	N/A	N/A	
5397	1	20	1-EI-CB-34	EI/POST ACCIDENT MONITORING & CONTROL PANEL	11715-FE-027B/33/4	SB	277'	CR	S	R	--	N/A	N/A	YES	N/A	N/A	
5398	1	20	1-EI-CB-44	EI/PROCESS CABINET F	11715-FE-004G/21	SB	252'	IRR #1	S	R	41,42	N/A	N/A	YES	N/A	N/A	
5399	1	20	1-EI-CB-47A	EI/SOLID STATE PROTECTION INPUT CABINET (TRAIN A)	11715-1.31 SERIES	SB	252'	IRR #1	S	R	41	N/A	N/A	YES	N/A	N/A	
5400	1	20	1-EI-CB-47B	EI/SOLID STATE PROTECTION INPUT CABINET (TRAIN B)	11715-1.31 SERIES	SB	252'	IRR #1	S	R	41	N/A	N/A	YES	N/A	N/A	
5401	1	20	1-EI-CB-47C	EI/SOLID STATE PROTECTION LOGIC CABINET (TRAIN A)	11715-1.31 SERIES	SB	252'	IRR #1	S	R		N/A	N/A	YES	N/A	N/A	
5402	1	20	1-EI-CB-47D	EI/SOLID STATE PROTECTION LOGIC CABINET (TRAIN B)	11715-1.31 SERIES	SB	252'	IRR #1	S	R		N/A	N/A	YES	N/A	N/A	
5403	1	20	1-EI-CB-47E	EIP/SOLID STATE PROTECTION OUTPUT CABINET (TRAIN A)	11715-1.31 SERIES	SB	252'	IRR #1	S	R	41	N/A	N/A	YES	N/A	N/A	
5404	1	20	1-EI-CB-47F	EI/SOLID STATE PROTECTION OUTPUT CABINET (TRAIN B)	11715-1.31 SERIES	SB	252'	IRR #1	S	R	41	N/A	N/A	YES	N/A	N/A	

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

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 Sort Criteria: Class, ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	TRAIN	EQUIP CLASS	MARK NO	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING Dwg. No./Rev.	SYS. & SUPPORTING COMPONENTS	REQ'D INTERCONNECTIONS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10) (11)	(12)	(13)	(14)	(15)	(16)	(17)	
5405	1	20	1-EI-CB-48A	EI/AUXILIARY RELAY RACK 1	11715-FE-027A	SB	252'	IRR #1	S R 41	N/A	N/A	YES	N/A	N/A	N/A	
5406	1	20	1-EI-CB-51	EI/PRIMARY PLANT PROCESS CABINET 1	11715-FE-047Y/1	SB	252'	IRR #1	S R --	N/A	N/A	YES	N/A	N/A	N/A	
5407	1	20	1-EI-CB-52	EI/PRIMARY PLANT PROCESS CABINET 2	11715-FE-047Y/1	SB	252'	IRR #1	S R --	N/A	N/A	YES	N/A	N/A	N/A	
5408	1	20	1-EI-CB-53	EI/PRIMARY PLANT PROCESS CABINET 3	11715-FE-004S/19	SB	252'	IRR #1	S R --	N/A	N/A	YES	N/A	N/A	N/A	
5409	1	20	1-EI-CB-54	EI/PRIMARY PLANT PROCESS CABINET 4	11715-FE-047Y/1	SB	252'	IRR #1	S R --	N/A	N/A	YES	N/A	N/A	N/A	
5410	1	20	1-EI-CB-55	EI/PRIMARY PLANT PROCESS CABINET 5	11715-FE-004U/11	SB	252'	IRR #1	S R --	N/A	N/A	YES	N/A	N/A	N/A	
5411	1	20	1-EI-CB-56	EI/PRIMARY PLANT PROCESS CABINET 6	11715-FE-004V/16	SB	252'	IRR #1	S R --	N/A	N/A	YES	N/A	N/A	N/A	
5412	1	20	1-EI-CB-57	EI/PRIMARY PLANT PROCESS CABINET 7	11715-FE-047Y/1	SB	252'	IRR #1	S R --	N/A	N/A	YES	N/A	N/A	N/A	
5413	1	20	1-EI-CB-58	EI/PRIMARY PLANT PROCESS CABINET 8	11715-FE-047Y/1	SB	252'	IRR #1	S R --	N/A	N/A	YES	N/A	N/A	N/A	
5414	1	20	1-EI-CB-62A	EI/SAFEGUARDS TEST CABINET A	11715-1.31 SERIES	SB	252'	IRR #1	S R --	N/A	N/A	YES	N/A	N/A	N/A	
5415	1	20	1-EI-CB-62B	EI/SAFEGUARDS TEST CABINET B	11715-1.31 SERIES	SB	252'	IRR #1	S R --	N/A	N/A	YES	N/A	N/A	N/A	
5416	1	20	1-EI-CB-64A	EI/SOLID STATE PROT SYS AUX RELAY RACK	11715/12050-1.28-45B	SB	252'	IRR #1	S R 41	N/A	N/A	YES	N/A	N/A	N/A	
5417	1	20	1-EI-CB-64B	EI/SOLID STATE PROT SYS AUX RELAY RACK	11715/12050-1.28-45B	SB	252'	IRR #1	S R 41	N/A	N/A	YES	N/A	N/A	N/A	
5418	1	20	1-EI-CP-04	EI/MICROPROCESSOR CABINET	11715-FE-027B/33	SB	277'	CR	S R --	N/A	N/A	YES	N/A	N/A	N/A	
5419	1	20	1-EP-CB-10C	EP/PZR DISTRIBUTION PANEL #2	DWG NOT AVAILABLE	AUX	280'	RCRM/12/JK	S R --	N/A	N/A	YES	12050-RC-108/8	N/A	N/A	
5420	1	20	1-EP-CB-10F	EP/RCS PZR CONTROL PANEL	DWG NOT AVAILABLE	AUX	280'	RCRM/12/	S R --	N/A	N/A	YES	12050-RC-108/8	N/A	N/A	
5425G	1	20	1-EP-CB-115B	EP/CONT ISOL TRIP VALVE RELAY PANEL A-1	11715-FE-188K1/5/F2	AUX	260'	ELEC TUNNEL #1	S R 6,41	N/A	N/A	YES	N/A	N/A	N/A	
5425H	1	20	1-EP-CB-115C	EP/CONT ISOL TRIP VALVE RELAY PANEL A-2	11715-FE-188K1/5/J2	AUX	260'	ELEC TUNNEL #1	S R 6,41	N/A	N/A	YES	N/A	N/A	N/A	
5425J	1	20	1-EP-CB-116A	EP/CONT ISOL TRIP VALVE RELAY PANEL B	11715-FE-188K1/5/F5	AUX	260'	ELEC TUNNEL #1	S R 6	N/A	N/A	YES	N/A	N/A	N/A	
5425F	1	20	1-EP-CB-116C	EI/CONT ISOL TRIP VALVE RELAY PANEL	11715-FE-188K1/5/C8	AUX	260'	ELEC TUNNEL #1	S R 6,41	N/A	N/A	NO	11715-RC-152/1	N/A	N/A	
5563	1	20	1-EP-CB-11AN	EP/HEAT TRACE DISTRIBUTION CABINET	11715-FE-1Q/27	AUX	259'	7.5/L	S R --	ON	ON	YES	N/A	N/A	N/A	
5575	2	20	1-EP-CB-11AR	EP/HEAT TRACE DISTRIBUTION CABINET	11715-FE-1Q/27	AUX	259'	8.5/L	S R --	ON	ON	YES	N/A	N/A	N/A	
5564	1	20	1-EP-CB-11BN	EP/HEAT TRACE DISTRIBUTION CABINET	11715-FE-1Q/27	AUX	259'	7.5/L	S R --	ON	ON	YES	N/A	N/A	N/A	
5576	2	20	1-EP-CB-11BR	EP/HEAT TRACE DISTRIBUTION CABINET	11715-FE-1Q/27	AUX	259'	7.9/L	S R --	ON	ON	YES	N/A	N/A	N/A	

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
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Data Base File Name/Date/Time: NA1\_SSEL.DBF / 05/20/97 / 11:43:22  
 Sort Criteria: Class, ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRN	CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Fir. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQD?	SUPPORTING SYS. DWG. NO./REV.	REQ'D & SUPPORTING COMPONENTS	INTERCONNECTIONS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	
5587	1	20	1-EP-CB-11N1	EP/HEAT TRACE CONTROL CABINET	11715-FE-63 SERIES	AUX	259'	7.5/L	S R	30	ON	ON	YES	N/A	N/A		
5588	2	20	1-EP-CB-11R1	EP/HEAT TRACE CONTROL CABINET	11715-FE-63 SERIES	AUX	259'	7.5/L	S R	30	ON	ON	YES	N/A	N/A		
54251	1	20	1-EP-CB-121A	EP/CONT ISOL TRIP VALVE RELAY PANEL	13075-FE-3ME	SB	277'	LOGIC RM #1	S R	6,41	N/A	N/A	YES	11715-SS-008/3	1-EP-CB-19A		
5425K	1	20	1-EP-CB-121B	EP/CONT ISOL TRIP VALVE RELAY PANEL	13075-FE-3ME	SB	277'	LOGIC RM #1	S R	6,41	N/A	N/A	YES	11715-SS-008/3	1-EP-CB-19B		
5577	2	20	1-EP-CB-12AR	EP/HEAT TRACE DISTRIBUTION CABINET	11715-FE-63 SERIES	AUX	259'	NOTE 1C	S R	30	ON	ON	YES	N/A	N/A		
5578	2	20	1-EP-CB-12BR	EP/HEAT TRACE DISTRIBUTION CABINET	11715-FE-63 SERIES	AUX	259'	NOTE 1C	S R	30	ON	ON	YES	N/A	N/A		
5589	1	20	1-EP-CB-12N1	EP/HEAT TRACE CONTROL CABINET	11715-FE-63 SERIES	AUX	259'	NOTE 1J	S R	30	ON	ON	YES	N/A	N/A		
5590	2	20	1-EP-CB-12R1	EP/HEAT TRACE CONTROL CABINET	11715-FE-63 SERIES	AUX	259'	NOTE 1J	S R	30	ON	ON	YES	N/A	N/A		
5567	1	20	1-EP-CB-13AN	EP/HEAT TRACE DISTRIBUTION CABINET	11715-FE-1Q/27	AUX	274'	8.7/H	S R	--	ON	ON	YES	N/A	N/A		
5579	2	20	1-EP-CB-13AR	EP/HEAT TRACE DISTRIBUTION CABINET	11715-FE-63 SERIES	AUX	274'	NOTE 1D	S R	30	ON	ON	YES	N/A	N/A		
5568	1	20	1-EP-CB-13BN	EP/HEAT TRACE DISTRIBUTION CABINET	11715-FE-1Q/27	AUX	274'	8.7/H	S R	--	ON	ON	YES	N/A	N/A		
5580	2	20	1-EP-CB-13BR	EP/HEAT TRACE DISTRIBUTION CABINET	11715-FE-63 SERIES	AUX	274'	NOTE 1D	S R	30	ON	ON	YES	N/A	N/A		
5591	1	20	1-EP-CB-13N1	EP/HEAT TRACE CONTROL CABINET	11715-FE-63 SERIES	AUX	274'	NOTE 1D	S R	30	ON	ON	YES	N/A	N/A		
5592	2	20	1-EP-CB-13R1	EP/HEAT TRACE CONTROL CABINET	11715-FE-63 SERIES	AUX	274'	8.7/H	S R	30	ON	ON	YES	N/A	N/A		
5569	1	20	1-EP-CB-14AN	EP/HEAT TRACE DISTRIBUTION CABINET	11715-FE-1Q/27	AUX	259'	9.5/L	S R	--	ON	ON	YES	N/A	N/A		
5581	2	20	1-EP-CB-14AR	EP/HEAT TRACE DISTRIBUTION CABINET	11715-FE-63 SERIES	AUX	259'	8/L	S R	30	ON	ON	YES	N/A	N/A		
5570	1	20	1-EP-CB-14BN	EP/HEAT TRACE DISTRIBUTION CABINET	11715-FE-1Q/27	AUX	259'	9.5/L	S R	--	ON	ON	YES	N/A	N/A		
5582	2	20	1-EP-CB-14BR	EP/HEAT TRACE DISTRIBUTION CABINET	11715-FE-63 SERIES	AUX	259'	8/L	S R	30	ON	ON	YES	N/A	N/A		
5593	1	20	1-EP-CB-14N1	EP/HEAT TRACE CONTROL CABINET	11715-FE-63 SERIES	AUX	259'	9.5/L	S R	30	ON	ON	YES	N/A	N/A		
5594	2	20	1-EP-CB-14R1	EP/HEAT TRACE CONTROL CABINET	11715-FE-63 SERIES	AUX	259'	8/L	S R	30	ON	ON	YES	N/A	N/A		
5599	1, 2	20	1-EP-CB-15A	/ANNUNCIATOR CABINET - 15	DWG NOT AVAILABLE	AUX	259'		S R	--	ON	ON	YES	N/A	N/A		
5600	1, 2	20	1-EP-CB-16A1	/ANNUNCIATOR CABINET - 16	DWG NOT AVAILABLE	AUX	259'		S R	--	ON	ON	YES	N/A	N/A		
5601	1, 2	20	1-EP-CB-17A	/ANNUNCIATOR CABINET - 17	DWG NOT AVAILABLE	AUX	274'		S R	--	ON	ON	YES	N/A	N/A		
5421	1	20	1-EP-CB-204	EP/APPENDIX R ISOL PANEL	11715-FE-027A/22/A2	SB	254'	8/C	S R	--	N/A	N/A	YES	N/A	N/A		
5422	1	20	1-EP-CB-28A	EP/AUXILIARY RELAY RACK A	11715-FE-3DC/29	SB	252'	IRR #1	S R	41	N/A	N/A	YES	N/A	N/A		
5423	1	20	1-EP-CB-28B	EP/AUXILIARY RELAY RACK B	11715-FE-3DD/28	SB	252'	IRR #1	S R	41	N/A	N/A	YES	N/A	N/A		

NORTH ANNA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
COMPOSITE SSEL  
(Sorted by Equipment Class and Mark Number)

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Sort Criteria: Class, ID Number  
Filter Criteria: <none>  
Program File Name & Version: SSEL 2.2

LINE NO.	TRAIN CLASS	EQUIP MARK NO	SYSTEM/EQUIPMENT DESCRIPTION	Dwg No./Rev./Zone	Building	Equipment Fr Elev	LOCATION Rm. or Row/Col.	Sort Notes	OP. ST. Normva	Desired REQ'D	DWG. NO./REV.	SUPPORTING COMPONENTS	REG. ISSUE			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
5424	1	20	1-EP-CB-28C	EP/AUXILIARY RELAY RACK C	11715-FE-30E/26	SB	252'	IRR #1	S R	N/A	N/A	YES	N/A	N/A	N/A	
5424A	1	20	1-EP-CB-28E	EP/AUXILIARY RELAY RACK E	11715-FE-30G/8	SB	252'	IRR #1	S R	6,41	N/A	YES	N/A	N/A	N/A	
5424B	1	20	1-EP-CB-28F	EP/AUXILIARY RELAY RACK F	11715-FE-30H/9	SB	252'	IRR #1	S R	6,41	N/A	YES	N/A	N/A	N/A	
5424C	1	20	1-EP-CB-28G	EP/AUXILIARY RELAY RACK G	11715-FE-30J/15	SB	252'	IRR #1	S R	6,41	N/A	YES	N/A	N/A	N/A	
5425	1	20	1-EP-CB-28H	EP/SW LOGIC CABINET 1A	11715-FE-30K/22	SB	252'	IRR #1	S R	41	N/A	YES	N/A	N/A	N/A	
5425A	1	20	1-EP-CB-28HX	EP/SW LOGIC CABINET 1AX	11715-FE-31A/11	SB	252'	IRR #1	S R	6,41	N/A	YES	N/A	N/A	N/A	
5425B	1	20	1-EP-CB-28J	EP/SW LOGIC CABINET 1B	11715-FE-30L/26	SB	252'	IRR #1	S R	6,41	N/A	YES	N/A	N/A	N/A	
5425C	1	20	1-EP-CB-28JX	EP/SW LOGIC CABINET 1BX	11715-FE-31B/11	SB	252'	IRR #1	S R	6,41	N/A	YES	N/A	N/A	N/A	
5595	1	20	1-EP-CB-41NI	EP/HEAT TRACE CONTROL CABINET	11715-FE-63 SERIES	AFPH	271'	1.1/LA	S R	30	ON	ON	YES	N/A	N/A	
5596	2	20	1-EP-CB-41R1	EP/HEAT TRACE CONTROL CABINET	11715-FE-63 SERIES	AFPH	271'	1.1/LA	S R	30	ON	ON	YES	N/A	N/A	
5602	1, 2	20	1-EP-CB-45A	/ANNUNCIATOR CABINET - 45	DWG NOT AVAILABLE	AFPH	271'	--	S R	--	ON	ON	YES	N/A	N/A	
5425D	1	20	1-EP-CB-63A	EP/LOOP STOP VALVE LOGIC CABINET RACK A	11715-1.32 SERIES	SB	252'	IRR #1	S R	6	N/A	N/A	YES	N/A	N/A	
5425E	1	20	1-EP-CB-63B	EP/LOOP STOP VALVE LOGIC CABINET RACK B	11715-1.32 SERIES	SB	252'	IRR #1	S R	6	N/A	N/A	YES	N/A	N/A	
6036	1	20	1-EP-DB-16A	EP/120V SEMI-VITAL AC BUS DISTRIBUTION PANEL	11715-FE-001AJ/00/F5	SB	252'	EMER SWGR 5/D	S R	--	N/A	N/A	YES	N/A	TRANS-118	
6038	2	20	1-EP-DB-16B	EP/120V SEMI-VITAL AC BUS DISTRIBUTION PANEL	11715-FE-001AJ/00/D5	SB	252'	EMER SWGR 5/D	S R	--	N/A	N/A	YES	N/A	TRANS-119	
4175	1	20	1-FW-FI-100A	FW/AFMP TO SG A FLOW	11715-FW-074A1/32/D6	SB	277'	CR	S R	36	ON	ON	YES	11715-FW-050/6	1-EI-CB-04	
4160	2	20	1-FW-FI-100B	FW/AFMP TO SG B FLOW	11715-FW-074A1/32/E6	SB	277'	CR	S R	36	ON	ON	YES	11715-FW-051/6	1-EI-CB-04	
4164	2	20	1-FW-FI-100C	FW/AFMP TO SG C FLOW	11715-FW-074A1/32/R7	SB	277'	CR	S R	36	ON	ON	YES	11715-FW-052/7	1-EI-CB-04	
4183	1	20	1-FW-LI-147A	FW/SG A LEVEL	11715-FW-074A1/32/E7	SB	277'	CR	S R	36	ON	ON	YES	11715-FW-094/9	1-EI-CB-04	
4185	1	20	1-FW-LI-147B	FW/SG A LEVEL	11715-FW-074A1/32/E6	SB	277'	CR	S R	36	ON	ON	YES	11715-FW-100/9	1-EI-CB-04	
4187	1	20	1-FW-LI-147C	FW/SG A LEVEL	11715-FW-074A1/32/E6	SB	277'	CR	S R	36	ON	ON	YES	11715-FW-106/8	1-EI-CB-04	
4195	2	20	1-FW-LI-148A	FW/SG B LEVEL	11715-FW-074A1/32/D7	SB	277'	CR	S R	36	ON	ON	YES	11715-FW-096/9	1-EI-CB-04	
4197	2	20	1-FW-LI-148B	FW/SG B LEVEL	11715-FW-074A1/32/D6	SB	277'	CR	S R	36	ON	ON	YES	11715-FW-102/9	1-EI-CB-04	
4199	2	20	1-FW-LI-148C	FW/SG B LEVEL	11715-FW-074A1/32/D6	SB	277'	CR	S R	36	ON	ON	YES	11715-FW-108/9	1-EI-CB-04	
4205	3	20	1-FW-LI-149A	FW/SG C LEVEL	11715-FW-074A1/32/E7	SB	277'	CR	S R	36	ON	ON	YES	11715-FW-098/9	1-EI-CB-04	

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA1 SSEL.DBF / 05/20/97 / 11:43:22  
 Sort Criteria: Class, ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg No./Rev./Zone	Building	EQUIPMENT Flr. Elv.	LOCATION Rm. or Row/Col.	SORT NOTES	OP Normal	ST. Desired	POWER REQ'D?	SUPPORTING DWG. NO./REV.	SYS. & SUPPORTING	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10) (11)	(12)	(13)	(14)	(15)	(16)	(17)	
4207	3	20	1-FW-LI-1495	FW/SG C LEVEL	11715-FM-074A1/32/C7	SB	277'	CR	S R 36	ON	ON	YES	11715-FW-104/9	1-EI-CB-04	
4209	3	20	1-FW-LI-1496	FW/SG C LEVEL	11715-FM-074A1/32/C6	SB	277'	CR	S R 36	ON	ON	YES	11715-FW-110/8	1-EI-CB-04	
4176	1, 2	20	1-FW-LR-1477	FW/SG 1A, B, C WIDE RANGE LVL	11715-FM-074A1/32/E8	SB	277'	CR	S R --	ON	ON	YES	N/A	1-EI-CB-04	
4146	2	20	1-FW-PI-101A-1	FW/AFWP TO SG B PRESSURE	11715-FM-074A3/29/F8	SB	277'	CR	S R 36	ON	ON	YES	11715-FW-010/5	1-EI-CB-04	
4147	2	20	1-FW-PI-101A-2	FW/AFWP TO SG B PRESSURE	11715-FM-074A3/29/F8	SB	254'	SWGR RM	S R --	ON	ON	YES	N/A	N/A	
4151	2	20	1-FW-PI-101B-1	FW/AFWP TO SG C PRESSURE	11715-FM-074A3/29/E8	SB	277'	CR	S R 36	ON	ON	YES	11715-FW-017/5	1-EI-CB-04	
4152	2	20	1-FW-PI-101B-2	FW/AFWP TO SG C PRESSURE	11715-FM-074A3/29/E8	SB	254'	SWGR RM	S R --	ON	ON	YES	N/A	N/A	
4154	1	20	1-FW-PI-101C-1	FW/AFWP TO SG A PRESSURE	11715-FM-074A3/29/E8	SB	277'	CR	S R --	ON	ON	YES	N/A	N/A	
4155	1	20	1-FW-PI-101C-2	FW/AFWP TO SG A PRESSURE	11715-FM-074A3/29/E8	SB	254'	SWGR RM	S R --	ON	ON	YES	N/A	N/A	
4136	1	20	1-FW-PI-103A	FW/TDAFWP SUCTION PRESSURE	11715-FM-074A3/29/C7	SB	277'	CR	S R 36	ON	ON	YES	11715-FW-003/3	1-EI-CB-04	
4130	2	20	1-FW-PI-103B	FW/MDAFWP SUCTION PRESSURE	11715-FM-074A3/29/C6	SB	277'	CR	S R 36	ON	ON	YES	N/A	1-EI-CB-04	
4124	2	20	1-FW-PI-103C	FW/MDAFWP SUCTION PRESSURE	11715-FM-074A3/29/C5	SB	277'	CR	S R 36	ON	ON	YES	11715-FW-002/5	1-EI-CB-04	
2041	1	20	1-GN-PI-134A	GN/N2 RESERVE PRESSURE	11715-GN-007/3	SB	277'	CR	S R --	ON	ON	YES	N/A	N/A	
2043	2	20	1-GN-PI-134B	GN/N2 RESERVE PRESSURE	11715-GN-008/3	SB	277'	CR	S R --	ON	ON	YES	N/A	N/A	
4004	1	20	1-MS-PI-1474	MS/SG A STEAM PRESSURE	11715-FM-070B1/19/E7	SB	277'	CR	S R 9, 36	ON	ON	YES	11715-MS-144/6	1-EI-CB-04	
4006	2	20	1-MS-PI-1476	MS/SG A STEAM PRESSURE	11715-FM-070B1/19/C6	SB	277'	CR	S R 9, 36	ON	ON	YES	11715-MS-156/5	1-EI-CB-04	
4030	1	20	1-MS-PI-1485	MS/SG B STEAM PRESSURE	11715-FM-070B2/19/B7	SB	277'	CR	S R 9, 36	ON	ON	YES	11715-MS-146/5	1-EI-CB-04	
4032	2	20	1-MS-PI-1486	MS/SG B STEAM PRESSURE	11715-FM-070B2/19/B6	SB	277'	CR	S R 9, 36	ON	ON	YES	11715-MS-158/4	1-EI-CB-04	
4056	2	20	1-MS-PI-1494	MS/SG C STEAM PRESSURE	11715-FM-070B3/23/B7	SB	277'	CR	S R 9, 36	ON	ON	YES	11715-MS-140/6	1-EI-CB-04	
4058	1	20	1-MS-PI-1496	MS/SG C STEAM PRESSURE	11715-FM-070B3/23/B6	SB	277'	CR	S R 9, 36	ON	ON	YES	11715-MS-160/5	1-EI-CB-04	
4008	1	20	1-MS-PIC-101A	MS/SG A STEAM PRESSURE	11715-FM-070B1/19/C6	SB	277'	CR	S R --	ON	ON	YES	N/A	N/A	
4034	2	20	1-MS-PIC-101B	MS/SG B STEAM PRESSURE	11715-FM-070B2/19/C5	SB	277'	CR	S R --	ON	ON	YES	N/A	N/A	
4060	3	20	1-MS-PIC-101C	MS/SG C STEAM PRESSURE	11715-FM-070B3/23/B6	SB	277'	CR	S R --	ON	ON	YES	11715-MS-014/8	N/A	
3051	1, 2	20	1-QS-LI-100A	QS/RWST LEVEL	11715-FM-091A1/20/D8	SB	277'	CR	S R 36	ON	ON	YES	11715-QS-003/9	1-EI-CB-05	
3052	1, 2	20	1-QS-LI-100B	QS/RWST LEVEL	11715-FM-091A1/20/D6	SB	277'	CR	S R 36	ON	ON	YES	11715-QS-004/10	1-EI-CB-05	
3053	1, 2	20	1-QS-LI-100C	QS/RWST LEVEL	11715-FM-091A1/20/D8	SB	277'	CR	S R 36	ON	ON	YES	11715-QS-016/8	1-EI-CB-05	
3054	1, 2	20	1-QS-LI-100D	QS/RWST LEVEL	11715-FM-091A1/20/D6	SB	277'	CR	S R 36	ON	ON	YES	11715-QS-017/9	1-EI-CB-05	

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 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
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LINE NO.	TRAIN	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT NOTES		OP. Normal	ST. Desired	POWER REQD?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
2008	2	20	1-RC-HC1*	RC/PZR HEATER CONTROL #1	11715-FM-09381/22/B4	SB	274'	CRD RM #1	S	R --	ON	ON	YES	N/A	N/A	
2009	2	20	1-RC-HC2*	RC/PZR HEATER CONTROL #2	11715-FM-09381/22/B4	SB	274'	CRD RM #1	S	R --	ON	ON	YES	N/A	N/A	
3005A	1, 2	20	1-RC-LI-1459A	RC/PZR LEVEL IND CH I	11715-RC-061/13	SB	277'	CR	S	R --	ON	ON	YES	11715-FE-11A	1-EI-CB-03	
3005B	1, 2	20	1-RC-LI-1459B	RC/PZR LEVEL IND CH I	11715-RC-061/13	SB	254'	EM SWGR #1	S	R --	ON	ON	YES	11715-FE-11A	1-EI-CB-06A	
3006A	1, 2	20	1-RC-LI-1460	RC/PZR LEVEL IND CH II	11715-RC-062/9	SB	277'	CR	S	R --	ON	ON	YES	11715-FE-11A	1-EI-CB-03	
3007A	1, 2	20	1-RC-LI-1461	RC/PZR LEVEL IND CH III	11715-RC-063/10	SB	277'	CR	S	R --	ON	ON	YES	11715-FE-11B	1-EI-CB-03	
3008A	2	20	1-RC-LI-1462	RC/PZR LEVEL - COLD CAL (STUP)	11715-RC-064/4	SB	277'	CR	S	R --	ON	ON	YES	11715-RC-064	1-EI-CB-03	
2033	1, 2	20	1-RC-LI-1470	RC/PRT LEVEL	11715-RC-035/5	SB	277'	CR	S	R 36	ON	ON	YES	N/A	1-EI-CB-03	
2003	1	20	1-RC-PI-1402A	RC/REACTOR COOLANT WR PRESSURE	11715-RC-131/6	SB	277'	CR	S	R 36	ON	ON	YES	N/A	1-EI-CB-03	
2004	1	20	1-RC-PI-1402B	RC/REACTOR COOLANT WR PRESSURE	11715-RC-131/6	SB	277'	CR	S	R 36	ON	ON	YES	N/A	1-EI-CB-03	
2019	2	20	1-RC-PI-1445	RC/PZR PRESSURE	11715-RC-108/5	SB	277'	CR	S	R --	ON	ON	YES	N/A	N/A	
2011	2	20	1-RC-PI-1455	RC/PZR PRESSURE	11715-RC-069/10	SB	277'	CR	S	R 36	ON	ON	YES	N/A	1-EI-CB-03	
2013	2	20	1-RC-PI-1456	RC/PZR PRESSURE	11715-RC-071/9	SB	277'	CR	S	R 36	ON	ON	YES	N/A	1-EI-CB-03	
2015	2	20	1-RC-PI-1457	RC/PZR PRESSURE	11715-RC-073/9	SB	277'	CR	S	R 36	ON	ON	YES	N/A	1-EI-CB-03	
2031	1, 2	20	1-RC-PI-1472	RC/PRT PRESSURE	11715-RC-041/3	SB	277'	CR	S	R 36	ON	ON	YES	N/A	1-EI-CB-03	
3020	1, 2	20	1-RC-TI-1463	RC/PZR PORV OUTLET TEMP	11715-RC-056/4	SB	277'	CR	S	R 36	ON	ON	YES	N/A	1-EI-CB-03	
4260A	1, 2	20	1-RH-FI-1605	RH/RHR HX OUTLET FLOW	11715-RH-004/6	SB	277'	CR	S	R --	ON	ON	YES	N/A	N/A	
4254A	1, 2	20	1-RH-TR-1604	RH/RHR HX INLET TEMPERATURE	11715-RH-002/4	SB	277'	CR	S	R --	ON	ON	YES	N/A	N/A	
5340A	1	20	1-SW-FI-103A	SW/SW RETURN HEADER FLOW	11715-FM-078H/04/D6	SB	277'	CR	S	R --	ON	ON	YES	N/A	N/A	
5340B	1	20	1-SW-FI-103B	SW/SW RETURN HEADER FLOW	11715-FM-078H/04/D6	SB	277'	CR	S	R --	ON	ON	YES	N/A	N/A	
5346A	1	20	1-SW-FI-104A	SW/SW RETURN HEADER FLOW	11715-FM-078H/04/D7	SB	277'	CR	S	R --	ON	ON	YES	N/A	N/A	
5346B	1	20	1-SW-FI-104B	SW/SW RETURN HEADER FLOW	11715-FM-078H/04/D7	SB	277'	CR	S	R --	ON	ON	YES	N/A	N/A	
5338	1	20	1-SW-FI-110A	SW/SW HEADER TO VALVE HOUSE FLOW	11715-FM-078H/04/D5	SB	277'	CR	S	R 36	ON	ON	YES	11715-SW-096/1	1-EI-CB-05	
5339	1	20	1-SW-FI-110B	SW/SW HEADER TO VALVE HOUSE FLOW	11715-FM-078H/04/D5	SB	277'	CR	S	R 36	ON	ON	YES	11715-SW-096/1	2-EI-CB-05	
5344	1	20	1-SW-FI-111A	SW/SW HEADER TO VALVE HOUSE FLOW	11715-FM-078H/04/E8	SB	277'	CR	S	R 36	ON	ON	YES	11715-SW-097/1	1-EI-CB-05	
5345	1	20	1-SW-FI-111B	SW/SW HEADER TO VALVE HOUSE FLOW	11715-FM-078H/04/E8	SB	277'	CR	S	R 36	ON	ON	YES	11715-SW-097/1	2-EI-CB-05	
5164	1	20	1-SW-FI-101A	SW/SW PUMP DISCHARGE PRESSURE	11715-FM-078A3/28/D6	SB	277'	CR	S	R 36	ON	ON	YES	11715-SW-027/6	1-EI-CB-05	

NORTH ANNA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
COMPOSITE SSEL  
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LINE NO.	TRAIN	EQUIP CLASS	MARK NO	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQD?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
5166	2	20	1-SW-P1-101B	SW/SW PUMP DISCHARGE PRESSURE	11715-FM-078A3/28/D5	SB	277'	CR	S R	36	OFF	ON	YES	11715-SW-028/6	1-EI-CB-05	
5303	1	20	1-SW-T1-103A	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G1/12/D4	SB	277'	CR	S R	36	ON	ON	YES	11715-SW-007/6	1-EI-CB-05	
5304	1	20	1-SW-T1-103B	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G1/12/D6	SB	277'	CR	S R	36	ON	ON	YES	11715-SW-008/6	1-EI-CB-05	
5305	1	20	1-SW-T1-103C	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G1/12/D8	SB	277'	CR	S R	36	ON	ON	YES	11715-SW-009/6	1-EI-CB-05	
5370	1	20	1-SW-T1-105A	SW/CC HX INLET TEMP	11715-FM-078C1/32/E5	AUX	244'	9.7/G	S R	--	ON	ON	YES	N/A	N/A	
5369	1	20	1-SW-T1-105B	SW/CC HX INLET TEMP	11715-FM-078C1/32/E6	AUX	244'	9.7/G	S R	--	ON	ON	YES	N/A	JB-5102; JB-5134	
5331	1	20	1-SW-T1-106A	SW/SW HEADER TO VALVE HOUSE TEMP	11715-FM-078H/04/E6	SB	277'	CR	S R	36	ON	ON	YES	11715-SW-048/5	1-EI-CB-05	
5332	1	20	1-SW-T1-106B	SW/SW HEADER TO VALVE HOUSE TEMP	11715-FM-078H/04/E6	SB	277'	CR	S R	36	ON	ON	YES	11715-SW-048/5	2-EI-CB-05	
5334	1	20	1-SW-T1-107A	SW/SW HEADER TO VALVE HOUSE TEMP	11715-FM-078H/04/E7	SB	277'	CR	S R	36	ON	ON	YES	11715-SW-047/5	1-EI-CB-05	
5335	1	20	1-SW-T1-107B	SW/SW HEADER TO VALVE HOUSE TEMP	11715-FM-078H/04/E7	SB	277'	CR	S R	36	ON	ON	YES	11715-SW-047/5	2-EI-CB-05	
5374	1	20	1-SW-T1-111A	SW/CC HX OUTLET TEMP	11715-FM-078C1/32/E5	AUX	244'	9.7/G	S R	--	ON	ON	YES	N/A	N/A	
5373	1	20	1-SW-T1-114B	SW/CC HX OUTLET TEMP	11715-FM-078C1/32/E6	AUX	244'	9.7/G	S R	--	ON	ON	YES	N/A	N/A	
6102		20	2-EG-P-2H	EDG CONTROL PANEL		SB	270'	EDG	S	--						
6103		20	2-EG-P-2J	EDG CONTROL PANEL		SB	270'	EDG	S	--						
5539	1	20	2-EG-PS-702HA	EG/AIR COMPRESSOR AIR RECEIVER PRESSURE	DWG NOT AVAILABLE	SB	270'	EDG	S R	36	ON	ON	YES	N/A	2-EG-P-2H	
5540	2	20	2-EG-PS-702HB	EG/AIR COMPRESSOR AIR RECEIVER PRESSURE	DWG NOT AVAILABLE	SB	270'	EDG	S R	36	ON	ON	YES	N/A	2-EG-P-2H	
5541	1	20	2-EG-PS-702JA	EG/AIR COMPRESSOR AIR RECEIVER PRESSURE	DWG NOT AVAILABLE	SB	270'	EDG	S R	36	ON	ON	YES	N/A	2-EG-P-2J	
5542	2	20	2-EG-PS-702JB	EG/AIR COMPRESSOR AIR RECEIVER PRESSURE	DWG NOT AVAILABLE	SB	270'	EDG	S R	36	ON	ON	YES	N/A	2-EG-P-2J	
5521	1	20	2-EG-PS-703H	EG/FUEL OIL DIFF PRESS	11715-1.30-212C	SB	270'	EDG	S R	36,29	OFF	ON	YES	N/A	2-EG-P-2H	
5522	2	20	2-EG-PS-703J	EG/FUEL OIL DIFF PRESS	11715-1.30-212C	SB	270'	EDG	S R	36,29	OFF	ON	YES	N/A	2-EG-P-2J	
5479C	1	20	2-EI-CB-08A	EG/EMERG DG CONTROL PANEL (H-TRAIN)	11715-FE-027B/33/H2	SB	277'	CR	S R	6	N/A	N/A	YES	N/A	N/A	
5479D	1	20	2-EI-CB-08B	EG/EMERG DG CONTROL PANEL (H-TRAIN)	11715-FE-027B/33/H2	SB	277'	CR	S R	6,41	N/A	N/A	YES	N/A	N/A	
5418C	1	20	2-EI-CB-201	EI/DIESEL ISOL PANEL (H-TRAIN)	12050-FE-055F/17	SB	272'	EDG	S R	6,41	N/A	N/A	YES	N/A	N/A	
5168	1	20	2-SW-P1-201A	SW/SW PUMP DISCHARGE PRESSURE	11715-FM-078A3/28/D4	SB	277'	CR	S R	36	ON	ON	YES	12050-SW-012/3	1-EI-CB-05	



NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
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 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	TRAIN	EQUIP CLASS	MARK NO	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr.Elv.	LOCATION Rm. or Row/Col.	SORT NOTES	OP. Normal	ST. Desired	POWER REQD?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10) (11)	(12)	(13)	(14)	(15)	(16)	(17)
5170	2	20	2-SW-P1-201F	SW/SW PUMP DISCHARGE PRESSURE	11715-FM-078A3/28/D3	SB	277'	CR	S R 36	OFF	ON	YES	12050-SW-013/3	1-E1-CB-05	
5327	1	20	2-SW-T1-203A	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G2/10/D4	SB	277'	CR	S R --	ON	ON	YES	12050-SW-022/5	N/A	
5328	1	20	2-SW-T1-203B	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G2/10/D6	SB	277'	CR	S R --	ON	ON	YES	12050-SW-023/5	N/A	
5329	1	20	2-SW-T1-203C	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G2/10/D8	SB	277'	CR	S R --	ON	ON	YES	12050-SW-024/5	N/A	
5368	1	20	2-SW-T1-205A	SW/CC HX INLET TEMP	11715-FM-078C1/32/E7	AUX	244'	9.7/G	S R --	ON	ON	YES	N/A	N/A	
5367	1	20	2-SW-T1-205B	SW/CC HX INLET TEMP	11715-FM-078C1/32/E8	AUX	244'	9.7/G	S R --	ON	ON	YES	N/A	N/A	
5372	1	20	2-SW-T1-207A	SW/CC HX OUTLET TEMP	11715-FM-078C1/32/E6	AUX	244'	9.7/G	S R --	ON	ON	YES	N/A	N/A	
5371	1	20	2-SW-T1-207B	SW/CC HX OUTLET TEMP	11715-FM-078C1/32/E7	AUX	244'	9.7/G	S R --	ON	ON	YES	N/A	N/A	
5002	1	21	1-CC-E-1A	CC/COMPONENT COOLING WATER HX	11715-FM-079A1/17/E5	AUX	259'	8.5/F	S --	N/A	N/A	NO	N/A	N/A	
5006	1	21	1-CC-E-1B	CC/COMPONENT COOLING WATER HX	11715-FM-079A1/17/D5	AUX	259'	8.5/F	S --	N/A	N/A	NO	N/A	N/A	
5047	1, 2	21	1-CC-TK-1	CC/CC SURGE TANK	11715-FM-079A1/17/E6	AUX	291'	9/F	S --	N/A	N/A	NO	N/A	N/A	
1073	1, 2	21	1-CH-E-1	CH/SEAL WATER HEAT EXCHANGER	11715-FM-095B1/21/B6	AUX	245'	12/H	S --	N/A	N/A	NO	11715-CH-001/7	COMPONENT COOLING WATER	
1005	1	21	1-CH-E-3	CH/REGENERATIVE HEAT EXCHANGER	11715-FM-095C1/14/E5	CONTMT	241'	11	S ---	N/A	N/A	NO	VIMS27221-27223 N/A 27227-27230 11715-FM-001C	N/A	
1199	2	21	1-CH-E-4	CH/EXCESS LETDOWN HEAT EXCHANGER	11715-FM-095C1/14/E7	CONTMT	234'	5	S 23	N/A	N/A	NO	11715-FM-10	N/A	
5282	1	21	1-CH-E-5A	CH/CCP LUBE OIL COOLER	11715-FM-078G1/12/D4	AUX	244'	8/K	S --	N/A	N/A	NO	11715-SW-070/1	OIL	
5283	1	21	1-CH-E-5B	CH/CCP LUBE OIL COOLER	11715-FM-078G1/12/D6	AUX	244'	8.5/K	S --	N/A	N/A	NO	11715-SW-071/1	OIL	
5284	1	21	1-CH-E-5C	CH/CCP LUBE OIL COOLER	11715-FM-078G1/12/D8	AUX	244'	9/K	S --	N/A	N/A	NO	11715-SW-072/1	OIL	
1140	1	21	1-CH-TK-1A	CH/BORIC ACID STORAGE TANK A (BAST)	11715-FM-095A1/22/E3	AUX	244'	8.5/G	S --	N/A	N/A	NO	N/A	1-CH-LT-1106/1161;1-CH-TIC-1107/1162	
1141	2	21	1-CH-TK-1B	CH/BORIC ACID STORAGE TANK B (BAST)	11715-FM-095A1/22/E5	AUX	274'	9/G	S --	N/A	N/A	NO	N/A	1-CH-LT-1108/1163;1-CH-TIC-1109/1164	
1048	1	21	1-CH-TK-2	CH/VOLUME CONTROL TANK (VCT)	11715-FM-095B1/21/C6	AUX	274'	9.5/J	S --	N/A	N/A	NO	N/A	1-CH-LT-1115;1-CH-LT-1112	
4118	1	21	1-CN-TK-1	CN/CONDENSATE STORAGE TANK	11715-FM-074A3/29/D3	YARD	-	NOTE 1E	S --	N/A	N/A	NO	N/A	N/A	
4100	1	21	1-CN-TK-2	CN/CONDENSATE STORAGE TANK	11715-FM-073A/31/A6	YARD	302'	--	--	N/A	N/A	NO	11715-CN-002/5	N/A	
5111	1	21	1-DG-E-1	DG/PRIMARY DRAIN TRANSFER COOLER	11715-FM-079B5/21/A6	CONTMT	226'	5	S 23	N/A	N/A	NO	11715-FM-001D	N/A	
5490	1	21	1-EG-TK-1H	EG/FUEL OIL DAY TANK	11715-FB-035A2/21/C3	SB	270'	DG	S --	N/A	N/A	NO	N/A	N/A	

NORTH ANNA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
COMPOSITE SSEL  
(Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA1\_SSEL.DBF / 05/20/97 / 11:43:22  
Sort Criteria: Class, ID Number  
Filter Criteria: none  
Program File Name & Version: SSEM 2.2

LINE NO.	TRAIN	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr./Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. & SUPPORTING COMPONENTS	ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	
5527	1	21	1-EG-TK-1HA	EG/AIR COMPRESSOR AIR RECEIVER	11715-FM-107A1/09/D3	SB	270'	DG	S	--	N/A	N/A	NO	N/A	N/A	N/A	
5528	2	21	1-EG-TK-1HB	EG/AIR COMPRESSOR AIR RECEIVER	11715-FM-107A2/09/D3	SB	270'	DG	S	--	N/A	N/A	NO	N/A	N/A	N/A	
5491	2	21	1-EG-TK-1J	EG/FUEL OIL DAY TANK	11715-FB-035A1/21/B5	SB	270'	DG	S	--	N/A	N/A	NO	N/A	N/A	N/A	
5529	1	21	1-EG-TK-1JA	EG/AIR COMPRESSOR AIR RECEIVER	11715-FM-107A3/10/D3	SB	270'	DG	S	--	N/A	N/A	NO	N/A	N/A	N/A	
5530	2	21	1-EG-TK-1JB	EG/AIR COMPRESSOR AIR RECEIVER	11715-FM-107A4/10/D3	SB	270'	DG	S	--	N/A	N/A	NO	N/A	N/A	N/A	
5480	1, 2	21	1-EG-TK-2A	EG/UNDERGROUND FO STORAGE TANK	11715-FB-035A1/19/C7	YARD	--	--	S	--	N/A	N/A	NO	N/A	N/A	N/A	
5481	1, 2	21	1-EG-TK-2B	EG/UNDERGROUND FO STORAGE TANK	11715-FB-035A1/19/B7	YARD	--	--	S	--	N/A	N/A	NO	N/A	N/A	N/A	
4143	1	21	1-FW-E-10	FW/TDAFWP OIL COOLER	11715-FM-074A3/29/D7	AFPH	--	--	S	36	N/A	N/A	NO	N/A	1-FW-P-2		
4142	2	21	1-FW-E-9A	FW/MDAFWP OIL COOLER	11715-FM-074A3/29/D6	AFPH	--	--	S	36	N/A	N/A	NO	N/A	1-FW-P-3A		
4141	2	21	1-FW-E-9B	FW/MDAFWP OIL COOLER	11715-FM-074A3/29/D4	AFPH	--	--	S	36	N/A	N/A	NO	N/A	1-FW-P-3B		
2045	2	21	1-GN-TK-1A	GN/N2 RESERVE TANK	11715-FM-105A1/20/D3	CONTMT	292'	9.5	S	--	N/A	N/A	NO	N/A	N/A		
2044	1	21	1-GN-TK-1B	GN/N2 RESERVE TANK	11715-FM-105A1/20/D7	CONTMT	292'	9.5	S	--	N/A	N/A	NO	N/A	N/A		
5053	3	21	1-HV-E-6A	HV/SHROUD COOLING COILS	11715-FM-079B2/21/F5	CONTMT	276'	1	S	23	N/A	N/A	NO	11715-HV-272/2 VIMS 24648 11715-FM-1B	N/A		
5065	3	21	1-HV-E-6B	HV/SHROUD COOLING COILS	11715-FM-079B3/20/F5	CONTMT	275'	13	S	23	N/A	N/A	NO	VIMS 25135 11715-FM-1B	N/A		
5077	3	21	1-HV-E-6C	HV/SHROUD COOLING COILS	11715-FM-079B4/21/F5	CONTMT	277'	8	S	23	N/A	N/A	NO	VIMS 25688-25690 11715-FM-1B	N/A		
5449A	1	21	1-HV-TK-6A	HV/CHILLED WATER EXPANSION TANK	11715-FB-040A1/13	SB	252'	CHILLER RM	S	--	N/A	N/A	NO	N/A	N/A		
5449B	2	21	1-HV-TK-6B	HV/CHILLED WATER EXPANSION TANK	11715-FB-040A1/13	SB	252'	CHILLER RM	S	--	N/A	N/A	NO	N/A	N/A		
5116	1	21	1-NS-E-1A	NS/NEUTRON SHIELD TANK COOLER	11715-FM-079B5/21/A7	CONTMT	262'	15	S	23	N/A	N/A	NO	N/A	N/A		
5117	1	21	1-NS-E-1B	NS/NEUTRON SHIELD TANK COOLER	11715-FM-079B5/21/E5	CONTMT	262'	15	S	23	N/A	N/A	NO	N/A	N/A		
3046	1, 2	21	1-QS-TK-1	QS/REFUELING WATER STORAGE TANK (RWST)	11715-FM-091A1/20/D7	YARD	272'	--	S	--	N/A	N/A	NO	N/A	1-QS-L-100A/B/C/D		
7001	1, 2	21	1-QS-TK-2	QS/REFUELING WATER CHEM ADD TANK	11715-FM-091A1/20/D6	YARD/TUNEL	272'	1.5/L	S	1	N/A	N/A	NO	N/A	N/A		
2029	1, 2	21	1-RC-TK-2	RC/PRESSURE RELIEF TANK (PRT)	11715-FM-093B2/23/C5	CONTMT	241'	7	S	16	N/A	N/A	NO	11715-FK-01A/14 11715-FK-001D	N/A		
4253	1	21	1-RH-E-1A	RH/RHR HX A	11715-FM-094A2/15/E8	CONTMT	272'	4.5	S	--	N/A	N/A	NO	11715-FK-001E	N/A		
4255	2	21	1-RH-E-1B	RH/RHR HX B	11715-FM-094A2/15/E6	CONTMT	236'	3.5	S	--	N/A	N/A	NO	11715-FK-001E	N/A		

NORTH ANNA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
COMPOSITE SSEL  
(Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA1 SSEL.DBF / 05/20/97 / 11:43:22  
Sort Criteria: Class, ID Number  
Filter Criteria: <none>  
Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col	SORT NOTES	OP. ST. Normal	OP. ST. Desired	POWER REQ'D	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
4247	1	21	1-RH-E-2A	RH/RHR PUMP A SEAL COOLER	11715-FM-094A1/14/D7	CONTMT	233'	5	S	--	N/A	N/A	NO	N/A	1-RH-P-1A	
4250	2	21	1-RH-E-2B	RH/RHR PUMP B SEAL COOLER	11715-FM-094A1/14/D4	CONTMT	233'	5	S	--	N/A	N/A	NO	N/A	1-RH-P-1B	
5604	1	21	1-RS-E-1A	RS/INSIDE RECIRC SPRAY COOLER A	11715-FM-091A3/20/C7	CONTMT	216'	9	S	26	N/A	N/A	NO	11715-FM-078B2	SERVICE WATER	
5604	1	21	1-RS-E-1B	RS/INSIDE RECIRC SPRAY COOLER B	11715-FM-091A3/20/C5	CONTMT	216'	10	S	26	N/A	N/A	NO	11715-FM-078B2	SERVICE WATER	
5606	2	21	1-RS-E-1C	RS/INSIDE RECIRC SPRAY COOLER C	11715-FM-091A4/24/D8	CONTMT	216'	9	S	26	N/A	N/A	NO	11715-FM-078B2	SERVICE WATER	
5607	2	21	1-RS-E-1D	RS/INSIDE RECIRC SPRAY COOLER D	11715-FM-091A4/24/D7	CONTMT	216'	9	S	26	N/A	N/A	NO	11715-FM-078B2	SERVICE WATER	
7034	2	21	1-RS-E-2A*	RS/OUTSIDE RECIRC SPRAY PUMP A SEAL HX	11715-FM-091A4/24/C4	SFGD	267'	3.2/LM	S	1	N/A	N/A	NO	N/A	N/A	
7035	2	21	1-RS-E-2B*	RS/OUTSIDE RECIRC SPRAY PUMP B SEAL HX	11715-FM-091A4/24/C3	SFGD	267'	3.5/JK	S	1	N/A	N/A	NO	N/A	N/A	
7036	2	21	1-RS-TK-1	RS/CASING COOLING TANK	11715-FM-091B1/05/C4	YARD/TUNL	270'	2.5/R	S	1	N/A	N/A	NO	N/A	N/A	
7032	2	21	1-RS-TK-1A*	RS/OUTSIDE RECIRC SPRAY PUMP A SEAL TANK	11715-FM-091A4/24/C4	SFGD	267'	3.2/LM	S	1	N/A	N/A	NO	N/A	N/A	
7033	2	21	1-RS-TK-1B*	RS/OUTSIDE RECIRC SPRAY PUMP B SEAL TANK	11715-FM-091A4/24/C3	SFGD	267'	3.5/JK	S	1	N/A	N/A	NO	N/A	N/A	
1087A	1	21	1-SI-TK-2	SI/BORON INJECTION TANK (BIT)	11715-FM-096A3/22/D5	AUX	244'	NOTE 1Q	S	23	N/A	N/A	NO	N/A	N/A	
1212	1, 2	21	1-SS-E-10	SS/PZR LIQUID SPACE SAMPLE COOLER	11715-FM-089D1/16/E4	AUX	274'	8/B	S	23	N/A	N/A	NO	N/A	COMPONENT COOLING WATER	
1242	1, 2	21	1-SS-E-12	SS/RC COLD LEG SAMPLE COOLER	11715-FM-089D1/16/E4	AUX	274'	9/K	S	--	N/A	N/A	NO	N/A	COMPONENT COOLING WATER	
5029	1, 2	21	1-SS-E-14	SS/SG SURFACE HX	11715-FM-079C2/13/C4	AUX	274'	9/K	S	23	N/A	N/A	NO	N/A	N/A	
5104	1	21	1-SS-E-34	SS/SAMPLE COOLER	11715-FM-079B1/21/E8	AUX	244'	9/K	S	23	N/A	N/A	NO	N/A	N/A	
5105	1	21	1-SS-E-35	SS/SAMPLE COOLER	11715-FM-079B1/21/E8	AUX	244'	9/K	S	23	N/A	N/A	NO	N/A	N/A	
5106	1	21	1-SS-E-36	SS/SAMPLE COOLER	11715-FM-079B1/21/E8	AUX	244'	9/K	S	23	N/A	N/A	NO	N/A	N/A	
5028	1, 2	21	1-SS-E-3A	SS/LOOP 1 SGBD HX	11715-FM-079C2/13/C4	AUX	274'	9/K	S	23	N/A	N/A	NO	N/A	N/A	
5026	1, 2	21	1-SS-E-3B	SS/LOOP 2 SGBD HX	11715-FM-079C2/13/D4	AUX	274'	9/K	S	23	N/A	N/A	NO	N/A	N/A	
5024	1, 2	21	1-SS-E-3C	SS/LOOP 3 SGBD HX	11715-FM-079C2/13/E4	AUX	274'	9/K	S	23	N/A	N/A	NO	N/A	N/A	
123G	1, 2	21	1-SS-E-4	HRS/HOT LEG SAMPLE COOLER	11715-FM-089D1/16/D5	AUX	274'	9/K	S	--	N/A	N/A	NO	N/A	COMPONENT COOLING WATER	
5019	1, 2	21	1-SS-E-5A	SS/GAS STRIPPER LIQUID EFFLUENT HX	11715-FM-079C2/13/E7	AUX	274'	9/K	S	23	N/A	N/A	NO	N/A	N/A	
5020	1, 2	21	1-SS-E-5B	SS/GAS STRIPPER LIQUID EFFLUENT HX	11715-FM-079C2/13/D7	AUX	274'	9/K	S	23	N/A	N/A	NO	N/A	N/A	
4270	1, 2	21	1-SS-E-9	SS/RHR SAMPLE COOLER	11715-FM-089D1/16/E3	AUX	274'	9/K	S	--	N/A	N/A	NO	N/A	COMPONENT COOLING WATER	

NORTH ANNA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
COMPOSITE SSEL  
(Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA1\_SSEL.DBF / 05/20/97 / 11:43:22  
Sort Criteria: Class, ID Number  
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Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Fir. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D & SUPPORTING COMPONENTS	INTERCONNECTIONS	ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10) (11)	(12)	(13)	(14)	(15)	(16)	(17)	
5306	1	21	2-CH-E-5A	CH/CCP LUBE OIL COOLER	11715-FM-078G2/10/D4	AUX	244'	9.2/K	S --	N/A	N/A	NO	12050-SW-034/2	OIL		
5307	1	21	2-CH-E-5B	CH/CCP LUBE OIL COOLER	11715-FM-078G2/10/D6	AUX	244'	9.5/K	S --	N/A	N/A	NO	12050-SW-035/2	OIL		
5308	1	21	2-CH-E-5C	CH/CCP LUBE OIL COOLER	11715-FM-078G2/10/D8	AUX	244'	10/K	S --	N/A	N/A	NO	12050-SW-036/2	OIL		
5492	1	21	2-EG-TK-2H	EG/FUEL OIL DAY TANK	11715-FB-035A2/21/B3	SB	270'	DG	S --	N/A	N/A	NO	N/A	N/A		
5531	1	21	2-EG-TK-2HA	EG/AIR COMPRESSOR AIR RECEIVER	11715-FM-107A1/09	SB	270'	DG	S --	N/A	N/A	NO	N/A	N/A		
5532	2	21	2-EG-TK-2HB	EG/AIR COMPRESSOR AIR RECEIVER	11715-FM-107A2/09	SB	270'	DG	S --	N/A	N/A	NO	N/A	N/A		
5493	2	21	2-EG-TK-2J	EG/FUEL OIL DAY TANK	11715-FB-035A2/21/C5	SB	270'	DG	S --	N/A	N/A	NO	N/A	N/A		
5533	1	21	2-EG-TK-2JA	EG/AIR COMPRESSOR AIR RECEIVER	11715-FM-107A3/10	SB	270'	DG	S --	N/A	N/A	NO	N/A	N/A		
5534	2	21	2-EG-TK-2JB	EG/AIR COMPRESSOR AIR RECEIVER	11715-FM-107A4/10	SB	270'	DG	S --	N/A	N/A	NO	N/A	N/A		
5030	1, 2	21	2-SS-E-14	SS/SG SURFACE HX	11715-FM-079C2/13/B4	AUX	274'	9/K	S 23	N/A	N/A	NO	N/A	N/A		
5027	1, 2	21	2-SS-E-3A	SS/LOOP 1 SGBD HX	11715-FM-079C2/13/C4	AUX	274'	9/K	S 23	N/A	N/A	NO	N/A	N/A		
5025	1, 2	21	2-SS-E-3B	SS/LOOP 2 SGBD HX	11715-FM-079C2/13/E4	AUX	274'	9/K	S 23	N/A	N/A	NO	N/A	N/A		
5023	1, 2	21	2-SS-E-3C	SS/LOOP 3 SGBD HX	11715-FM-079C2/13/F4	AUX	274'	9/K	S 23	N/A	N/A	NO	N/A	N/A		
1264	1, 2	23	1-CR-CRD*	CR*/CONTROL ROD DRIVE MECHANISMS	WESTING 618J795 & 618J796	CONTMT	271'	--	S 1,14, 10	N/A	N/A	NO	N/A	N/A		
1280	1, 2	23	1-ND-11DU*	ND*/INCORE INST DRIVE UNIT	11715-1.26 SERIES	CONTMT	263'	4	S 1,14,4 44	N/A	N/A	NO	N/A	N/A		
1284	1, 2	23	1-ND-11GT*	ND*/INCORE INST GUIDE TUBES	11715-1.26 SERIES	CONTMT	217'	4	S 1,14,4 44	N/A	N/A	NO	N/A	N/A		
1283	1, 2	23	1-ND-11ST*	ND*/INCORE INST SEAL TABLE	11715-1.26 SERIES	CONTMT	263'	4	S 1,14,4 44	N/A	N/A	NO	N/A	N/A		
1281	1, 2	23	1-ND-11T05*	ND*/INCORE INST 5-PATH TRANSFER	11715-1.26 SERIES	CONTMT	263'	4	S 1,14,4 44	N/A	N/A	NO	N/A	N/A		
1282	1, 2	23	1-ND-11T10*	ND*/INCORE INST 10-PATH TRANSFER	11715-1.26 SERIES	CONTMT	263'	4	S 1,14,4 44	N/A	N/A	NO	N/A	N/A		
4002	1	23	1-RC-E-1A	MS/STEAM GENERATOR A	11715-FM-001A/16/C5	CONTMT	291'	2	S 1,14	N/A	N/A	NO	N/A	N/A		
4028	2	23	1-RC-E-1B	MS/STEAM GENERATOR B	11715-FM-001A/16/D4	CONTMT	291'	14	S 1,14	N/A	N/A	NO	N/A	N/A		
4054	3	23	1-RC-E-1C	MS/STEAM GENERATOR C	11715-FM-001A/16/D5	CONTMT	291'	8	S 1,14	N/A	N/A	NO	N/A	N/A		
2007A	1, 2	23	1-RC-E-2	RC/PRESSURIZER	11715-FM-001C/12/D5	CONTMT	283'	9.5	S 1,14	N/A	N/A	NO	N/A	N/A		
1268	1, 2	23	1-RC-ES-1	RC/NEUTRON SHIELD TANK	11715-FM-079B5/11	CONTMT	242'	--	S 1,14	N/A	N/A	NO	N/A	N/A		

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

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 Sort Criteria: Class, ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	TRAIN	EQUIP CLASS	MARK NO	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rv./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1261	1, 2	23	1-RC-FA*	RC/FUEL ASSEMBLIES	11715-5.13 SERIES	CONTMT	242'	--	S	1,14	N/A	N/A	NO	N/A	N/A	
1262	1, 2	23	1-RC-LR1*	RC/LOWER REACTOR INTERNALS	11715-5.11 SERIES	CONTMT	231'	--	S	1,14	N/A	N/A	NO	N/A	N/A	
4279	1, 2	23	1-RC-MOV-1590	RC/LOOP 1 HOT LEG ISOL	11715-FM-093A1/19/E4	CONTMT	256' C	--	--	1,37, 14	OPEN	OPEN	NO	N/A	N/A	
4282	1, 2	23	1-RC-MOV-1591	RC/LOOP 1 COLD LEG ISOL	11715-FM-093A1/19/C8	CONTMT	256' C	--	--	1,37, 14	OPEN	OPEN	NO	N/A	N/A	
4283	1, 2	23	1-RC-MOV-1592	RC/LOOP 2 HOT LEG ISOL	11715-FM-093A2/19/E4	CONTMT	256' C	--	--	1,37, 14	OPEN	OPEN	NO	N/A	N/A	
4286	1, 2	23	1-RC-MOV-1593	RC/LOOP 2 COLD LEG ISOL	11715-FM-093A2/19/B5	CONTMT	256' C	--	--	1,37, 14	OPEN	OPEN	NO	N/A	N/A	
4287	1, 2	23	1-RC-MOV-1594	RC/LOOP 3 HOT LEG ISOL	11715-FM-093A3/22/E6	CONTMT	256' C	--	--	1,37, 14	OPEN	OPEN	NO	N/A	N/A	
4290	1, 2	23	1-RC-MOV-1595	RC/LOOP 3 COLD LEG ISOL	11715-FM-093A3/22/C6	CONTMT	256' C	--	--	1,37, 14	OPEN	OPEN	NO	N/A	N/A	
1269	1, 2	23	1-RC-ND1*	RC/NEUTRON DETECTOR	11715-FM-079B5/11	CONTMT	242'	--	S	1,14, 13	N/A	N/A	YES	N/A	N/A	
1270	1, 2	23	1-RC-ND2*	RC/NEUTRON DETECTOR	11715-FM-079B5/11	CONTMT	242'	--	S	1,14, 13	N/A	N/A	YES	N/A	N/A	
1271	1, 2	23	1-RC-ND3*	RC/NEUTRON DETECTOR	11715-FM-079B5/11	CONTMT	242'	--	S	1,14, 13	N/A	N/A	YES	N/A	N/A	
1272	1, 2	23	1-RC-ND4*	RC/NEUTRON DETECTOR	11715-FM-079B5/11	CONTMT	242'	--	S	1,14, 13	N/A	N/A	YES	N/A	N/A	
1273	1, 2	23	1-RC-ND5*	RC/NEUTRON DETECTOR	11715-FM-079B5/11	CONTMT	242'	--	S	1,14, 13	N/A	N/A	YES	N/A	N/A	
1274	1, 2	23	1-RC-ND6*	RC/NEUTRON DETECTOR	11715-FM-079B5/11	CONTMT	242'	--	S	1,14, 13	N/A	N/A	YES	N/A	N/A	
1275	1, 2	23	1-RC-ND7*	RC/NEUTRON DETECTOR	11715-FM-079B5/11	CONTMT	242'	--	S	1,14, 13	N/A	N/A	YES	N/A	N/A	
1276	1, 2	23	1-RC-ND8*	RC/NEUTRON DETECTOR	11715-FM-079B5/11	CONTMT	242'	--	S	1,14, 13	N/A	N/A	YES	N/A	N/A	
3020A	1, 2	23	1-RC-P-1A	RC/REACTOR COOLANT PUMP A	11715-FM-093B3/19/E4	CONTMT	262'	1	S R	1,14	ON	OFF	NO	N/A	N/P	
3020B	1, 2	23	1-RC-P-1B	RC/REACTOR COOLANT PUMP B	11715-FM-093B3/19/C4	CONTMT	262'	12.5	S R	1,14	ON	OFF	NO	N/A	N/A	
3020C	1, 2	23	1-RC-P-1C	RC/REACTOR COOLANT PUMP C	11715-FM-093B3/19/A4	CONTMT	262'	7	S R	1,14	ON	OFF	NO	N/A	N/A	
1260	1, 2	23	1-RC-R-1	RC/REACTOR VESSEL	11715-FM-001G/12/C3	CONTMT	256'	--	S	1,14	N/A	N/A	NO	N/A	N/A	

NORTH ANNA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
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Filter Criteria: <none>  
Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Fir. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal?	ST. Desired?	POWER REQD?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10) (11)	(12)	(13)	(14)	(15)	(16)	(17)
1263	1, 2	23	1-RC-UR1*	RC/UPPER REACTOR INTERNALS	11715-5.11 SERIES	CONTMT	262'	--	S 1,14	N/A	N/A	NO	N/A	N/A	N/A
4115	1	R	1-AS-45	AS/AS BOUNDARY	11715-FM-072B/13/C4	AUX	259'	7.7/H	-- 15	OPEN	CLOSED	NO	N/A	N/A	N/A
4116	1	R	1-AS-46	AS/AS BOUNDARY	11715-FM-072B/13/C4	AUX	259'	7.7/H	-- 15	OPEN	CLOSED	NO	N/A	N/A	N/A
5034	1, 2	R	1-CC-273	CC/FUEL PIT COOLER MANUAL ISOL	11715-FM-079C3/13/E7	AUX	--	--	-- 15	OPEN	CLOSED	NO	N/A	N/A	N/A
5035	1, 2	R	1-CC-308	CC/FUEL PIT COOLER MANUAL ISOL	11715-FM-079C3/13/E4	AUX	--	--	-- 15	OPEN	CLOSED	NO	N/A	N/A	N/A
5016	1, 2	R	1-CC-310	CC/BORON STRIPPER MANUAL ISOL	11715-FM-079C1/13/E8	AUX	265'	7.3/G	-- 15	OPEN	CLOSED	NO	N/A	N/A	N/A
5032	1, 2	R	1-CC-373	CC/BORON STRIPPER MANUAL ISOL	11715-FM-079C1/13/E5	AUX	265'	7.3/G	-- 15	OPEN	CLOSED	NO	N/A	N/A	N/A
5018	1, 2	R	1-CC-374	CC/SGBD HX MANUAL ISOL	11715-FM-079C1/13/C5	AUX	259'	8/G	-- 15	OPEN	CLOSED	NO	N/A	N/A	N/A
5033	1, 2	R	1-CC-387	CC/SGBD HX MANUAL ISOL	11715-FM-079C1/13/C3	AUX	265'	7.6/G	-- 15	OPEN	CLOSED	NO	N/A	N/A	N/A
5042	1, 2	R	1-CC-410	CC/BORON EVAP PUMPS MANUAL ISOL	11715-FM-079C5/18/B8	AUX	244'	10/G	-- 15	OPEN	CLOSED	NO	N/A	N/A	N/A
5043	1, 2	R	1-CC-455	CC/BORON EVAP PUMPS MANUAL ISOL	11715-FM-079C5/18/A3	AUX	244'	10/G	-- 15	OPEN	CLOSED	NO	N/A	N/A	N/A
5036	1, 2	R	1-CC-458	CC/WST EVAP OH COND MANUAL ISOL	11715-FM-079C4/15/A6	AUX	259'	10/F	-- 15	OPEN	CLOSED	NO	N/A	N/A	N/A
5041	1, 2	R	1-CC-472	CC/BORON EVAP DIST COOLER MANUAL ISOL	11715-FM-079C4/15/A8	AUX	268'	10/G	-- 15	OPEN	CLOSED	NO	N/A	N/A	N/A
5038	1, 2	R	1-CC-473	CC/BORON EVAP DIST COOLER MANUAL ISOL	11715-FM-079C4/15/D5	AUX	274'	10/E	-- 15	OPEN	CLOSED	NO	N/A	N/A	N/A
5039	1, 2	R	1-CC-490	CC/BORON EVAP DIST COOLER MANUAL ISOL	11715-FM-079C4/15/F8	AUX	266'	10/G	-- 15	OPEN	CLOSED	NO	N/A	N/A	N/A
5037	1, 2	R	1-CC-491	CC/BORON EVAP DIST COOLER MANUAL ISOL	11715-FM-079C4/15/D5	AUX	274'	10.5/H	-- 15	OPEN	CLOSED	NO	N/A	N/A	N/A
5040	1, 2	R	1-CC-508	CC/BORON EVAP DIST COOLER MANUAL ISOL	11715-FM-079C4/15/F8	AUX	259'	10/G	-- 15	OPEN	CLOSED	NO	N/A	N/A	N/A
5107	1, 2	R	1-CC-629	CC/SGBD VENT CONDENSER MANUAL ISOL	11715-FM-079A3/14/B5	AUX	291'	7.8/G	-- 15	OPEN	CLOSED	NO	N/A	N/A	N/A
5108	1, 2	R	1-CC-634	CC/SGBD VENT CONDENSER MANUAL ISOL	11715-FM-079A3/14/C5	AUX	291'	7.7/G	-- 15	OPEN	CLOSED	NO	N/A	N/A	N/A
5108A	1	R	1-CC-67	CC/NONREGEN HX CC MANUAL ISOL	11715-FM-079A3/14/E7	AUX	259'	9/L	-- 15	OPEN	CLOSED	NO	N/A	N/A	N/A
5108B	1	R	1-CC-74	CC/NONREGEN HX CC MANUAL ISOL	11715-FM-079A3/14/E6	AUX	259'	9/L	-- 15	OPEN	CLOSED	NO	N/A	N/A	N/A
5048	1, 2	R	1-CC-843	CC/CC SURGE TANK TO LIQUID WASTE MANUAL ISOL	11715-FM-079A1/17/D6	AUX	291'	8.3/G	-- 3	CLOSED	CLOSED	NO	N/A	N/A	N/A
5031	1, 2	R	1-CC-848	CC/1(2) CV-E-1B MANUAL ISOL	11715-FM-079C1/13/F3	AUX	274'	9.6/L	-- 15	OPEN	CLOSED	NO	N/A	N/A	N/A
5017	1, 2	R	1-CC-859	CC/1(2) CV-E-1B MANUAL ISOL	11715-FM-079C1/13/E3	AUX	274'	9.6/L	-- 15	OPEN	CLOSED	NO	N/A	N/A	N/A

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
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LINE NO.	EQUIP TRAIN	CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Ely.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1164A	2	R	1-CH-111	CH/BATP SUCTION ALIGNMENT VALVE	11715-FM-095A1/22/A5	AUX	261'	9.5/HJ	--	15	CLOSED	OP/CL	NO	N/A	N/A	
1134	2	R	1-CH-209	CH/RCP SEAL WATER FILTER BYPASS	11715-FM-095B1/21/B8	AUX	244'	9/J	--	15	CLOSED	OPEN	NO	N/A	N/A	
1176	2	R	1-CH-241	CH/MANUAL EMERGENCY BORATE VALVE	11715-FM-095B1/21/B4	AUX	274'	8.6/J	--	15	CLOSED	OPEN	NO	N/A	N/A	
1080	2	R	1-CH-289	CH/CHARGING FLOW TO REGEN HX BYPASS	11715-FM-095C1/14/D4	AUX	204'	6/H	--	15	CLOSED	OPEN	NO	N/A	N/A	
1094	2	R	1-CH-293	CH/CCP TO RCP SEAL INJECTION MANUAL VALVE	11715-FM-095C2/13/E3	AUX	244'	9/L	--	15	CLOSED	OPEN	NO	N/A	N/A	
1097	2	R	1-CH-302	CH/RCP SEAL WATER INJECTION FILTER ISOL	11715-FM-095C2/13/C3	AUX	252'	9.5/M	--	15	CLOSED	OPEN	NO	N/A	N/A	
1098	2	R	1-CH-306	CH/RCP SEAL WATER INJECTION FILTER ISOL	11715-FM-095C2/13/C3	AUX	252'	9.5/M	--	15	CLOSED	OPEN	NO	N/A	N/A	
1164B	1	R	1-CH-80	CH/BATP SUCTION ALIGNMENT VALVE	11715-FM-095A1/22/A4	AUX	261'	9.5/HJ	--	15	CLOSED	OP/CL	NO	N/A	N/A	
1164	1, 2	R	1-CH-85	CH/BORIC ACID FILTER BYPASS	11715-FM-095A1/22/C4	AUX	259'	9/H	--	15	CLOSED	OPEN	J	N/A	N/A	
1164C	2	R	1-CH-87	CH/BATP DISCH ALIGNMENT VALVE	11715-FM-095A1/22/C4	AUX	261'	9.5/HJ	--	15	CLOSED	OP/CL	NO	N/A	N/A	
4106	1	R	1-CN-134	CN/CONDENSATE STORAGE TANKS 1 & 2 CROSS-TIE	11715-FM-073A/31/B6	YARD	270'	--	--	15	CLOSED	OPEN	NO	N/A	N/A	
4107	1	R	1-CN-135	CN/NRV ISOL	11715-FM-073A/31/B7	TB	279'	5/Z	--	15	OPEN	CLOSED	NO	N/A	N/A	
4108	1	R	1-CN-136	CN/NRV ISOL	11715-FM-073A/31/B7	TB	279'	6/Z	--	15	OPEN	CLOSED	NO	N/A	N/A	
4109	1	R	1-CN-137	CN/NRV ISOL	11715-FM-073A/31/A7	TB	279'	5/Z	--	15	OPEN	CLOSED	NO	N/A	N/A	
4110	1	R	1-CN-138	CN/NRV ISOL	11715-FM-073A/31/A7	TB	279'	6/Z	--	15	OPEN	CLOSED	NO	N/A	N/A	
4111	1	R	1-CN-141	CN/LEVEL CONTROL ISOL	11715-FM-073A/31/D7	YARD	254'	6.4/Z	--	15	OPEN	CLOSED	NO	N/A	N/A	
4104	1	R	1-CN-147	CN/MAKEUP CONTROL ISOL	11715-FM-073A/31/D7	YARD	254'	3/X	--	15	OPEN	CLOSED	NO	N/A	N/A	
4102	1	R	1-CN-149	CN/MAKEUP CONTROL ISOL	11715-FM-073A/31/D6	YARD	254'	4/B	--	15	OPEN	CLOSED	NO	N/A	N/A	
4105	1	R	1-CN-202	CN/MAKEUP CONTROL	11715-FM-073A/31/C6	YARD	254'	3/B	--	15	OPEN	CLOSED	NO	N/A	N/A	
4103	1	R	1-CN-468	CN/SAMPLE COOLER ISOL	11715-FM-073A/31/B7	YARD	254'	3/X	--	15	OPEN	CLOSED	NO	N/A	N/A	
4112	1	R	1-CN-WHD121*	CN/ISOL VALVE	11715-FM-073A/31/B8	YARD	--	--	--	15	OPEN	CLOSED	NO	N/A	N/A	
4114	1	R	1-CP-312	CP/CP BACKWASH PUMP ISOL VALVE	11715-FM-073B/13/A6	YARD	254'	3/B	--	15	OPEN	CLOSED	NO	N/A	N/A	
4113	1	R	1-CP-390	CP/CP BACKWASH PUMP ISOL VALVE	11715-FM-073B/13/A6	YARD	254'	3/B	--	15	OPEN	CLOSED	NO	N/A	N/A	
4165A	2	R	1-FW-126	FW/AFWP TO SG C MANUAL ISOL VALVE	11715-FM-074A1/32/B6	AFPH	275'	--	--	15	CLOSED	OPEN	NO	N/A	N/A	

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
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 Program File Name & Version: SSEM 2.2

LINE NO.	TRAIN	EQUIP CLASS	MARK NO	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Ftr. Elv.	LOCATION Rm. or Row/Fr.	SORT	NOTES	Normal	OP. Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
4117	1	R	1-FW-142	FW/CONDENSATE STORAGE TANK ISOL	11715-FM-074A3/29/D3	AFPH	222'	--	--	15	CLOSED	OPEN	NO	N/A	N/A	
4138	1	R	1-FW-143	FW/SW MANUAL ISOL TO TDAFWP	11715-FM-074A3/29/D4	AFPH	--	--	--	15	OPEN	CLOSED	NO	N/A	N/A	
4137	1	R	1-FW-145	FW/SW MANUAL ISOL TO TDAFWP	11715-FM-074A3/29/B7	AFPH	--	--	--	15	CLOSED	OPEN	NO	N/A	N/A	
4132	2	R	1-FW-160	FW/SW MANUAL ISOL TO MDAFWP	11715-FM-074A3/29/D4	AFPH	--	--	--	15	OPEN	CLOSED	NO	N/A	N/A	
4131	2	R	1-FW-162	FW/SW MANUAL ISOL TO MDAFWP	11715-FM-074A3/29/B6	AFPH	--	--	--	15	CLOSED	OPEN	NO	N/A	N/A	
4126	2	R	1-FW-173	FW/SW MANUAL ISOL TO MDAFWP	11715-FM-074A3/29/D4	AFPH	--	--	--	18,15	OPEN	CLOSED	NO	N/A	N/A	
4125	2	R	1-FW-180	FW/SW MANUAL ISOL TO MDAFWP	11715-FM-074A3/29/B5	AFPH	--	--	--	15	CLOSED	OPEN	NO	N/A	N/A	
4139	1, 2	R	1-FW-227	FW/SW MANUAL ISOL TO AFWP HEADER	11715-FM-074A3/29/A8	AFPH	--	--	--	15	CLOSED	OPEN	NO	N/A	N/A	
4171	2	R	1-FW-62	FW/AFWP TO SG A MANUAL ISOL VALVE	11715-FM-074A1/32/A7	AFPH	--	--	--	15	CLOSED	OPEN	NO	N/A	N/A	
4173	2	R	1-FW-64	FW/AFWP TO SG C MANUAL ISOL VALVE	11715-FM-074A1/32/A7	AFPH	--	--	--	15	CLOSED	OPEN	NO	N/A	N/A	
4168	2	R	1-FW-96	FW/AFWP TO SG B MANUAL ISOL VALVE	11715-FM-074A1/32/A6	AFPH	--	--	--	15	CLOSED	OPEN	NO	N/A	N/A	
7049	1	R	1-HC-10	HC/HYDROGEN COMBINER 1 DISCH ISOL	11715-FMC-092A1/1/B3	RECO RM 2	270'	--	--	1,15,38	CLOSED	OPEN	NO	N/A	N/A	
7047	1	R	1-HC-8	HC/HYDROGEN COMBINER 1 INLET ISOL	11715-FMC-092A1/1/B3	AUX	274'	10/Y	--	1,15,38	CLOSED	OPEN	NO	N/A	N/A	
5426	1, 2	R	1-HV-S-1A	HV/SELF CLEANING STRAINER	11715-FB-04001/15/D8	SB	254'	CHILLER RM	--	--	ON	ON	YES	N/A	N/A	
5427	1, 2	R	1-HV-S-1B	HV/SELF CLEANING STRAINER	11715-FB-04001/15/B8	SB	254'	CHILLER RM	--	--	ON	ON	YES	N/A	N/A	
5449X	2	R	1-HV-V-1*	HV/STANDBY CHILLER MANUAL ISOL	11715-FB-040A1/13/D7	SB	--	--	--	15	CLOSED	OPEN	NO	N/A	N/A	
5449Y	2	R	1-HV-V-2*	HV/STANDBY CHILLER MANUAL ISOL	11715-FB-040A1/13/E7	SB	--	--	--	15	CLOSED	OPEN	NO	N/A	N/A	
5449Z	2	R	1-HV-V-3*	HV/STANDBY CHILLER MANUAL ISOL	11715-FB-040A1/13/D4	SB	--	--	--	15	CLOSED	OPEN	NO	N/A	N/A	
5449Z1	2	R	1-HV-V-4*	HV/STANDBY CHILLER MANUAL ISOL	11715-FB-040A1/13/D4	SB	--	--	--	15	CLOSED	OPEN	NO	N/A	N/A	
4016	1, 2	R	1-MS-343	MS/MANUAL BYPASS VALVE	11715-FM-070B1/19/D5	MSVH	297'	5.6/HA	--	3	CLOSED	CLOSED	NO	N/A	N/A	
4042	1, 2	R	1-MS-352	MS/MANUAL BYPASS VALVE	11715-FM-070B2/19/D4	MSVH	--	--	--	3	CLOSED	CLOSED	NO	N/A	N/A	
4068	1, 2	R	1-MS-361	MS/MANUAL BYPASS ISOL	11715-FM-070B3/23/D4	MSVH	297'	4.9/GA	--	3	CLOSED	CLOSED	NO	N/A	N/A	
4256	1, 2	R	1-RH-31	RH/RHR LETDOWN ISOL	11715-FM-094A2/15/D5	CONTMT	216'	7	--	3	OPEN	OPEN	NO	N/A	N/A	
4260B	1, 2	R	1-RH-36	RH/RHR TO RWST ISOL	11715-FM-094A2/15/C3	CONTMT	216'	7	--	15	CLOSED	OPEN	NO	N/A	N/A	
4260C	1, 2	R	1-RH-37	RH/RHR TO RWST ISOL	11715-FM-094A2/15/D3	AUX	255'	3/LS	--	15	CLOSED	OPEN	NO	N/A	N/A	
1167	2	R	1-SI-303	SI/BATP TO BIT ISOL	11715-FM-096A3/22/E4	AUX	244'	--	--	15	OPEN	CLOSED	NO	N/A	N/A	



NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA1\_SSEL.DBF / 05/20/97 / 11:43:22  
 Sort Criteria: Class, ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	Equipment Flr. Elv.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQD?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10) (11)	(12)	(13)	(14)	(15)	(16)	(17)
1095	2	R	1-SI-77	SI/BIT BYPASS MANUAL ISOL	11715-096A3/22/F7	AUX	244'	--	-- A	CLOSED	CLOSED	NO	N/A	N/A	
1095	2	R	1-SI-77	SI/BIT BYPASS MANUAL ISOL	11715-096A3/22/F7	AUX	244'	--	-- 1,15	CLOSED	OPEN	NO	N/A	N/A	
5170B	1	R	1-SW-1067	SW/CHEM ADD SYS ISOL	11715-FM-078A3/28/E7	SWPH	265'	--	-- 15	OPEN	CLOSED	NO	N/A	N/A	
5170C	1	R	1-SW-1070	SW/CHEM ADD SYS ISOL	11715-FM-078A3/28/E7	SWPH	270'	--	-- 15	OPEN	CLOSED	NO	N/A	N/A	
5170A	1	R	1-SW-1139	SW/CHEM ADD SYS ISOL	11715-FM-078A3/28/E7	SWPH	270'	--	-- 15	OPEN	CLOSED	NO	N/A	N/A	
5261A	1	R	1-SW-266	SW/IA COMP ISOL	11715-FM-078C2/27/E7	AUX	259'	9.5/J	-- 15	OPEN	CLOSED	NO	N/A	N/A	
5261B	1	R	1-SW-273	SW/IA COMP ISOL	11715-FM-078C2/27/D7	AUX	259'	9.5/J	-- 15	OPEN	CLOSED	NO	N/A	N/A	
5450	2	R	1-SW-405	HV/CR & RR WATER SYSTEM CROSS-TIE VALVE	11715-FB-040D1/15/E3	SB	254'	CHILLER RM	-- 15	CLOSED	OPEN	NO	N/A	N/A	
5431	2	R	1-SW-410	HV/CR & RR WATER SYSTEM CROSS-TIE VALVE	11715-FB-040D1/15/C7	SB	254'	5/C	-- 15	CLOSED	OPEN	NO	N/A	N/A	
7060	2	R	2-HC-16	HC/HYDROGEN COMBINER 2 DISCH ISOL	11715-FMC-092A1/1/BC	AUX	270'	RECO RM 2	-- 1,15, 39	CLOSED	OPEN	NO	N/A	N/A	
7058	2	R	2-HC-2	HC/HYDROGEN COMBINER 2 INLET ISOL	11715-FMC-092A1/1/R3	AUX	270'	RECO RM 2	-- 1,15, 39	CLOSED	OPEN	NO	N/A	N/A	
5261C	1	R	2-SW-205	SW/IA COMP ISOL	11715-FM-078C2/27/E3	AUX	--	--	-- 15	OPEN	CLOSED	NO	N/A	N/A	
5261D	1	R	2-SW-212	SW/IA COMP ISOL	11715-FM-078C2/27/D3	AUX	--	--	-- 15	OPEN	CLOSED	NO	N/A	N/A	

NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA2\_SSEL.DBF / 05/20/97 / 13:04:12  
 Sort Criteria: Class, ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Fir. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D & SUPPORTING COMPONENTS	INTERCONNECTIONS	REG. ISSUE	
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)		
1152	1	0	1-CH-H-8A	CH/BAST C STRIP HEATER	11715-FM-095A1/22/E8	AUX	260'	11	2/J	S	R	--	ON	ON	YES	11715-CH-037/5	N/A
1153	1	0	1-CH-H-8B	CH/BAST C STRIP HEATER	11715-FM-095A1/22/E8	AUX	260'	11	2/J	S	R	--	ON	ON	YES	11715-CH-038/2	N/A
5261	1	0	1-HV-MOD-135	HV/AIR COND. FAN DISCH. DAMPER	11715-FB-044C3/07/E8	SB	277'	10	D	S			ON	ON	YES	N/A	1-HV-AC-1
5271	2	0	1-HV-MOD-136	HV/AIR COND. FAN DISCH. DAMPER	11715-FB-044C3/07/E8	SB	277'	10	D	S			ON	ON	YES	N/A	1-HV-AC-2
5240	1	0	1-HV-MOD-137	HV/AIR COND. FAN DISCH. DAMPER	11715-FB-044C3/07/B7	SB	252'	12	D	S			ON	ON	YES	N/A	1-HV-AC-6
5250	2	0	1-HV-MOD-138	HV/AIR COND. FAN DISCH. DAMPER	11715-FB-044C3/G./B7	SB	252'	12	D	S			ON	ON	YES	N/A	1-HV-AC-7
4211A3		0	2-FW-FY-2479	ELECTRO-PNEUMATIC CONTROLLER		MER#2	286'	D	12	S							
4211B3		0	2-FW-FY-2489	ELECTRO-PNEUMATIC CONTROLLER		MER#2	286'	D	12	S							
4211C3		0	2-FW-FY-2499	ELECTRO-PNEUMATIC CONTROLLER		MER#2	286'	D	12	S							
5262	1	0	2-HV-MOD-235	HV/AIR COND. FAN DISCH. DAMPER	11715-FB-044C3/07/E8	SB	277'	10	D	S	36		ON	ON	YES	N/A	2-HV-AC-8
5272	2	0	2-HV-MOD-236	HV/AIR COND. FAN DISCH. DAMPER	11715-FB-044C3/07/E8	SB	277'	10	D	S	36		ON	ON	YES	N/A	2-HV-AC-9
5241	1	0	2-HV-MOD-237	HV/AIR COND. FAN DISCH. DAMPER	11715-FB-044C3/07/B7	SB	252'	12	D	S	36		ON	ON	YES	N/A	2-HV-AC-6
5251	2	0	2-HV-MOD-238	HV/AIR COND. FAN DISCH. DAMPER	11715-FB-044C3/07/B7	SB	252'	12	D	S	36		ON	ON	YES	N/A	2-HV-AC-7
6015	1	01	2-EP-MC-10	EP/EMERGENCY MCC 2H1-1	12050-FE-001Q1/12/A,	SB	254'	9	C	S	R	41	N/A	N/A	YES	N/A	2-EE-SS-01
6022	2	01	2-EP-MC-11	EP/EMERGENCY MCC 2J1-1	12050-FE-001Q1/12/A,	SB	254'	9	C	S	R	41	N/A	N/A	YES	N/A	2-EE-SS-02
6021	1	01	2-EP-MC-12	EP/EMERGENCY MCC 2H1-1A	12050-FE-001R1/11/A,	EDG	274'	--		S	R	--	N/A	N/A	YES	N/A	2-EP-MC-10
6027	2	01	2-EP-MC-13	EP/EMERGENCY MCC 2J1-1A	12050-FE-001R1/11/G,	2J-EDG	271'	--		S	R	--	N/A	N/A	YES	N/A	2-EP-MC-11
6020	1	01	2-EP-MC-19	EP/EMERGENCY MCC 2H1-2N	12050-FE-001N1/16/E,	AUX	259' 6"	11	J	S	R	41	N/A	N/A	YES	N/A	2-EE-SS-03
6017	1	01	2-EP-MC-20	EP/EMERGENCY MCC 2H1-2S	12050-FE-001N1/16/B,	AUX	259' 6"	11	J	S	R	41	N/A	N/A	YES	N/A	2-EE-SS-01
6024	2	01	2-EP-MC-21	EP/EMERGENCY MCC 2J1-2N	12050-FE-001P1/16/E,	AUX	259' 6"	CABLE TUNNEL		S	R	41	N/A	N/A	YES	N/A	2-EP-MC-22
6023	2	01	2-EP-MC-22	EP/EMERGENCY MCC 2J1-2S	12050-FE-001P1/16/B,	AUX	259' 6"	CABLE TUNNEL		S	R	41	N/A	N/A	YES	N/A	2-EE-SS-02
6018	1	01	2-EP-MC-32	EP/EMERGENCY MCC 2H1-3	12050-FE-001R1/11/A,	SWPH	328'	SWPH		S	R	--	N/A	N/A	YES	N/A	2-EE-SS-01

NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA2\_SSEL.DBF / 05/20/97 / 13:04:12  
 Sort Criteria: Class, ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No /Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQD?	SUPPORTING SYS. DWG. NO./REV.	REQ'D & SUPPORTING COMPONENTS	INTERCONNECTIONS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10) (11)	(12)	(13)	(14)	(15)	(16)	(17)	
6025	2	01	2-EP-MC-33	EP/EMERGENCY MCC 2J1-3	12050-FE-001R1/11/G, SWPH I-1	327'	SWPH	S R	--	N/A	N/A	YES	N/A		2-EE-SS-02	
6016	1	01	2-EP-MC-41	EP/EMERGENCY MCC 2H1-4	12050-FE-001Q1/12/A, SB H-3	254'	9/C	S R	41	N/A	N/A	YES	N/A		2-EE-SS-01	
6019	1	01	2-EP-MC-50	EP/EMERGENCY MCC 2H1-3A	12050-FE-001R1/11/A, SWPH D-7	326'	SWPH	S R	41	N/A	N/A	YES	N/A		2-EP-MC-32	
6026	2	01	2-EP-MC-51	EP/EMERGENCY MCC 2J1-3A	12050-FE-001R1/11/E, SWPH I-7	326'	--	S R	41	N/A	N/A	YES	N/A		2-EP-MC-31	
1252	1	02	2-EE-BKR-BYA	CR*/REACTOR TRIP BREAKER BYPASS A	12050-1.27-402A	AUX	280'	RCD	S R	--	CLOSED	OPEN	YES	N/A	N/A	
1253	2	02	2-EE-BKR-BYB	CR*/REACTOR TRIP BREAKER BYPASS B	12050-1.27-402A	AUX	280'	RCD	S R	--	CLOSED	OPEN	YES	N/A	N/A	
1250	1	02	2-EE-BKR-RTA	CR*/REACTOR TRIP BREAKER A	12050-1.27-402A	AUX	280'	RCD	S R	--	CLOSED	OPEN	YES	N/A	N/A	
1251	2	02	2-EE-BKR-RTB	CR*/REACTOR TRIP BREAKER B	12050-1.27-402A	AUX	280'	RCD	S R	--	CLOSED	OPEN	YES	N/A	N/A	
6011	1	02	2-EE-SS-01	EE/480V EMERGENCY BUS 2H	12050-FE-001A1/10/D7 SB	254'	9/C	S R	41	N/A	N/A	YES	N/A		2-BY-B-01,02;2-EE-ST-2H	
6013	2	02	2-EE-SS-02	EE/480V EMERGENCY BUS 2J	12050-FE-001A1/10/A7 SB	252'	8/C	S R	41	N/A	N/A	YES	N/A		2-BY-B-03,04;2-EE-ST-2J	
6012	1	02	2-EE-SS-03	EE/480V EMERGENCY BUS 2H1	12050-FE-001A1/10/L7 AUX	280'	RCD	S R	--	N/A	N/A	YES	N/A		2-BY-B-01,02;2-EE-ST-03	
6014	2	02	2-EE-SS-04	EE/480V EMERGENCY BUS 2J1	12050-FE-001A1/10/B7 AUX	280'	11/K	S R	--	N/A	N/A	YES	N/A		2-BY-B-03,04;2-EE-ST-02	
6005	1	03	2-EE-SW-01	EE/4KV EMERGENCY BUS 2H (ORANGE)	12050-FE-001A1/10/D5 SB	252'	9/D	S R	41	N/A	N/A	YES	N/A		EDG 2H;2-BY-B-01,-02	
6006	2	03	2-EE-SW-02	EE/4KV EMERGENCY BUS 2J (PURPLE)	12050-FE-001A1/10/A5 SB	252'	8/D	S R	41	N/A	N/A	YES	N/A		EDG 2J;2-BY-B-01,-02	
6007	1	04	2-EE-ST-2H	EE/4160/480 TRANSFORMER 2H	12050-FE-001A1/10/D7 SB	254'	9/D	S	?	--	N/A	N/A	YES	N/A	2-EE-SW-01;EDG 2H	
6008	1	04	2-EE-ST-2H1	EE/4160/480 TRANSFORMER 2H1	12050-FE-001A1/10/C7 AUX	280'	RCD	S R	--	N/A	N/A	YES	N/A		2-EE-SW-01;EDG 2H	
6009	2	04	2-EE-ST-2J	EE/4160/480 TRANSFORMER 2J	12050-FE-001A1/10/A7 SB	252'	8/D	S R	--	N/A	N/A	YES	N/A		2-EE-SW-02;EDG 2J	
6010	2	04	2-EE-ST-2J1	EE/4160/480 TRANSFORMER 2J1	12050-FE-001A1/10/B7 AUX	274'	11/D	S R	--	N/A	N/A	YES	N/A		2-EE-SW-02;EDG 2J	
5561*	1	04	2-EE-TRANS-42N-2	/HEAT TRACE TRANSFORMER	11715-FE-001N/16 AFPH	271'	--	S R	--	ON	ON	YES	N/A		N/A	
5562*	2	04	2-EE-TRANS-42R-2	/HEAT TRACE TRANSFORMER	11715-FE-001B/16 AFPH	271'	--	S R	--	ON	ON	YES	N/A		N/A	
6030	2	04	2-EP-TRANS-80-2*	EP/480/120 VOLT. REG. TRANSFORMER (80-2)	12050-FE-001AE1/10/B SB 5	252'	9/D	S R	--	N/A	N/A	YES	N/A		2-EP-MC-11	
6028	1	04	2-TRANS-79A	EP/480/120 VOLT. REG. TRANSFORMER (79A-2)	12050-FE-001AE1/10/L SB 5	254'	9/D	S R	--	N/A	N/A	YES	N/A		2-EP-MC-10	
6029	1	04	2-TRANS-79B	EP/480/120 VOLT. REG. TRANSFORMER (79B-2)	12050-FE-001AE1/10/M SB 5	254'	9/D	S R	--	N/A	N/A	YES	N/A		2-EP-MC-10	

NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA2\_SSEL.DBF / 05/20/97 / 13:04:12  
 Sort Criteria: Class, ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Fir. Elv.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. ST. Normal	Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
6031	1	04	TRANS-118-2*	EP/480/120 SEMI-VITAL TRANSFORMER (118-2)	12050-FE-001AE1/10/I SB 3	254'	EMER SWGR	S R	--	N/A	N/A	YES	N/A	2-EP-MC-41	
6033	2	04	TRANS-119-2*	EP/480/120 SEMI-VITAL TRANSFORMER (119-2)	12050-FE-001AE1/10/E SB 3	254'	EMER SWGR	S R	--	N/A	N/A	YES	N/A	2-EP-MC-22	
6032	1	04	TRANS-70-2*	EP/480/120 SEMI-VITAL TRANSFORMER (70-2)	12050-FE-001AE1/10/I SB ,J-4	284'	CR	S R	--	N/A	N/A	YES	N/A	2-EP-MC-10	
6034	2	04	TRANS-71-2*	EP/480/120 SEMI-VITAL TRANSFORMER (71-2)	12050-FE-001AE1/10/E SB 4	284'	CR	S R	--	N/A	N/A	YES	N/A	2-EP-MC-11	
1160	2	05	1-CH-P-2C	CH/BORIC ACID TRANSFER PUMP (BATP)	11715-FM-095A1/22/B6 AUX	261'	9.5/HJ	S R	--	ON	ON	YES	N/A	N/A	
1161	1	05	1-CH-P-2D	CH/BORIC ACID TRANSFER PUMP (BATP)	11715-FM-095A1/22/B6 AUX	261'	9.5/HJ	S R	--	ON	ON	YES	N/A	N/A	
5001	1	05	2-CC-P-1A	CC/COMPONENT COOLING WATER PUMP	11715-FM-079A2/18/E7 AUX	245'	9/H	S R	1	ON	ON	YES	N/A	N/A	
5005	1	05	2-CC-P-1B	CC/COMPONENT COOLING WATER PUMP	11715-FM-079A2/18/D7 AUX	245'	10/H	S R	1	ON	ON	YES	N/A	N/A	
1064	1	05	2-CH-P-1A	CH/CENTRIFUGAL CHARGING PUMP A; (CCP A)	12050-FM-095B2/25/C4 AUX	244'	9/J	S R	--	ON	ON	YES	N/A	N/A	
1065	2	05	2-CH-P-1B	CH/CENTRIFUGAL CHARGING PUMP B; (CCP B)	12050-FM-095B2/25/C6 AUX	244'	9.5/J	S R	--	ON	ON	YES	N/A	N/A	
1066	3	05	2-CH-P-1C	CH/CENTRIFUGAL CHARGING PUMP C; (CCP C)	12050-FM-095B2/25/C8 AUX	244'	10/J	S R	--	ON	ON	YES	N/A	N/A	
4142	1	05	2-FW-P-2	FW/TURBINE-DRIVEN AUXILIARY FEEDWATER PUMP (TDAFWP)	12050-FM-074A3/29/B8 AFPH	274'	--	S	--	OFF	RUNNING	YES	12050-FP-2J 12050-FP-2K	N/A	
4135	2	05	2-FW-P-3A	FW/MOTOR-DRIVEN AUXILIARY FEEDWATER PUMP (MDAFWP)	12050-FM-074A3/29/B6 AFPH	275'	--	S R	--	OFF	RUNNING	YES	12050-FP-2J 12050-FP-2K	N/A	
4129	2	05	2-FW-P-3B	FW/MOTOR-DRIVEN AUXILIARY FEEDWATER PUMP (MDAFWP)	12050-FM-074A3/29/B5 AFPH	275'	--	S R	--	OFF	RUNNING	YES	12050-FP-2J	N/A	
7003	1	05	2-QS-P-1A	QS/QS PUMP A	12050-FM-091A2/19/B5 QSPH	274'	--	S R	1	OFF	ON	YES	N/A	2-EE-SS-03	
7006	2	05	2-QS-P-1B	QS/QS PUMP B	12050-FM-091A2/19/B4 QSPH	274'	--	S R	1	OFF	ON	YES	N/A	2-EE-SS-04	
7037	2	05	2-RS-P-3A	RS/CASING COOLING PUMP A	12050-FM-091B1/10/B7 CSCPH	271'	--	S R	1	OFF	ON	YES	N/A	2-EP-MC-20	
7040	2	05	2-RS-P-3B	RS/CASING COOLING PUMP B	12050-FM-091B1/10/B6 CSCPH	271'	--	S R	1	OFF	ON	YES	N/A	2-EP-MC-22	
7035E	1	05	2-SW-P-5	SW/RADIATION MONITORING PUMP	11715-FM-078B3/21/C6 QSPH	265'	--	S	1	OFF	OFF	NO	N/A	N/A	
7035F	1	05	2-SW-P-6	SW/RADIATION MONITORING PUMP	11715-FM-078B3/21/C6 QSPH	265'	--	S	1	OFF	OFF	NO	N/A	N/A	
7035G	2	05	2-SW-P-7	SW/RADIATION MONITORING PUMP	11715-FM-078B3/21/C5 QSPH	265'	--	S	1	OFF	OFF	NO	N/A	N/A	
7035H	2	05	2-SW-P-8	SW/RADIATION MONITORING PUMP	11715-FM-078B3/21/C4 QSPH	265'	--	S	1	OFF	OFF	NO	N/A	N/A	

NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: MA2\_SSEL.DBF / 05/20/97 / 13:04:12  
 Sort Criteria: Class, ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elv.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQD?	SUPPORTING DNG. NO./REV.	SYS. & SUPPORTING COMPONENTS	REQ'D INTERCONNECTIONS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10) (11)	(12)	(13)	(14)	(15)	(16)	(17)	
5194	1	06	2-HV-P-20A	HV/CHILLED WATER PUMP	11715-FB-040A2/13	SB	254'	CHILLER RM	S R --	RUNNING	RUNNING	YES	N/A	N/A		
5201	2	06	2-HV-P-20B	HV/CHILLED WATER PUMP	11715-FB-040A2/13	SB	254'	CHILLER RM	S R --	RUNNING	RUNNING	YES	N/A	N/A		
5221	2	06	2-HV-P-20C	HV/CHILLED WATER PUMP	11715-FB-040A2/13/D5	SB	254'	CHILLER RM	S R --	OFF	RUNNING	YES	N/A	N/A		
5226C	1	06	2-HV-P-22A	HV/CR & RELAY ROOM WATER SYSTEM BOOSTER PUMP	11715-FB-040D2/13/E6	SB	254'	CHILLER RM 11/C	S R --	ON	ON	YES	N/A	N/A		
5226D	1	06	2-HV-P-22B	HV/CR & RELAY ROOM WATER SYSTEM BOOSTER PUMP	11715-FB-040D2/13/B6	SB	254'	CHILLER RM 12/C	S R --	ON	ON	YES	N/A	N/A		
5226E	2	06	2-HV-P-22C	HV/CR & RELAY ROOM WATER SYSTEM BOOSTER PUMP	11715-FB-040D2/13/D6	SB	254'	CHILLER RM 11/C	S R --	OFF	ON	YES	N/A	N/A		
4249	1	06	2-RH-P-1A	RH/RHR PUMP A	12050-FM-094A1/15/D7	CONTMT	231'	17.5	S R --	OFF	RUNNING	YES	N/A	N/A		
4252	2	06	2-RH-P-1B	RH/RHR PUMP B	12050-FM-094A1/15/D4	CONTMT	231'	2	S R --	OFF	RUNNING	YES	N/A	N/A		
7012	1	06	2-RS-P-1A	RS/INSIDE RECIRC SPRAY PUMP A	12050-FM-091A3/17/B7	CONTMT	217'	5	S R I	OFF	ON	YES	N/A	2-EE-SS-03		
7017	1	06	2-RS-P-1B	RS/INSIDE RECIRC SPRAY PUMP B	12050-FM-091A3/17/B4	CONTMT	217'	4	S R I	OFF	ON	YES	N/A	2-EE-SS-04		
7023	2	06	2-RS-P-2A	RS/OUTSIDE RECIRC SPRAY PUMP A	12050-FM-091A4/18/B4	SFGD	267'	PUMP CUBICLE	S R I	OFF	ON	YES	N/A	2-EE-SS-01		
7028	2	06	2-RS-P-2B	RS/OUTSIDE RECIRC SPRAY PUMP B	12050-FM-091A4/18/B3	SFGD	267'	PUMP CUBICLE	S R I	OFF	ON	YES	N/A	2-EE-SS-02		
7009	1	06	2-SI-P-1A	SI/LHSI PUMP A	12050-FM-096A1/20/C6	SFGD	255'	--	S R I	OFF	ON	YES	N/A	2-EE-SW-01		
7011	2	06	2-SI-P-1B	SI/LHSI PUMP B	12050-FM-096A1/20/C4	SFGD	255'	--	S R I	OFF	ON	YES	N/A	2-EE-SW-02		
5263	1	07	1-HV-TCV-155	HV/CHILLED WATER CONTROL VALVE	11715-FB-044C3/07/E8	SB	277'	10/D	S R --	OPEN	OPEN	NO	N/A	N/A		
5273	2	07	1-HV-TCV-164	HV/CHILLED WATER CONTROL VALVE	11715-FB-044C3/07/E8	SB	277'	10/D	S R --	OPEN	OPEN	NO	N/A	N/A		
5242	1	07	1-HV-TCV-166	HV/CHILLED WATER CONTROL VALVE	11715-FB-044C3/07/B7	SB	252'	12/D	S R --	OPEN	OPEN	NO	N/A	N/A		
5253	2	07	1-HV-TCV-167	HV/CHILLED WATER CONTROL VALVE	11715-FB-044C3/07/B7	SB	252'	12/D	S R --	OPEN	OPEN	NO	N/A	N/A		
7159	1	07	2-AS-FCV-200A	AS/AIR EJECTOR STM INLET CONTMT ISOL	12050-FM-072A2/19/E5	TB	279'	15/Z	S I	OPEN	CLOSED	NO	12050-AS-003	2-AS-SOV-200A		
7161	1	07	2-AS-FCV-200B	AS/AIR EJECTOR STM INLET CONTMT ISOL	12050-FM-072A2/19/E5	TB	279'	16/C	S I	OPEN	CLOSED	NO	12050-AS-004	2-AS-SOV-200B		
7107	1	07	2-BD-TV-200A	BD/SG BLOWDOWN CONTMT ISOL	12050-FM-098A2/16/C6	AUX	244'	11.5/K	S I	OPEN	CLOSED	NO	12050-BD-001/6	2-BD-SOV-200A		
7109	2	07	2-BD-TV-200B	BD/SG BLOWDOWN CONTMT ISOL	12050-FM-098A2/16/C5	CONTMT	241'	10	S I	OPEN	CLOSED	NO	12050-BD-002/8	2-BD-SOV-200B		
7111	1	07	2-BD-TV-200C	BD/SG BLOWDOWN CONTMT ISOL	12050-FM-098A3/18/C6	AUX	244'	12/J	S I	OPEN	CLOSED	NO	12050-BD-003/6	2-BD-SOV-200C		
7113	2	07	2-BD-TV-200D	BD/SG 1B BLOWDOWN CONTMT ISOL	12050-FM-098A3/18/C5	CONTMT	241'	10	S I	OPEN	CLOSED	NO	12050-BD-004/7	2-BD-SOV-200D		

NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

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 Sort Criteria: Class\_ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr./E'v	LOCATION Rm. or Row/Col.	SORT	NOTES	OP Normal	ST. Desired	POWER REQD?	SUPPORTING DWG. NO./REV.	SYS. & SUPPORTING COMPONENTS	REQ'D INTERCONNECTIONS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10) (11)	(12)	(13)	(14)	(15)	(16)	(17)	
7115	1	07	2-BD-TV-200E	BD/SG IC BLOWDOWN CONTMT ISOL	12050-FM-098A4/18/C6	AUX	244'	12/J	S I	OPEN	CLOSED	NO	12050-BD-005/6	2-BD-SOV-200E		
7117	2	07	2-BD-TV-200F	BD/SG IC BLOWDOWN CONTMT ISOL	12050-FM-098A4/18/C5	CONTMT	241'	9	S I	OPEN	CLOSED	NO	12050-BD-006/8	2-BD-SOV-200F		
7211	2	07	2-CC-TV-200A	CC/CC RETURN FROM COOLING COIL CONTMT ISOL	12050-FM-079B3/14/E3	AUX	244'	12/J	S I,35	OPEN	CLOSED	NO	12050-CC-050	2-CC-SOV-200A		
7213	2	07	2-CC-TV-200B	CC/CC RETURN FROM COOLING COIL CONTMT ISOL	12050-FM-079B3/14/D4	AUX	244'	12/J	S I	OPEN	CLOSED	NO	12050-CC-051/5	2-CC-SOV-200B		
7215	2	07	2-CC-TV-200C	CC/CC RETURN FROM COOLING COIL CONTMT ISOL	12050-FM-079B3/14/C4	AUX	244'	11.3/L	S I	OPEN	CLOSED	NO	12050-CC-052/5	2-CC-SOV-200C		
7217	1	07	2-CC-TV-201A	CC/THERMAL BARRIER DISCH CONTMT ISOL	12050-FM-079A1/19/D7	AUX	244'	11.4/K	S I	OPEN	CLOSED	NO	12050-CC-053/5	2-CC-SOV-201A		
7219	2	07	2-CC-TV-201B	CC/THERMAL BARRIER DISCH CONTMT ISOL	12050-FM-079A1/19/D6	CONTMT	249'	10.5	S I	OPEN	CLOSED	NO	12050-CC-054/6	2-CC-SOV-201B		
7221	1	07	2-CC-TV-202A	CC/RCP CC RETURN CONTMT ISOL	12050-FM-079A4/16/A5	AUX	244'	11.3/K	S I	OPEN	CLOSED	NO	12050-CC-055/5	2-CC-SOV-202A		
7223	2	07	2-CC-TV-202B	CC/RCP CC RETURN CONTMT ISOL	12050-FM-079A4/16/A3	CONTMT	250'	10.3	S I	OPEN	CLOSED	NO	12050-CC-058/6	2-CC-SOV-202B		
7225	1	07	2-CC-TV-202C	CC/RCP CC RETURN CONTMT ISOL	12050-FM-079A3/17/A5	AUX	244'	11.7/K	S I	OPEN	CLOSED	NO	12050-CC-056/5	2-CC-SOV-202C		
7227	2	07	2-CC-TV-202D	CC/RCP CC RETURN CONTMT ISOL	12050-FM-079A3/17/A3	CONTMT	249'	10.3	S I	OPEN	CLOSED	NO	12050-CC-059/5	2-CC-SOV-202D		
7229	1	07	2-CC-TV-202E	CC/RCP CC RETURN CONTMT ISOL	12050-FM-079A2/16/A5	AUX	251'	11.8/JK	S I	OPEN	CLOSED	NO	12050-CC-057/5	2-CC-SOV-202E		
7231	2	07	2-CC-TV-202F	CC/RCP CC RETURN CONTMT ISOL	12050-FM-079A2/16/A3	CONTMT	249'	10.1	S I	OPEN	CLOSED	NO	12050-CC-060/6	2-CC-SOV-202F		
5058	1	07	2-CC-TV-203A	CC/RHR HX OUTLET CONTMT ISOL	12050-FM-079B1/17/A7	AUX	252'	11/L	S I,27	OPEN	CLOSED	NO	12050-CC-061/5	2-CC-SOV-203A		
5058	1	07	2-CC-TV-203A	CC/RHR HX OUTLET CONTMT ISOL	12050-FM-079B1/17/A7	AUX	252'	11/L	-- A,27	OPEN	OPEN	NO	12050-CC-061/5	2-CG-SOV-203A		
5066	2	07	2-CC-TV-203B	CC/RHR HX OUTLET CONTMT ISOL	12050-FM-079B1/17/B7	AUX	252'	11/L	S I,27	OPEN	CLOSED	NO	12050-CC-062/5	2-CC-SOV-203B		
5066	1	07	2-CC-TV-203B	CC/RHR HX OUTLET CONTMT ISOL	12050-FM-079B1/17/B7	AUX	252'	11/L	-- A,27	OPEN	OPEN	NO	12050-CC-062/5	2-CC-SOV-203B		
7237	1, 2	07	2-CC-TV-204A	CC/RCP CC CONTMT ISOL	12050-FM-079A2/16/E8	AUX	254'	12/J	S I	OPEN	CLOSED	NO	12050-CC-063/4	2-CC-SOV-204A1 2-CC-SOV-204A2		
7241	1, 2	07	2-CC-TV-204B	CC/RCP CC CONTMT ISOL	12050-FM-079A3/17/E8	AUX	244'	12/J	S I	OPEN	CLOSED	NO	12050-CC-064/4	2-CC-SOV-204B1 2-CC-SOV-204B2		
7245	1, 2	07	2-CC-TV-204C	CC/RCP CC CONTMT ISOL	12050-FM-079A4/16/E8	AUX	244'	11.5/J	S I	OPEN	CLOSED	NO	12050-CC-065/4	2-CC-SOV-204C1 2-CC-SOV-204C2		
7249	1	07	2-CC-TV-205A	CC/CC RETURN FROM COOLING COIL CONTMT ISOL	12050-FM-079B3/14/E4	CONTMT	253'	10.5	S I	OPEN	CLOSED	NO	12050-CC-066/7	2-CC-SOV-205A		
7251	1	07	2-CC-TV-205B	CC/CC RETURN FROM COOLING COIL CONTMT ISOL	12050-FM-079B3/14/D4	CONTMT	250'	9.8	S I	OPEN	CLOSED	NO	12050-CC-067/6	2-CC-SOV-205B		

NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
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 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Fir. Elv	LOCATION Re. or Row/Col.	SCRT NOTES	OP Normal	ST Desired	POW? REQD?	SUPPORTING DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
7253	1	07	2-CC-TV-205C	CC/CC RETURN FROM COOLING COIL CONTMT ISOL	12050-FM-079B3/14/C4	CONTMT	251'	10.5	S	I	OPEN	CLOSED	NO	12050-CC-068/4	2-CC-SOV-205C	
1168	2	07	2-CH-FCV-2113A	CH/BAST TO VCT CONTROL	12050-FM-095B1/22/C3	AUX	278'	9.6/J	--	A,3	OPEN	OPEN	YES	12050-CH-017/9	2-CH-SOV-2113A1;2-CH-SOV-2113A2	
1168	2	07	2-CH-FCV-2113A	CH/BAST TO VCT CONTROL	12050-FM-095B1/21/C3	AUX	278'	9.6/J	S	1,3	OPEN	CLOSED	NO	12050-CH-017/9	2-CH-SOV-2113A1 2-CH-SOV-2113A2	
1080	1	07	2-CH-FCV-2122	CH/CHARGING FLOW TO REGEN HX	12050-FM-095C1/20/C4	AUX	245'	12/H	--	--	OPEN	OPEN	NO	12050-CH-001/6	2-CH-E/P-2122;2-CH-FT-2122	
1199	2	07	2-CH-HCV-2137	CH/EXCESS LETDOWN HX ISOL	12050-FM-095C1/20/C7	CONTMT	231'	12	--	28	CLOSED	CLOSED	NO	12050-CH-041/3	2-CH-E/P-HCV-2137	
1096	1	07	2-CH-HCV-2186	CH/CCP TO RCP SEAL INJECTION	12050-FM-095C2/14/F4	AUX	245'	9.8/L	--	--	OPEN	OPEN	NO	12050-CH-068/1	N/A	
1196	2	07	2-CH-HCV-2201	CH/EXCESS LETDOWN HX ISOL	12050-FM-095C1/20/C6	CONTMT	235'	13	--	28	CLOSED	CLOSED	NO	12050-CH-021/3	2-CH-SOV-2201	
1110	1, 2	07	2-CH-HCV-2303A	CH/SEAL LEAKOFF ISOL RCP-1	12050-FM-095C2/14/E8	CONTMT	221'	12	--	21	OPEN	OPEN	NO	12050-CH-065/3	N/A	
1111	1, 2	07	2-CH-HCV-2303B	CH/SEAL LEAKOFF ISOL RCP-2	12050-FM-095C2/14/E6	CONTMT	217'	8.1	--	21	OPEN	OPEN	NO	12050-CH-066/4	N/A	
1112	1, 2	07	2-CH-HCV-2303C	CH/SEAL LEAKOFF ISOL RCP-3	12050-FM-095C2/14/E5	CONTMT	221'	3.8	--	21	OPEN	OPEN	NO	12050-CH-067/3	N/A	
1122	2	07	2-CH-HCV-2307	CH/SEAL BYPASS OUTLET ISOL	12050-FM-095C2/14/E4	CONTMT	248' A	9.2	--	--	CLOSED	CLOSED	NO	12050-FK-1D;12050-CH-044/4	2-CH-SOV-2307	
1089	1	07	2-CH-HCV-2310	CH/CHARGING TO LOOP 2 ISOL	12050-FM-095C1/20/F6	CONTMT	222'	6.8	--	--	OPEN	OPEN	NO	N/A	2-CH-SOV-2310	
2006	1, 2	07	2-CH-HCV-2311	CH/AUX SPRAY ISOL	12050-FM-095C1/20/E6	CONTMT	219'	7	--	28	CLOSED	CLOSED	NO	12050-CH-003/4	2-CH-SOV-2311	
1205	2	07	2-CH-HCV-2389	CH/EXCESS LETDOWN FLOW DIRECTING	12050-FM-095C1/20/C6	CONTMT	233'	13	--	--	VCT	VCT	NO	12050-CH-046/3	2-CH-SOV-2389	
7131	1	07	2-CH-TV-2204A	CH/LETDOWN LINE CONTMT ISOL	12050-FM-095C1/20/E3	CONTMT	241'	9	--	I	CLOSED	CLOSED	NO	11715-CH-100/1	2-CH-SOV-2204A	
7132	2	07	2-CH-TV-2204B	CH/LETDOWN LINE CONTMT ISOL	12050-FM-095A2/12/B3	AUX	245'	12/J	S	I	OPEN	CLOSED	NO	12050-CH-070/6	2-CH-SOV-2204B	
7139	1	07	2-CV-TV-250A	CV/ATMOS CLEANUP CONTMT ISOL	12050-FM-092A2/14/B4	AUX	244'	12/J	S	I	OPEN	CLOSED	NO	12050-CV-002/5	2-CV-SOV-250A	
7141	2	07	2-CV-TV-250B	CV/ATMOS CLEANUP CONTMT ISOL	12050-FM-092A2/14/B5	AUX	244'	12/J	S	I	OPEN	CLOSED	NO	12050-CV-003/6	2-CV-SOV-250B	
7143	1	07	2-CV-TV-250C	CV/ATMOS CLEANUP CONTMT ISOL	12050-FM-092A2/14/B4	AUX	244'	12/J	S	I	OPEN	CLOSED	NO	12050-CV-004/5	2-CV-SOV-250C	
7145	2	07	2-CV-TV-250D	CV/ATMOS CLEANUP CONTMT ISOL	12050-FM-092A2/14/C5	AUX	244'	12/J	S	I	OPEN	CLOSED	NO	12050-CV-005/5	2-CV-SOV-250D	
7147	1	07	2-DA-TV-200A	DA/SUMP DISCH CONTMT ISOL	12050-FM-090A1/15/E7	AUX	244'	12/J	--	I	CLOSED	CLOSED	NO	N/A	2-DA-SOV-200A	
7149	2	07	2-DA-TV-200B	DA/SUMP DISCH CONTMT ISOL	12050-FM-090C3/16/C3	CONTMT	253'	9	--	I	CLOSED	CLOSED	NO	12050-DA-004/6	2-DA-SOV-200B	
7151	1	07	2-DG-TV-200A	DG/PRIMARY DRAIN XFER CONTMT ISOL	12050-FM-090C1/17/B8	AUX	248'	11/K	--	I	CLOSED	CLOSED	NO	12050-DG-006/6	2-DG-SOV-200A	
7153	2	07	2-DG-TV-200B	DG/PRIMARY DRAIN XFER CONTMT ISOL	12050-FM-090C1/17/B7	CONTMT	253'	10.5	--	I	CLOSED	CLOSED	NO	12050-DG-005/5	2-DG-SOV-200B	

NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

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(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	
4210A	07	2-FW-FCV-2478	A MAIN FEED REG VALVE		SB	286'	12/D	S	R	OPEN	CLOSED					
4211A	07	2-FW-FCV-2479	A MAIN FEED REG BYPASS VALVE		SB	286'	12/D	S	R 45	CLOSED	CLOSED					
4210B	07	2-FW-FCV-2488	B MAIN FEED REG VALVE		SB	286'	12/D	S	R	OPEN	CLOSED					
4211B	07	2-FW-FCV-2489	B MAIN FEED REG BYPASS VALVE		SB	286'	12/D	S	R 45	CLOSED	CLOSED					
4210C	07	2-FW-FCV-2498	C MAIN FEED REG VALVE		SB	286'	12/D	S	R	OPEN	CLOSED					
4211C	07	2-FW-FCV-2499	C MAIN FEED REG BYPASS VALVE		SB	286'	12/D	S	R 45	CLOSED	CLOSED					
4172	1	07	2-FW-HCV-200A	FW/AFWP HEADER TO SG A	12050-FM-074A1/27/A5	AFPH	275'	--	S	--	CLOSED	OPEN	NO	12050-FW-055/4	N/A	
4169	2	07	2-FW-HCV-200B	FW/AFWP HEADER TO SG B	12050-FM-074A1/27/A6	AFPH	275'	--	S	--	CLOSED	OPEN	NO	12050-FW-056/4	N/A	
4163	2	07	2-FW-HCV-200C	FW/AFWP HEADER TO SG C	12050-FM-074A1/27/A7	AFPH	275'	--	--	--	OPEN	OPEN	NO	12050-FW-057/6	N/A	
4147	2	07	2-FW-PCV-259A	FW/AFWP TO SG B CONTROL VALVE	12050-FM-074A3/29/FB	AFPH	274'	--	S	--	OPEN	OPEN	NO	12050-FW-053/5	N/A	
4152	2	07	2-FW-PCV-259B	FW/AFWP TO SG C CONTROL VALVE	12050-FM-074A3/29/EB	AFPH	274'	--	S	--	OPEN	OPEN	NO	12050-FW-054/5	N/A	
2038	2	07	2-GN-PCV-225A-1	GN/PZR PORV N2 SUPPLY PRESSURE REDUCING VALVE	11715-FM-105A1/20/B4	CONTMT	308'	5.1	S	--	OPEN	OPEN	NO	N/A	N/A	
2039	2	07	2-GN-PCV-225A-2	GN/PZR PORV N2 SUPPLY PRESSURE REDUCING VALVE	11715-FM-105A1/20/B4	CONTMT	308'	5.1	S	--	OPEN	OPEN	NO	N/A	N/A	
2035	2	07	2-GN-PCV-225A-3	GN/PZR PORV N2 SUPPLY PRESSURE REDUCING VALVE	11715-FM-105A1/20/C4	CONTMT	308'	5	S	--	OPEN	OPEN	NO	N/A	N/A	
2036	1	07	2-GN-PCV-225B-1	GN/PZR PORV N2 SUPPLY PRESSURE REDUCING VALVE	11715-FM-105A1/20/B6	CONTMT	308'	5	S	--	OPEN	OPEN	NO	N/A	N/A	
2037	1	07	2-GN-PCV-225B-2	GN/PZR PORV N2 SUPPLY PRESSURE REDUCING VALVE	11715-FM-105A1/20/B6	CONTMT	308'	5	S	--	OPEN	OPEN	NO	N/A	N/A	
2034	1	07	2-GN-PCV-225B-3	GN/PZR PORV N2 SUPPLY PRESSURE REDUCING VALVE	11715-FM-105A1/20/C6	CONTMT	308'	5	S	--	OPEN	OPEN	NO	N/A	N/A	
1239	1, 2	07	2-HRS-TV-1617	HRS/RC COLD LEG SAMPLE COOLER ISOL	12050-FM-089B1/17/D4	AUX	259'	10.5/L	S	24	CLOSED	OPEN	NO	12050-HRS-005/3	2-HRS-SOV-1617	
1225	1, 2	07	2-HRS-TV-1619	HRS/HOT LEG SAMPLE COOLER INLET ISOL	12050-FM-089B1/17/E6	AUX	259'	10.5/JK	S	24	CLOSED	OPEN	NO	12050-HRS-007/3	2-HRS-SOV-1619	
4271	1, 2	07	2-HRS-TV-1621	HRS/SAMPLING SYSTEM ISOL	12050-FM-089B1/17/F4	AUX	259'	10.5/L	S	24	CLOSED	OPEN	NO	N/A	2-HRS-SOV-1621	
4269	1, 2	07	2-HRS-TV-1622	SS/SAMPLING SYSTEM ISOL	11715-FM-108A1/03/E5	AUX	259'	--	--	--	CLOSED	CLOSED	NO	N/A	N/A	
5226J	1	07	2-HV-PCV-2235A2	HV/CR & RR WATER SYSTEM FLOW CONTROL	11715-FB-040D2/13/E3	SB	254'	CHILLER RM	--	--	OPEN	OPEN	NO	12050-HV-015/2	N/A	



NORTH AHA UNIT 2  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
COMPOSITE SSEL  
(Sorted by Equipment Class and Mark Number)

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Sort Criteria: Class, ID Number  
Filter Criteria: <none>  
Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQD?	SUPPORTING SYS. DWG. NO./REV.	REQ'D & SUPPORTING COMPONENTS	INTERCONNECTIONS	REG. ISSUE
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(17)
5226K	1	07	2-HV-PCV-2235B2	HV/CR & RR WATER SYSTEM FLOW CONTROL	11715-FB-040D2/13/B3 SB	254'	CHILLER RM	--	--	OPEN	OPEN	NO	12050-HV-016/2	N/A		
5226L	2	07	2-HV-PCV-2235C2	HV/CR & RR WATER SYSTEM FLOW CONTROL	11715-FB-040D2/13/D3 SB	254'	CHILLER RM	--	--	OPEN	OPEN	NO	12050-HV-017/2	N/A		
5264	1	07	2-HV-TCV-255	HV/CHILLED WATER CONTROL VALVE	11715-FB-044C3/07/E8 SB	277'	10/D	S	R --	OPEN	OPEN	NO	N/A	N/A		
5274	2	07	2-HV-TCV-264	HV/CHILLED WATER CONTROL VALVE	11715-FB-044C3/07/E8 SB	277'	10/D	S	R --	OPEN	OPEN	NO	N/A	N/A		
5243	1	07	2-HV-TCV-266	HV/CHILLED WATER CONTROL VALVE	11715-FB-044C3/07/B7 SB	252'	12/D	S	R --	OPEN	OPEN	NO	N/A	N/A		
5254	2	07	2-HV-TCV-267	HV/CHILLED WATER CONTROL VALVE	11715-FB-044C3/07/B7 SB	252'	12/D	S	R --	OPEN	OPEN	NO	N/A	N/A		
7255	1	07	2-IA-TV-202A	IA/INSTR AIR HEADER CONTMT ISOL	12050-FM-082N1/09/D7 AUX	244'	12/J	--	I	CLOSED	CLOSED	NO	12050-IA-013/6	2-IA-SOV-202A		
7257	2	07	2-IA-TV-202B	IA/INSTR AIR HEADER CONTMT ISOL	12050-FM-082N1/09/D7 AUX	244'	12/J	--	I	CLOSED	CLOSED	NO	12050-IA-014/5	2-IA-SOV-202B		
7163	1	07	2-LM-TV-200A	LM/LEAKAGE MONITORING CONTMT ISOL	12050-FM-092A1/15/E7 AUX	259'	11.5/J	S	I	OPEN	CLOSED	NO	12050-LM-001/6	2-LM-SOV-200A		
7165	2	07	2-LM-TV-200B	LM/LEAKAGE MONITORING CONTMT ISOL	12050-FM-092A1/15/E6 AUX	259'	11.5/J	S	I	OPEN	CLOSED	NO	12050-LM-002/6	2-LM-SOV-200B		
7167	1	07	2-LM-TV-200C	LM/LEAKAGE MONITORING CONTMT ISOL	12050-FM-092A1/15/E6 AUX	259'	12/JK	S	I	OPEN	CLOSED	NO	12050-LM-003/6	2-LM-SOV-200C		
7169	2	07	2-LM-TV-200D	LM/LEAKAGE MONITORING CONTMT ISOL	12050-FM-092A1/15/E5 AUX	259'	11.5/K	S	I	OPEN	CLOSED	NO	12050-LM-004/6	2-LM-SOV-200D		
7171	1	07	2-LM-TV-200E	LM/LEAKAGE MONITORING CONTMT ISOL	12050-FM-092A1/15/F6 AUX	259'	11.5/J	S	I	OPEN	CLOSED	NO	12050-LM-005/6	2-LM-SOV-200E		
7173	2	07	2-LM-TV-200F	LM/LEAKAGE MONITORING CONTMT ISOL	12050-FM-092A1/15/F5 AUX	259'	11.5/J	S	I	OPEN	CLOSED	NO	12050-LM-006/6	2-LM-SOV-200F		
7175	1	07	2-LM-TV-200G	LM/LEAKAGE MONITORING CONTMT ISOL	12050-FM-092A1/15/E7 AUX	259'	12/J	S	I	OPEN	CLOSED	NO	12050-LM-007/6	2-LM-SOV-200G		
7177	2	07	2-LM-TV-200H	LM/LEAKAGE MONITORING CONTMT ISOL	12050-FM-092A1/15/E6 AUX	259'	12/J	S	I	OPEN	CLOSED	NO	12050-LM-008/6	2-LM-SOV-200H		
7179	1	07	2-LM-TV-201A	LM/PRESS SENSOR CONTMT ISOL	12050-FM-092A1/15/D5 AUX	244'	11/J	S	I	OPEN	CLOSED	NO	12050-LM-017/7	2-LM-SOV-201A		
7181	2	07	2-LM-TV-201B	LM/PRESS SENSOR CONTMT ISOL	12050-FM-092A1/15/D5 AUX	246'	11/J	S	I	OPEN	CLOSED	NO	12050-LM-018/7	2-LM-SOV-201B		
7183	1	07	2-LM-TV-201C	LM/PRESS SENSOR CONTMT ISOL	12050-FM-092A1/15/D5 AUX	244'	11/J	S	I	OPEN	CLOSED	NO	12050-LM-017/7	2-LM-SOV-201C		
7185	2	07	2-LM-TV-201D	LM/PRESS SENSOR CONTMT ISOL	12050-FM-092A1/15/D4 AUX	246'	11/J	S	I	OPEN	CLOSED	NO	12050-LM-018/7	2-LM-SOV-201D		
4014	1	07	2-MS-PCV-201A	MS/SG A ATMOSPHERIC STEAM DUMP VALVE	12050-FM-070B1/18/E5 MSVH	309'	--	S	R 25	CLOSED	OPEN	NO	12050-MS-231/2; 12050-MS-053/7	INST AIR		
4042	2	07	2-MS-PCV-201B	MS/SG B ATMOSPHERIC STEAM DUMP VALVE	12050-FM-070B2/20/E6 MSVH	309'	13/GB	S	R 25	CLOSED	OPEN	NO	12050-MS-232/2; 12050-MS-054/7	INST AIR		
4070	3	07	2-MS-PCV-201C	MS/SG C ATMOSPHERIC STEAM DUMP VALVE	12050-FM-070B3/19/E5 MSVH	309'	13.3/GA	S	R 25	CLOSED	OPEN	NO	12050-MS-233/2	INST AIR		
4009	1	07	2-MS-SV-201A	MS/SG A SAFETY VALVE	12050-FM-070B1/18/E6 MSVH	321.5'	12	S	I,8	CLOSED	CLOSED	NO	12050-MS-219/2	N/A		

NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
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 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	TRAIN	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	Normal	OP. ST. Desired	POWER REQD?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
4037	2	07	2-MS-SV-201B	MS/SG B SAFETY VALVE	12050-FM-070B2/20/D6	MSVH	321.5'	13	S	1,8	CLOSED	CLOSED	NO	12050-MS-220/2	N/A	
4065	3	07	2-MS-SV-201C	MS/SG C SAFETY VALVE	12050-FM-070B3/19/D6	MSVH	307'	13/GB	S	1,8	CLOSED	CLOSED	NO	12050-MS-221/2	N/A	
4010	1	07	2-MS-SV-202A	MS/SG A SAFETY VALVE	12050-FM-070B1/18/E5	MSVH	321.5'	12	S	1,8	CLOSED	CLOSED	NO	12050-MS-222/2	N/A	
4038	2	07	2-MS-SV-202B	MS/SG B SAFETY VALVE	12050-FM-070B2/20/D5	MSVH	321.5'	13	S	1,8	CLOSED	CLOSED	NO	12050-MS-223/2	N/A	
4066	3	07	2-MS-SV-202C	MS/SG C SAFETY VALVE	12050-FM-070B3/19/D6	MSVH	307'	13/GB	S	1,8	CLOSED	CLOSED	NO	12050-MS-224/2	N/A	
4011	1	07	2-MS-SV-203A	MS/SG A SAFETY VALVE	12050-FM-070B1//E6	MSVH	321.5'	12	S	1,8	CLOSED	CLOSED	NO	N/A	N/A	
4039	2	07	2-MS-SV-203B	MS/SG B SAFETY VALVE	12050-FM-070B2/20/D6	MSVH	321.5'	13	S	1,8	CLOSED	CLOSED	NO	N/A	N/A	
4067	3	07	2-MS-SV-203C	MS/SG C SAFETY VALVE	12050-FM-070B3/19/D6	MSVH	321.5'	13	S	1,8	CLOSED	CLOSED	NO	N/A	N/A	
4012	1	07	2-MS-SV-204A	MS/SG A SAFETY VALVE	12050-FM-070B1/18/E6	MSVH	321.5'	12/GB	S	1,8	CLOSED	CLOSED	NO	12050-MS-225/2	N/A	
4040	2	07	2-MS-SV-204B	MS/SG B SAFETY VALVE	12050-FM-070B2/20/D6	MSVH	321.5'	13	S	1,8	CLOSED	CLOSED	NO	12050-MS-226/2	N/A	
4068	3	07	2-MS-SV-204C	MS/SG C SAFETY VALVE	12050-FM-070B3/19/D6	MSVH	321.5'	13	S	1,8	CLOSED	CLOSED	NO	12050-MS-227/2	N/A	
4013	1	07	2-MS-SV-205A	MS/SG A SAFETY VALVE	12050-FM-070B1/18/E5	MSVH	321.5'	12	S	1,8	CLOSED	CLOSED	NO	12050-MS-228/2	N/A	
4041	2	07	2-MS-SV-205B	MS/SG B SAFETY VALVE	12050-FM-070B2/20/D5	MSVH	321.5'	13	S	1,8	CLOSED	CLOSED	NO	12050-MS-229/2	N/A	
4069	3	07	2-MS-SV-205C	MS/SG C SAFETY VALVE	12050-FM-070B3/19/D5	MSVH	321.5'	13	S	1,8	CLOSED	CLOSED	NO	12050-MS-230/2	N/A	
4017	1, 2	07	2-MS-TV-201A	MS/SG A MSIV	12050-FM-070B1/18/C4	MSVH	285'	--	S	--	OPEN	CLOSED	YES	12050-MS-206/6	2-MS-SOV-201A1,2,3,4,5,6,7	
4045	1, 2	07	2-MS-TV-201B	MS/SG B MSIV	12050-FM-070B2/20/C4	MSVH	285'	13.3/GB	S	--	OPEN	CLOSED	YES	12050-MS-207/6	2-MS-SOV-201B1,2,3,4,5,6,7	
4073	1, 2	07	2-MS-TV-201C	MS/SG C MSIV	12050-FM-070B3/19/C4	MSVH	285'	13.5/GB	S	--	OPEN	CLOSED	YES	12050-MS-208/6	2-MS-SOV-201C1,2,3,4,5,6,7	
7101	1	07	2-MS-TV-209	MS/STEAM DRAIN CONTHT ISOL	12050-FM-070A3/20/D3	MSVH	273'	13/GB	S	1	OPEN	CLOSED	NO	12050-MS-209/6	2-MS-SOV-209A 2-MS-SOV-209B	
7104	1	07	2-MS-TV-210	MS/SG BLOWDOWN CONTHT ISOL	12050-FM-070B3/19/A4	MSVH	271'	12.7/HA	S	1	OPEN	CLOSED	NO	12050-MS-210/2	2-MS-SOV-210A 2-MS-SOV-210B	
4086	1	07	2-MS-TV-211A	MS/TDAFW STEAM ADMISSION	12050-FM-070A3/22/E5	MSVH	274'	13.3/GA	S	--	CLOSED	OPEN	NO	12050-MS-211/8	N/A	
4088	2	07	2-MS-TV-211B	MS/TDAFW STEAM ADMISSION	12050-FM-070A3/22/E4	MSVH	274'	13.3/GA	S	--	CLOSED	OPEN	NO	12050-MS-212/8	N/A	
4102	1, 2	07	2-MS-TV-215	MS/TDAFW TRIP VALVE	12050-FM-070A3/22/C4	AFWPH	274'	13.2/GA	S	--	OPEN	OPEN	NO	12050-MS-213/5	N/A	
5086	1	07	2-MS-LCV-201	MS/NEUTRON SHIELD SURGE TANK OUTLET ISOL	12050-FM-079A5/17/D3	CONTMT	--	--	--	--	CLOSED	CLOSED	NO	N/A	N/A	
1190	2	07	2-RC-HCV-2557A	RC/RC XS LETDOWN ISOL	12050-FM-093A1/24/E7	CONTMT	244'	14.2	--	2B	CLOSED	CLOSED	NO	12050-RC-051/3	2-RC-SOV-2557A	

NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
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LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1192	2	07	2-RC-HCV-2557B	RC/RC XS LETDOWN ISOL	12050-FM-093A2/24/F7	CONTMT	244'	8 J	--	28	CLOSED	CLOSED	NO	12050-RC-052/3	2-RC-SOV-2557B	
1194	2	07	2-RC-HCV-2557C	RC/RC XS LETDOWN ISOL	12050-FM-093A3/26/F3	CONTMT	244'	4	--	28	CLOSED	CLOSED	NO	12050-RC-053/3	2-RC-SOV-2557C	
2020	2	07	2-RC-PCV-2455C	RC/PZR PORV	12050-FM-093B1/25/D3	CONTMT	308'	5	S	--	CLOSED	OP/CL	NO	12050-RC-108/8	2-GN-SOV-2455C-1/2/3	
2029	2	07	2-RC-PCV-2456	RC/PZR PORV	12050-FM-093B1/25/E3	CONTMT	308'	5.1	S	--	CLOSED	OP/CL	NO	12050-RC-106/6	2-GN-SOV-2456-1/2/3	
2007B	1, 2	07	2-RC-SV-2551A	RC/PRESSURIZER SAFETY VALVE A	12050-FM-093B1/25/E5	CONTMT	316'	9.5	S	1,5	CLOSED	CLOSED	NO	N/A	N/A	
2007C	1, 2	07	2-RC-SV-2551B	RC/PRESSURIZER SAFETY VALVE B	12050-FM-093B1/25/E5	CONTMT	316'	9.5	S	1,5	CLOSED	CLOSED	NO	N/A	N/A	
2007D	1, 2	07	2-RC-SV-2551C	RC/PRESSURIZER SAFETY VALVE C	12050-FM-093B1/25/E6	CONTMT	316'	9.5	S	1,5	CLOSED	CLOSED	NO	N/A	N/A	
7137	1	07	2-RC-TV-2519A	RC/PRT PW FILL CONTMT ISOL	12050-FM-093B2/26/D8	AUX	247'	11.8/J	--	1	CLOSED	CLOSED	NO	12050-RC-036/6	2-RC-SOV-2519A	
4262	2	07	2-RH-FCV-2605	RH/RHR HX BYPASS	12050-FM-094A2/14/C7	CONTMT	217'	1.5	S	--	CLOSED	CLOSED	NO	N/A	RACK 2-102	
4260	1, 2	07	2-RH-HCV-2758	RH/RHR HX OUTLET	12050-FM-094A2/14/C7	CONTMT	227'	2	S R	--	OPEN	OP/CL	YES	N/A	N/A	
7187	1	07	2-RM-TV-200A	RM/RADIATION MONITORING RETURN CONTMT ISOL	12050-FM-082B2/09/C7	AUX	244'	11.5/JK	S	1	OPEN	CLOSED	NO	12050-RM-018/5	2-RM-SOV-200A	
7189	1	07	2-RM-TV-200B	RM/RADIATION MONITORING CONTMT ISOL	12050-FM-082B2/09/D7	AUX	244'	12/J	S	1	OPEN	CLOSED	NO	12050-RM-019/5	2-RM-SOV-200B	
7191	2	07	2-RM-TV-200C	RM/RADIATION MONITORING CONTMT ISOL	12050-FM-082B2/09/D8	CONTMT	259'	6	S	1	OPEN	CLOSED	NO	12050-RM-020/6	2-RM-SOV-200C	
7192	2	07	2-RM-TV-200D	RM/RADIATION MONITORING RETURN CONTMT ISOL	12050-FM-082B2/09/C7	AUX	245'	11.5/J	S	1	OPEN	CLOSED	NO	12050-RM-021/5	2-RM-SOV-200D	
2046	1, 2	07	2-SI-HCV-2850B	SI/ACCUM TEST ISOL	12050-FM-096B1/19/A6	CONTMT	221'	14.5	--	21,19	CLOSED	CLOSED	NO	12050-SI-022/2	N/A	
4276	1, 2	07	2-SI-HCV-2850D	SI/ACCUM TEST ISOL	12050-FM-096B2/16/B5	CONTMT	221'	8.8	--	22	CLOSED	CLOSED	NO	12050-SI-024/2	N/A	
4279	1, 2	07	2-SI-HCV-2850F	SI/ACCUM TEST ISOL	12050-FM-096B3/17/B5	CONTMT	221'	4	--	22	CLOSED	CLOSED	NO	12050-SI-026/2	N/A	
7127	2	07	2-SI-HCV-2936	SI/WASTE GAS FLTR RETURN CONTMT ISOL	12050-FM-096B1/17/E5	CONTMT	248'	11	--	1	CLOSED	CLOSED	NO	12050-SI-014/5	2-SI-SOV-2936	
7119	1	07	2-SI-TV-200	SI/NITROGEN HEADER CONTMT ISOL	12050-FM-096B1/17/F3	AUX	246'	11/K	S	1	OPEN	CLOSED	NO	12050-SI-034/4	2-SI-SOV-200A 2-SI-SOV-200B	
7122	1	07	2-SI-TV-201	SI/WASTE GAS FILTER CONTMT ISOL	12050-FM-096B1/17/E4	AUX	244'	11/K	S	1	OPEN	CLOSED	NO	12050-SI-013/3	2-SI-SOV-201	
7129	2	07	2-SI-TV-2842	SI/ACCUM TEST LINE CONTMT ISOL	12050-FM-096B1/17/D4	CONTMT	241'	5	--	1	CLOSED	CLOSED	NO	12050-SI-033/5	2-SI-SOV-2842	
7125	1	07	2-SI-TV-2859	SI/ACCUM TEST LINE CONTMT ISOL	12050-FM-096A2/24/F7	SFGD	267'	--	--	1	CLOSED	CLOSED	NO	12050-SI-035/4	2-SI-SOV-2859	
7193	1	07	2-SS-TV-200A	SS/PZR LIQUID SAMPLING CONTMT ISOL	12050-FM-089B1/17/F6	CONTMT	253'	9.5	--	1	CLOSED	CLOSED	NO	12050-SS-001/6	2-SS-SOV-200A	
7195	2	07	2-SS-TV-200B	SS/PZR LIQUID SAMPLING CONTMT ISOL	12050-FM-089B1/17/F5	AUX	249'	11.5/JK	--	1	CLOSED	CLOSED	NO	12050-SS-002/6	2-SS-SOV-200B	

NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
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(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	
7200A	1	07	2-SS-TV-201A	SS/PRESSURIZER VAPOR SAMPLE CONTMT ISOL	12050-FM-089B1/17/E7	CONTMT	253'	9	--	I	CLOSED	CLOSED	NO	N/A	N/A	
7200C	2	07	2-SS-TV-201B	SS/PRESSURIZER VAPOR SAMPLE CONTMT ISOL	12050-FM-089B1/17/E6	AUX	249'	11.5/JK	--	I	CLOSED	CLOSED	NO	N/A	N/A	
7197	1	07	2-SS-TV-204A	SS/PZR RLF TK GAS SAMPLING CONTMT ISOL	12050-FM-089B1/17/D6	CONTMT	253'	9	--	I	CLOSED	CLOSED	NO	12050-SS-008/6	2-SS-SOV-204A	
7199	2	07	2-SS-TV-204B	SS/PZR RLF TK GAS SAMPLING CONTMT ISOL	12050-FM-089B1/17/D5	AUX	249'	11.5/JK	--	I	CLOSED	CLOSED	NO	12050-SS-009/7	2-SS-SOV-204B	
7201	1	07	2-SS-TV-212A	SS/SG SURFACE SAMPLE CONTMT ISOL	12050-FM-089B3/17/D3	CONTMT	253'	9.5	--	I	CLOSED	CLOSED	NO	12050-SS-027/7	2-SS-SOV-212A	
7203	2	07	2-SS-TV-212B	SS/SG SURFACE SAMPLE CONTMT ISOL	12050-FM-089B1/17/C3	AUX	248'	11.5/JK	--	I	CLOSED	CLOSED	NO	12050-SS-028/5	2-SS-SOV-212B	
7205	1	07	2-SV-TV-202-1A	SV/AIR EJECTOR DISCH CONTMT ISOL	12050-FM-072A2/19/C3	MSVH	272'	13.3/HA	--	I	CLOSED	CLOSED	NO	12050-SV-010	2-SV-SOV-202-1A	
7207	1	07	2-SV-TV-202-2	SV/AIR EJECTOR DISCH CONTMT ISOL	12050-FM-072A2/19/B3	TB	279'	16/C	--	I	CLOSED	CLOSED	NO	12050-SV-009	2-SV-SOV-202-2	
7209	2	07	2-SV-TV-203	SV/RADIATION MONITORING RETURN CONTMT ISOL	12050-FM-072A2/17/D3	MSVH	272'	13.3/HA	--	I	CLOSED	CLOSED	NO	12050-SV-011/6	2-SV-SOV-203	
7155	1	07	2-VG-TV-200A	VG/PRIMARY VENT HDR CONTMT ISOL	12050-FM-090C1/17/F3	AUX	244'	12/J	S	I	OPEN	CLOSED	NO	12050-VG-001/4	2-VG-SOV-200A	
7157	2	07	2-VG-TV-200B	VG/PRIMARY VENT HDR CONTMT ISOL	12050-FM-090C1/17/D3	CONTMT	251'	10	S	I	OPEN	CLOSED	NO	12050-VG-002/6	2-VG-SOV-200B	
5057	1	08A	2-CC-MOV-200A	CC/RHR HX OUTLET CONTROL VALVE	12050-FM-079A1/19/B3	CONTMT	234'	14.2	S	R	17	CLOSED	OPEN	YES	N/A	N/A
5065	1	08A	2-CC-MOV-200B	CC/RHR HX OUTLET CONTROL VALVE	12050-FM-079A1/19/A3	CONTMT	230'	14.2	S	R	17	CLOSED	OPEN	YES	N/A	N/A
3049	2	08A	2-CH-MOV-2115B	CH/RWST TO CCP INLET ISOL	12050-FM-095B2/25/B8	AUX	244'	10.6/JK	S	R	--	CLOSED	OPEN	YES	11715-FP-11P	N/A
1058	1	08A	2-CH-MOV-2115C	CH/VCT OUTLET TO CHARGING PUMPS	12050-FM-095B1/22/C6	AUX	274'	9.5/JK	R	--	OPEN	OPEN	NO	11715-FP-11F	2-CH-LT-2112	
3048	1	08A	2-CH-MOV-2115D	CH/RWST TO CCP INLET ISOL	12050-FM-095B2/25/B8	AUX	244'	10.6/JK	S	R	--	CLOSED	OPEN	YES	N/A	N/A
1059	1	08A	2-CH-MOV-2115E	CH/VCT OUTLET TO CHARGING PUMPS	12050-FM-095B1/22/C6	AUX	274'	9.5/JK	R	--	OPEN	OPEN	NO	11715-FP-11F	2-CH-LT-2112	
1060	1	08A	2-CH-MOV-2267A	CH/CHARGING PUMP A INLET ISOL	12050-FM-095B2/25/C3	AUX	244'	9/J	R	--	OPEN	OPEN	NO	EC-CH-10A	N/A	
7010	1	08A	2-CH-MOV-2267B	CH/LHSI TO CHARGING PUMP SUCTION XCONN	12050-FM-095B2/25/C3	AUX	244'	10/J	R	I	OPEN	OPEN	NO	N/A	2-EP-MC-22	
1061	2	08A	2-CH-MOV-2269A	CH/CHARGING PUMP B INLET ISOL	12050-FM-095B2/25/C5	AUX	244'	9.5/J	R	--	OPEN	OPEN	NO	EC-CH-10A	N/A	
1062	3	08A	2-CH-MOV-2270A	CH/CHARGING PUMP C INLET ISOL	12050-FM-095B2/25/C7	AUX	244'	10/J	R	--	OPEN	OPEN	NO	EC-CH-10A	N/A	
1067	1	08A	2-CH-MOV-2275A	CH/CCP A TO SEAL WATER HX HEADER	12050-FM-095B2/25/D3	AUX	244'	9.2/K	R	--	OPEN	OPEN	NO	EC-CH-3B	N/A	
1068	2	08A	2-CH-MOV-2275B	CH/CCP B TO SEAL WATER HX HEADER	12050-FM-095B2/25/D5	AUX	244'	9.5/J	R	--	OPEN	OPEN	NO	EC-CH-3B	N/A	
1069	3	08A	2-CH-MOV-2275C	CH/CCP C TO SEAL WATER HX HEADER	12050-FM-095B2/25/D7	AUX	244'	10/J	R	--	OPEN	OPEN	NO	EC-CH-3A	N/A	

NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA2\_SSEL.DBF / 05/20/97 / 13:04:12  
 Sort Criteria: Class, ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. Dwg. No./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1070	1	08A	2-CH-MOV-2286A	CH/CCP A TO BIT & REGEN HX	12050-FM-095B2/25/E4	AUX	244'	9/J	R	--	OPEN	OPEN	NO	EC-CH-5A	N/A
1071	2	08A	2-CH-MOV-2286B	CH/CCP B TO BIT & REGEN HX	12050-FM-095B2/25/E6	AUX	244'	9.5/J	R	--	OPEN	OPEN	NO	EC-CH-5A	N/A
1072	3	08A	2-CH-MOV-2286C	CH/CCP C TO BIT & REGEN HX	12050-FM-095B2/25/E8	AUX	244'	10/J	R	--	OPEN	OPEN	NO	EC-CH-5A	N/A
1073	1	08A	2-CH-MOV-2287A	CH/CCP A TO LOOP FILL	12050-FM-095B2/25/E4	AUX	244'	9/J	R	--	OPEN	OPEN	NO	EC-CH-7A	N/A
1074	2	08A	2-CH-MOV-2287B	CH/CCP B TO LOOP FILL	12050-FM-095B2/25/E6	AUX	244'	9.5/J	R	--	OPEN	OPEN	NO	EC-CH-7A	N/A
1075	3	08A	2-CH-MOV-2287C	CH/CCP C TO LOOP FILL	12050-FM-095B2/25/E8	AUX	244'	10/J	R	--	OPEN	OPEN	NO	EC-CH-7A	N/A
1086	1	08A	2-CH-MOV-2289A	CH/CHARGING FLOW TO REGEN HX	12050-FM-095C1/20/D4	AUX	257'	12.5/HJ	R	--	OPEN	OPEN	NO	11715-FP-11P	N/A
1079	1	08A	2-CH-MOV-2289B	CH/CCPs TO REGEN HX	12050-FM-095C1/20/E3	AUX	246'	12/HJ	R	--	OPEN	OPEN	NO	11715-FP-11P	N/A
1178	1	08A	2-CH-MOV-2350	CH/EMERGENCY BORATE VALVE	12050-FM-095B1/22/B5	AUX	274'	9.7/JK	S R	--	CLOSED	OPEN	YES	11715-FP-11F	N/A
1095	1	08A	2-CH-MOV-2370	CH/CCP TO RCP SEAL INJECTION	12050-FM-095C2/14/F4	AUX	250'	9.7/L	R	--	OPEN	OPEN	NO	11715-FP-11A	N/A
1077	1, 2	08A	2-CH-MOV-2373	CH/CCP HEADER TO SEAL WATER HX	12050-FM-095B1/22/AB	AUX	244'	9.4/L	R	--	OPEN	OPEN	NO	11715-FP-11A	N/A
1124	1, 2	08A	2-CH-MOV-2380	CH/SEAL WATER RETURN ISOL	12050-FM-095C2/14/F4	CONTMT	248'	9	R	A,20	OPEN	OPEN	NO	N/A	N/A
1124	1	08A	2-CH-MOV-2380	CH/RCP SEALWATER RETURN CONTMT ISOL	12050-FM-095C2/14/F4	CONTMT	248'	9	S R	I	OPEN	CLOSED	YES	N/A	2-EP-MC-20
1137	1, 2	08A	2-CH-MOV-2381	CH/RCP SEAL WATER INJECTION TO SEAL WATER HX	12050-FM-095B1/22/C8	AUX	244'	12/H	R	A,21	OPEN	OPEN	NO	11715-FP-11P	N/A
1137	2	08A	2-CH-MOV-2381	CH/RCP SEAL RETURN CONTMT ISOL	12050-FM-095B1/21/C8	AUX	244'	12/H	S R	I	OPEN	CLOSED	YES	N/A	2-EP-MC-22
4175	2	08A	2-FW-MOV-200A	FW/AFWP HEADER TO SG A	12050-FM-074A1/27/A5	AFPH	275'	--	S R	7	CLOSED	OPEN	YES	12050-FP-2J	N/A
4160	2	08A	2-FW-MOV-200B	FW/AFWP HEADER TO SG B	12050-FM-074A1/27/A6	AFPH	275'	--	R	7	OPEN	OPEN	NO	12050-FP-2J 12050-FP-2K	N/A
4167	2	08A	2-FW-MOV-200C	FW/AFWP HEADER TO SG C	12050-FM-074A1/27/A7	AFPH	275'	--	S R	7	CLOSED	OPEN	YES	12050-FP-2J 12050-FP-2K	N/A
4159	1	08A	2-FW-MOV-200D	FW/AFWP TO SG A CONTROL VALVE	12050-FM-074A3/29/D8	AFPH	273'	--	R	--	OPEN	OPEN	NO	12050-FP-2J	N/A
5200	1	08A	2-HV-MOV-211A	HV/CHILLER OUTLET ISOLATION VALVE	11715-FB-040A2/13	SB	264'	CHILLER RM	R	--	OPEN	OPEN	NO	N/A	N/A
5206	2	08A	2-HV-MOV-211B	HV/CHILLER OUTLET ISOLATION VALVE	11715-FB-040A2/13	SB	264'	CHILLER RM	R	--	OPEN	OPEN	NO	N/A	N/A
5226	2	08A	2-HV-MOV-211C	HV/CHILLER OUTLET ISOL	11715-FB-040A2/13/D6	SB	264'	CHILLER RM	R	--	OPEN	OPEN	NO	N/A	N/A
5226P	1	08A	2-HV-MOV-213A	HV/CR & RR WATER SYSTEM ISOL	11715-FB-040D2/13/E3	SB	254'	CHILLER RM	R	--	OPEN	OPEN	NO	N/A	N/A
5226Q	1	08A	2-HV-MOV-213B	HV/CR & RR WATER SYSTEM ISOL	11715-FB-040D2/13/B3	SB	254'	CHILLER RM	R	--	OPEN	OPEN	NO	N/A	N/A
5226R	2	08A	2-HV-MOV-213C	HV/CR & RR WATER SYSTEM ISOL	11715-FB-040D2/13/D3	SB	254'	CHILLER RM	R	--	OPEN	OPEN	NO	N/A	N/A

NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA2\_SSEL.DBF / 05/20/97 / 13:04:12  
 Sort Criteria: Class, ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	TRAIN	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP Normal	ST. Desired	POWER REQD?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
7002	1	OBA	2-QS-MOV-200A	QS/QS PUMP INLET ISOL	12050-FM-091A2/19/A3	QSPH	271'	--	S	R I	CLOSED	OPEN	YES	12050-FE-1Q1/21	2-EP-MC-20	
7005	2	OBA	2-QS-MOV-200B	QS/QS PUMP B INLET ISOL	92050-FM-091A2/19/A3	QSPH	271'	--	R	I	OPEN	OPEN	NO	N/A	2-EP-MC-21	
3076	1	OBA	2-QS-MOV-201A	QS/QUENCH SPRAY PUMP A OUTLET ISOL	12050-FM-091A2/19/D5	QSPH	256'	--	R	A	CLOSED	CLOSED	NO	12050-FP-4C	N/A	
3076	1	OBA	2-QS-MOV-201A	QS/QUENCH SPRAY PUMP A OUTLET ISOL	12050-FM-091A2/19/D5	QSPH	256'	--	S	R I	CLOSED	OPEN	YES	12050-FP-4C	2-EP-MC-19	
3077	1	OBA	2-QS-MOV-201B	QS/QUENCH SPRAY PUMP B OUTLET ISOL	12050-FM-091A2/19/E5	QSPH	268'	--	R	A	CLOSED	CLOSED	NO	12050-FP-4C	N/A	
3077	2	OBA	2-QS-MOV-201B	QS/QUENCH SPRAY PUMP B OUTLET ISOL	12050-FM-091A2/19/E5	QSPH	268'	--	S	R I	CLOSED	OPEN	YES	12050-FP-4C	2-EP-MC-21	
3059	1	OBA	2-QS-MOV-202A	QS/REFUELING WATER CHEM ADD TANK ISOL	12050-FM-091A1/20/C5	YARD/TUNL	270'	--	R	A,21	CLOSED	CLOSED	NO	12050-FP-7A	N/A	
3059	1	OBA	2-QS-MOV-202A	QS/REFUELING WATER CHEM ADD TANK ISOL	12050-FM-091A1/20/C5	YARD/TUNL	270'	2 FT N OF AFPH	S	R I,21	CLOSED	OPEN	YES	12050-FP-7A	2-EP-MC-20	
3060	2	OBA	2-QS-MOV-202B	QS/REFUELING WATER CHEM ADD TANK ISOL	12050-FM-091A1/20/C6	YARD/TUNL	272'	--	R	A,21	CLOSED	CLOSED	NO	12050-FP-7A	N/A	
3060	2	OBA	2-QS-MOV-202B	QS/REFUELING WATER CHEM ADD TANK ISOL	12050-FM-091A1/20/C6	YARD/TUNL	272'	--	S	R I,21	CLOSED	OPEN	YES	12050-FP-7A	2-EP-MC-22	
3020	1	OBA	2-RC-MOV-2535	RC/PZR PORV BLOCK VALVE	12050-FM-093B1/25/E4	CONTMT	308'	5.1	S	R 12	OPEN	OP/CL	YES	N/A	N/A	
3021	1	OBA	2-RC-MOV-2536	RC/PZR PORV BLOCK VALVE	12050-FM-093B1/25/D4	CONTMT	308'	5	S	R 12	OPEN	OP/CL	YES	N/A	N/A	
4247	1, 2	OBA	2-RH-MOV-2700	RH/RHR PUMP SUCTION ISOL	12050-FM-094A1/15/A5	CONTMT	243'	16	S	R 2	CLOSED	OPEN	YES	N/A	2-RC-PT-2402	
4248	1, 2	OBA	2-RH-MOV-2701	RH/RHR PUMP SUCTION ISOL	12050-FM-094A1/15/A4	CONTMT	231'	16	S	R 2	CLOSED	OPEN	YES	N/A	2-RH-PT-2403	
4274	1, 2	OBA	2-RH-MOV-2720A	RH/RHR RETURN ISOL LOOP 2	12050-FM-094A2/14/C3	CONTMT	216'	4.3	S	R --	CLOSED	OPEN	YES	N/A	N/A	
4275	1, 2	OBA	2-RH-MOV-2720B	RH/RHR RETURN ISOL LOOP 3	12050-FM-094A2/14/B3	CONTMT	216'	4	S	R --	CLOSED	OPEN	YES	N/A	N/A	
7039	2	OBA	2-RS-MOV-200A	RS/CASING COOLING PUMP A DISCH ISOL	12050-FM-091B1/10/E7	SFGD	256'	--	S	R I	CLOSED	OPEN	YES	N/A	2-EP-MC-20	
7042	2	OBA	2-RS-MOV-200B	RS/CASING COOLING PUMP B DISCH ISOL	12050-FM-091B1/10/F7	SFGD	256'	--	S	R I	CLOSED	OPEN	YES	N/A	2-EP-MC-21	
7038	2	OBA	2-RS-MOV-201A	RS/CASING COOLING PUMP A DISCH ISOL	12050-FM-091B1/10/E7	SFGD	256'	--	R	I	OPEN	OPEN	NO	N/A	2-EP-MC-20	
7041	2	OBA	2-RS-MOV-201B	RS/CASING COOLING PUMP B DISCH ISOL	12050-FM-091B1/10/F7	SFGD	256'	--	R	I	OPEN	OPEN	NO	N/A	2-EP-MC-21	
7022	2	OBA	2-RS-MOV-255A	RS/OUTSIDE RECIRC SPRAY PUMP A INLET ISOL	12050-FM-091A4/18/B6	SFGD	267'	VALVE PIT	R	I	OPEN	OPEN	NO	N/A	2-EP-MC-19	
7027	2	OBA	2-RS-MOV-255B	RS/OUTSIDE RECIRC SPRAY PUMP B INLET ISOL	12050-FM-091A4/18/A6	SFGD	267'	VALVE PIT	R	I	OPEN	OPEN	NO	N/A	2-EP-MC-21	

NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: MA2\_SSEL.DBF / 05/20/97 / 13:04:12  
 Sort Criteria: Class, ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	TRAIN	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr./Flv.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQD?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
7024	2	OBA	2-RS-MOV-256A	RS/OUTSIDE RECIRC SPRAY PUMP A DISCH ISOL	12050-FM-091A4/18/D5	SFGD	256'	--	R	I	OPEN	OPEN	NO	N/A	2-EP-MC-19	
1140	1	OBA	2-SI-MOV-2836	SI/CCP TO COLD LEGS 1, 2, 3	12050-FM-096A3/21/C8	AUX	244'	12/J	R	A,21	CLOSED	CLOSED	NO	N/A	N/A	
1140	1	OBA	2-SI-MOV-2836	SI/CCP TO COLD LEGS 1, 2, 3	12050-FM-096A3/21/C8	AUX	244'	12/J	S	R I,21	CLOSED	OPEN	YES	N/A	2-EP-MC-22	
7009A	1	OBA	2-SI-MOV-2860A	SI/LHSI PUMP A SUMP ISOL	12050-FM-096A1/20/B7	QSPH	267'	3/K	S	R I	CLOSED	OPEN	YES	N/A	2-EP-MC-19	
7011A	2	OBA	2-SI-MOV-2860B	SI/LHSI PUMP B SUMP ISOL	12050-FM-096A1/20/B5	QSPH	244'	--	S	R I	CLOSED	OPEN	YES	N/A	2-EP-MC-21	
1063	1	OBA	2-SI-MOV-2863A	SI/LHSI HDR TO CCPs	12050-FM-096A2/24/C5	AUX	--	--	R	A	CLOSED	CLOSED	NO	N/A	N/A	
1063	1	OBA	2-SI-MOV-2863A	SI/LHSI HDR TO CCPs	12050-FM-096A2/24/C5	AUX	244'	7.6/J	S	R I	CLOSED	OPEN	YES	N/A	2-EP-MC-19	
1063A	2	OBA	2-SI-MOV-2863B	SI/LHSI TO CHARGING PUMP A SUCTION X CONN	12050-FM-095B2/25/B8	AUX	244'	9/J	S	R I	CLOSED	OPEN	YES	N/A	2-EP-MC-21	
1063A	2	OBA	2-SI-MOV-2863B	SI/LHSI TO CHARGING PUMP A SUCTION X CONN	12050-FM-095B2/25/B8	AUX	244'	9/J	R	A	CLOSED	CLOSED	NO	N/A	2-EP-MC-21	
2048	1, 2	OBA	2-SI-MOV-2865A	SI/ACCUM OUTLET ISOL	12050-FM-096B1/19/C7	CONTMT	216'	14.8	S	R 2,19	OPEN	CLOSED	YES	N/A	2H12N	
4278	1, 2	OBA	2-SI-MOV-2865B	SI/ACCUM OUTLET ISOL	12050-FM-096B2/16/C6	CONTMT	216'	9	S	R 2,22	OPEN	CLOSED	YES	N/A	2H12N	
4281	1, 2	OBA	2-SI-MOV-2865C	SI/ACCUM OUTLET ISOL	12050-FM-096B3/17/C6	CONTMT	216'	4.3	S	R 2,22	OPEN	CLOSED	YES	N/A	2J12N	
1091	1	OBA	2-SI-MOV-2867A	SI/CHARGING HEADER TO BIT ISOL	12050-FM-096A3/21/C4	AUX	244'	11.5/J	R	--	CLOSED	CLOSED	NO	N/A	N/A	
1092	1	OBA	2-SI-MOV-2867B	SI/CHARGING HEADER TO BIT ISOL	12050-FM-096A3/21/D4	AUX	244'	11.5/J	R	--	CLOSED	CLOSED	NO	N/A	N/A	
1092H	1	OBA	2-SI-MOV-2867C	SI/BIT TO COLD LEG LOOP ISOL	12050-FM-096A3/21/E7	AUX	244'	12/J	R	--	CLOSED	CLOSED	NO	N/A	N/A	
1092I	2	OBA	2-SI-MOV-2867D	SI/BIT TO COLD LEG LOOP ISOL	12050-FM-096A3/21/D7	AUX	244'	12.5/J	R	--	CLOSED	CLOSED	NO	N/A	N/A	
1141	1	OBA	2-SI-MOV-2869A	SI/CCP TO HOT LEGS 1, 2, 3	12050-FM-096A3/21/C8	AUX	244'	12/J	R	A,21	CLOSED	CLOSED	NO	11715-FP-11Q	N/A	
1141	1	OBA	2-SI-MOV-2869A	SI/CCP TO HOT LEGS 1, 2, 3	12050-FM-096A3/21/C8	AUX	244'	12/J	S	R I,21	CLOSED	OPEN	YES	N/A	2-EP-MC-19	
1093	1	OBA	2-SI-MOV-2869B	SI/CCP TO HOT LEGS 1, 2, 3	12050-FM-096A3/21/A8	AUX	244'	12/J	R	A	CLOSED	CLOSED	NO	N/A	N/A	
1093	1	OBA	2-SI-MOV-2869B	SI/CCP TO HOT LEGS 1, 2, 3	12050-FM-096A3/21/A8	AUX	244'	12/J	S	R I	CLOSED	OPEN	YES	N/A	2-EP-MC-21	
7014	1	OBA	2-SW-MOV-204A	SW/RECIRC SPRAY COOLER A DISCH ISOL	11715-FM-078B1/20/C4	QSPH	265'	--	S	R I	CLOSED	OPEN	YES	N/A	2-EP-MC-19	
7019	1	OBA	2-SW-MOV-204B	SW/RECIRC SPRAY COOLER B DISCH ISOL	11715-FM-078B1/20/C5	QSPH	265'	--	S	R I	CLOSED	OPEN	YES	N/A	2-EP-MC-21	
7031	2	OBA	2-SW-MOV-204C	SW/RECIRC SPRAY COOLER C DISCH ISOL	11715-FM-078B1/20/C6	QSPH	265'	--	S	R I	CLOSED	OPEN	YES	N/A	2-EP-MC-21	

NORTH ANNA UNIT 2  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
COMPOSITE SSEL  
(Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA2\_SSEL.DBF / 05/20/97 / 13:04:12  
Sort Criteria: Class, ID Number  
Filter Criteria: <none>  
Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Fir. Elev.	LOCATION Rm. or Row/Col.	SORT NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10) (11)	(12)	(13)	(14)	(15)	(16)	(17)
7026	2	08A	2-SW-MOV-204D	SW/RECIRC SPRAY COOLER D DISCH ISOL	11715-FM-078B1/20/C7	QSPH	265'	--	S R I	CLOSED	OPEN	YES	N/A	2-EP-MC-19
7160	1	08B	2-AS-SOV-200A	AS/AIR EJECTOR STM INLET CONTMT ISOL PILOT	12050-FM-072A2/19/E5	TB	279'	15/Z	S R I	AIR	VENT	NO	12050-AS-003	N/A
7162	1	08B	2-AS-SOV-200B	AS/AIR EJECTOR STM INLET CONTMT ISOL PILOT	12050-FM-072A2/19/E5	TB	279'	16/C	S R I	AIR	VENT	NO	12050-AS-004	N/A
7108	1	08B	2-BD-SOV-200A	BD/SG 1A BLOWDOWN CONTMT ISOL PILOT	12050-FM-098A2/16/D6	AUX	244'	11.5/K	S R I	AIR	VENT	NO	12050-BD-001/6	N/A
7110	2	08B	2-BD-SOV-200B	BD/SG BLOWDOWN CONTMT ISOL PILOT	12050-FM-098A2/16/D5	CONTMT	248'	10	S R I	AIR	VENT	NO	12050-BD-002/8	N/A
7112	1	08B	2-BD-SOV-200C	BD/SG 1B BLOWDOWN CONTMT ISOL PILOT	12050-FM-098A3/18/D6	AUX	244'	12/J	S R I	AIR	VENT	NO	12050-BD-003/6	N/A
7114	2	08B	2-BD-SOV-200D	BD/SG 1B BLOWDOWN CONTMT ISOL PILOT	12050-FM-098A3/18/D5	CONTMT	241'	10	S R I	AIR	VENT	NO	12050-BD-004/7	N/A
7116	1	08B	2-BD-SOV-200E	BD/SG 1C BLOWDOWN CONTMT ISOL PILOT	12050-FM-098A4/18/D6	AUX	244'	12/J	S R I	AIR	VENT	NO	12050-BD-005/6	N/A
7118	2	08B	2-BD-SOV-200F	BD/SG 1C BLOWDOWN CONTMT ISOL PILOT	12050-FM-098A4/18/D5	CONTMT	241'	9	S R I	AIR	VENT	NO	12050-BD-006/8	N/A
7212	2	08B	2-CC-SOV-200A	CC/CC RETURN FROM COOLING CONTMT ISOL PILOT	12050-FM-079B3/14/E3	AUX	244'	12/J	S R I,35	AIR	VENT	NO	12050-CC-050	N/A
7214	2	08B	2-CC-SOV-200B	CC/CC RETURN FROM COOLING COIL CONTMT ISOL PILOT	12050-FM-079B3/14/D4	AUX	244'	12/J	S R I	AIR	VENT	NO	12050-CC-051/5	N/A
7216	2	08B	2-CC-SOV-200C	CC/CC RETURN FROM COOLING COIL CONTMT ISOL PILOT	12050-FM-079B3/14/E4	AUX	244'	11.3/L	S R I	AIR	VENT	NO	12050-CC-052/5	N/A
7218	1	08B	2-CC-SOV-201A	CC/THERMAL BARRIER DISCH CONTMT ISOL PILOT	12050-FM-079A1/19/D7	AUX	244'	11.4/K	S R I	AIR	VENT	NO	12050-CC-053/5	N/A
7220	2	08B	2-CC-SOV-201B	CC/THERMAL BARRIER DISCH CONTMT ISOL PILOT	12050-FM-079A1/19/D6	CONTMT	249'	10.5	S R I	AIR	VENT	NO	12050-CC-054/6	N/A
7222	1	08B	2-CC-SOV-202A	CC/RCP CC RETURN CONTMT ISOL PILOT	12050-FM-079A4/16/B6	AUX	244'	11.3/K	S R I	AIR	VENT	NO	12050-CC-055/5	N/A
7224	2	08B	2-CC-SOV-202B	CC/RCP CC RETURN CONTMT ISOL PILOT	12050-FM-079A4/16/A3	CONTMT	250'	10.3	S R I	AIR	VENT	NO	12050-CC-058/6	N/A
7226	1	08B	2-CC-SOV-202C	CC/RCP CC RETURN CONTMT ISOL PILOT	12050-FM-079A3/17/B6	AUX	244'	11.7/K	S R I	AIR	VENT	NO	12050-CC-056/5	N/A
7228	2	08B	2-CC-SOV-202D	CC/RCP CC RETURN CONTMT ISOL PILOT	12050-FM-079A3/17/A3	CONTMT	249'	10.3	S R I	AIR	VENT	NO	12050-CC-059/5	N/A
7230	1	08B	2-CC-SOV-202E	CC/RCP CC RETURN CONTMT ISOL PILOT	12050-FM-079A2/16/B6	AUX	251'	11.8/JK	S R I	AIR	VENT	NO	12050-CC-057/5	N/A
7232	2	08B	2-CC-SOV-202F	CC/RCP CC RETURN CONTMT ISOL PILOT	12050-FM-079A2/16/A3	CONTMT	249'	10.1	S R I	AIR	VENT	NO	12050-CC-060/6	N/A



NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA2\_SSEL.DBF / 05/20/97 / 13:04:12  
 Sort Criteria: Class, ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	TRAIN	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elv.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
5059	1	08B	2-CC-SOV-203A	CC/RHR HX OUTLET CONTMT ISOL PILOT	12050-FM-07981/17/B7	AUX	252'	11/L	R	A,27	AIR	AIR	YES	12050-CC-061/5	N/A	
5059	1	08B	2-CC-SOV-203A	CC/RHR HX OUTLET CONTMT ISOL PILOT	12050-FM-07981/17/B7	AUX	252'	11/L	S R	1,27	AIR	VENT	NO	12050-CC-061/5	N/A	
5067	2	08B	2-CC-SOV-203B	CC/RHR HX OUTLET CONTMT ISOL PILOT	12050-FM-07981/17/C7	AUX	252'	11/L	S R	1,27	AIR	VENT	NO	12050-CC-062/5	N/A	
5067	1	08B	2-CC-SOV-203B	CC/RHR HX OUTLET CONTMT ISOL PILOT	12050-FM-07981/17/C7	AUX	252'	11/L	R	A,27	AIR	AIR	YES	12050-CC-062/5	N/A	
7238	1	08B	2-CC-SOV-204A1	CC/RCP CC CONTMT ISOL PILOT	12050-FM-079A2/16/E8	AUX	254'	12/J	S R	I	AIR	VENT	NO	12050-CC-063/4	N/A	
7239	2	08B	2-CC-SOV-204A2	CC/RCP CC CONTMT ISOL PILOT	12050-FM-079A2/16/E8	AUX	254'	12/J	S R	I	AIR	VENT	NO	12050-CC-063/4	N/A	
7242	1	08B	2-CC-SOV-204B1	CC/RCP CC CONTMT ISOL PILOT	12050-FM-079A3/17/E8	AUX	244'	12/J	S R	I	AIR	VENT	NO	12050-CC-064/4	N/A	
7243	2	08B	2-CC-SOV-204B2	CC/RCP CC CONTMT ISOL PILOT	12050-FM-079A3/17/E8	AUX	244'	12/J	S R	I	AIR	VENT	NO	12050-CC-064/4	N/A	
7246	1	08B	2-CC-SOV-204C1	CC/RCP CC CONTMT ISOL PILOT	12050-FM-079A4/16/E8	AUX	244'	11.5/J	S R	I	AIR	VENT	NO	12050-CC-065/4	N/A	
7247	2	08B	2-CC-SOV-204C2	CC/RCP CC CONTMT ISOL PILOT	12050-FM-079A4/16/E8	AUX	244'	11.5/J	S R	I	AIR	VENT	NO	12050-CC-065/4	N/A	
7250	1	08B	2-CC-SOV-205A	CC/CC RETURN FROM COOLING COIL CONTMT ISOL PILOT	12050-FM-07983/14/E4	CONTMT	253'	10.5	S R	I	AIR	VENT	NO	12050-CC-066/7	N/A	
7252	1	08B	2-CC-SOV-205B	CC/CC RETURN FROM COOLING COIL CONTMT ISOL PILOT	12050-FM-07983/14/D4	CONTMT	250'	9.8	S R	I	AIR	VENT	NO	12050-CC-067/6	N/A	
7254	1	08B	2-CC-SOV-205C	CC/CC RETURN FROM COOLING COIL CONTMT ISOL PILOT	12050-FM-07983/14/C4	CONTMT	251'	10.5	S R	I	AIR	VENT	NO	12050-CC-068/4	N/A	
1170	2	08B	2-CH-SOV-2113A1	CH/BAST TO VCT CONTROL PILOT	12050-CH-017/9	AUX	278'	9.6/J	R	A	AIR	AIR	YES	N/A	N/A	
1170	2	08B	2-CH-SOV-2113A1	CH/BAST TO VCT CONTROL PILOT	12050-CH-017/9	AUX	278'	9.6/J	S R	I	AIR	VENT	NO	12050-CH-017/9	2-EP-CB-26A	
1171	2	08B	2-CH-SOV-2113A2	CH/BAST TO VCT CONTROL PILOT	12050-CH-017/9	AUX	278'	9.6/J	R	A	AIR	AIR	YES	N/A	N/A	
1171	2	08B	2-CH-SOV-2113A2	CH/BAST TO VCT CONTROL PILOT	12050-CH-017/9	AUX	278'	9.6/J	S R	I	AIR	VENT	NO	12050-CH-017/9	2-EP-CB-26A	
1197	2	08B	2-CH-SOV-220I	CH/EXCESS LETDOWN HX ISOL PILOT	12050-CH-021/3	CONTMT	235'	13	R	--	VENT	VENT	NO	N/A	N/A	
7131A	1	08B	2-CH-SOV-2204A	CH/LETDOWN LINE CONTMT ISOL PILOT	12050-CH-100/1	CONTMT	241'	9	R	I	VENT	VENT	NO	11715-CH-100/1	N/A	
7132A	2	08B	2-CH-SOV-2204B	CH/LETDOWN LINE CONTMT ISOL PILOT	12050-CH-070/6	AUX	245'	12/F	S R	I	AIR	VENT	NO	12050-CH-070/6	N/A	
1113	1, 2	08B	2-CH-SOV-2303A	CH/SEAL WATER LEAKOFF PILOT	12050-CH-065/3	CONTMT	221'	12	R	21,36	VENT	VENT	NO	N/A	2-CH-HCV-2303A	
1114	1, 2	08B	2-CH-SOV-2303B	CH/SEAL WATER LEAKOFF PILOT	12050-CH-066/4	CONTMT	217'	8.1	R	21,36	VENT	VENT	NO	N/A	2-CH-HCV-2303B	
1115	1, 2	08B	2-CH-SOV-2303C	CH/SEAL WATER LEAKOFF PILOT	12050-CH-067/3	CONTMT	221'	3.8	R	21,36	VENT	VENT	NO	N/A	2-CH-HCV-2303C	
1123	2	08B	2-CH-SOV-2307	CH/SEAL BYPASS OUTLET ISOL PILOT	12050-CH-044/4	CONTMT	248' A	9.2	R	36	VENT	VENT	NO	12050-FK-1D	2-CH-HCV-2307	
1090	1	08B	2-CH-SOV-2310	CH/CHARGING ISOL PILOT	12050-CH-069/3	CONTMT	222'	6.8	R	--	VENT	VENT	NO	N/A	N/A	

NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA2\_SSEL.DBF / 05/20/97 / 13:04:12  
 Sort Criteria: Class, ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elv.	LOCATION Rm. or Row/Col	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING DNG. NO./REV.	SYS. & SUPPORTING	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	
2007	1, 2	08B	2-CH-SOV-2311	CH/AUX SPRAY ISOL PILOT	12050-CH-069/3	CONTMT	219'	7	R	28	VENT	VENT	NO	12050-CH-003/4	N/A	
1206	2	08B	2-CH-SOV-2389	CH/EXCESS LETDOWN FLOW DIRECTING PILOT	12050-CH-046/3	CONTMT	233'	13	R	--	VENT	VENT	NO	N/A	N/A	
7140	1	08B	2-CV-SOV-250A	CV/ATMOS CLEANUP CONTMT ISOL PILOT	12050-FM-092A2/14/B4	AUX	244'	12/J	S	R	I	AIR	VENT	NO	12050-CV-002/5	N/A
7142	2	08B	2-CV-SOV-250B	CV/ATMOS CLEANUP CONTMT ISOL PILOT	12050-FM-092A2/14/B5	AUX	244'	12/J	S	R	I	AIR	VENT	NO	12050-CV-003/6	N/A
7144	1	08B	2-CV-SOV-250C	CV/ATMOS CLEANUP CONTMT ISOL PILOT	12050-FM-092A2/14/C4	AUX	244'	12/J	S	R	I	AIR	VENT	NO	12050-CV-004/5	N/A
7146	2	08B	2-CV-SOV-250D	CV/ATMOS CLEANUP CONTMT ISOL PILOT	12050-FM-092A2/14/C5	AUX	244'	12/J	S	R	I	AIR	VENT	NO	12050-CV-005/5	N/A
7148	1	08B	2-DA-SOV-200A	DA/SUMP DISCH CONTMT ISOL PILOT	12050-FM-090A1/17/E7	AUX	244'	12/J	R	I	VENT	VENT	NO	12050-DA-003/7	N/A	
7150	2	08B	2-DA-SOV-200B	DA/SUMP DISCH CONTMT ISOL PILOT	12050-FM-090C3/16/C3	CONTMT	253'	9	R	I	VENT	VENT	NO	12050-DA-004/6	N/A	
7152	1	08B	2-DG-SOV-200A	DG/PRIMARY DRAIN XFER CONTMT ISOL PILOT	11715-FM-092A1/15/B8	AUX	248'	11/K	R	I	VENT	VENT	NO	12050-DG-006/6	N/A	
7154	2	08B	2-DG-SOV-200B	DG/PRIMARY DRAIN XFER CONTMT ISOL PILOT	12050-FM-090C1/17/B7	CONTMT	253'	10.5	R	I	VENT	VENT	NO	12050-DG-005/5	N/A	
4210A1		08B	2-FW-SOV-2478-1	SOLENOID OPERATED VALVE			SB	286'		12/D		S	R			
4210A2		08B	2-FW-SOV-2478-2	SOLENOID OPERATED VALVE			SB	286'		12/D		S	R			
4211A1		08B	2-FW-SOV-2479-1	SOLENOID OPERATED VALVE			SB	286'		12/D		S	R			
4211A2		08B	2-FW-SOV-2479-2	SOLENOID OPERATED VALVE			SB	286'		12/D		S	R			
4210B1		08B	2-FW-SOV-2488-1	SOLENOID OPERATED VALVE			SB	286'		12/D		S	R			
4210B2		08B	2-FW-SOV-2488-2	SOLENOID OPERATED VALVE			SB	286'		12/D		S	R			
4211B1		08B	2-FW-SOV-2489-1	SOLENOID OPERATED VALVE			SB	286'		12/D		S	R			
4211B2		08B	2-FW-SOV-2489-2	SOLENOID OPERATED VALVE			SB	286'		12/D		S	R			
4210C1		08B	2-FW-SOV-2498-1	SOLENOID OPERATED VALVE			SB	286'		12/D		S	R			
4210C2		08B	2-FW-SOV-2498-2	SOLENOID OPERATED VALVE			SB	286'		12/D		S	R			
4211C1		08B	2-FW-SOV-2499-1	SOLENOID OPERATED VALVE			SB	286'		12/D		S	R			
4211C2		08B	2-FW-SOV-2499-2	SOLENOID OPERATED VALVE			SB	286'		12/D		S	R			
1240	1, 2	08B	2-HRS-SOV-1617	HRS/RC COLD LEG SAMPLE COOLER ISOL PILOT	12050-FM-089B1/17/D5	AUX	259'	10.5/L	S	R	24	VENT	AIR	YES	12050-HRS-005/3 INST AIR	
1226	1, 2	08B	2-HRS-SOV-1619	HRS/HOT LEG SAMPLE COOLER INLET ISOL PILOT	12050-FM-089B1/17/E6	AUX	259'	10.5/JK	S	R	24	VENT	AIR	YES	12050-HRS-007/3 INST AIR	

NORTH ABMA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA2\_SSEL.DBF / 05/20/97 / 13:04:12  
 Sort Criteria: Class, ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	TRAIN	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elv.	LOCATION Rm. or Row/Col.	SORT NOTES		OP. Normal	ST. Desired	POWER REQD?	SUPPORTING SYS. DMG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
4272	1, 2	08B	2-HRS-SOV-1621	HRS/SAMPLING SYSTEM ISOL PILOT	12050-FM-089B1/17/F4	AUX	259'	10.5/L	S	R 24	VENT	AIR	YES	N/A	INST	AIR
4270	1, 2	08B	2-HRS-SOV-1622	SS/SAMPLING SYSTEM ISOL	11715-FM-108A1/03/E5	AUX	259'	--	R	--	VENT	VENT	NO	N/A		N/A
5235	1	08B	2-HV-SOV-2200A	HV/CND WTR PUMP SEAL FLOW CONTROL	11715-FB-040D2/13	SB	256'	CHILLER RM	S	R --	OP/CL	OPEN	YES	N/A		N/A
5236	1	08B	2-HV-SOV-2200B	HV/CND WTR PUMP SEAL FLOW CONTROL	11715-FB-040D2/13	SB	256'	CHILLER RM	S	R --	OP/CL	OPEN	YES	N/A		N/A
5237	2	08B	2-HV-SOV-2200C	HV/CND WTR PUMP SEAL FLOW CONTROL	11715-FB-040D2/13	SB	256'	CHILLER RM	S	R --	OP/CL	OPEN	YES	N/A		N/A
7256	1	08B	2-IA-SOV-202A	IA/INSTR AIR HEADER CONTMT ISOL PILOT	12050-IA-013/6	AUX	244'	12/J	R	I	VENT	VENT	NO	12050-IA-013/6		N/A
7258	2	08B	2-IA-SOV-202B	IA/INSTR AIR HDR CONTMT ISOL PILOT	12050-IA-014/5	AUX	244'	12/J	R	I	VENT	VENT	NO	12050-IA-014/5		N/A
7164	1	08B	2-LM-SOV-200A	LM/LEAKAGE MONITORING CONTMT ISOL PILOT	12050-FM-092A1/15/F7	AUX	259'	11.5/J	S	R I	AIR	VENT	NO	12050-LM-001/6		N/A
7166	2	08B	2-LM-SOV-200B	LM/LEAKAGE MONITORING CONTMT ISOL PILOT	12050-FM-092A1/15/F6	AUX	259'	11.5/J	S	R I	AIR	VENT	NO	12050-LM-002/6		N/A
7168	1	08B	2-LM-SOV-200C	LM/LEAKAGE MONITORING CONTMT ISOL PILOT	12050-FM-092A1/15/F6	AUX	259'	12/JK	S	R I	AIR	VENT	NO	12050-LM-003/6		N/A
7170	2	08B	2-LM-SOV-200D	LM/LEAKAGE MONITORING CONTMT ISOL PILOT	12050-FM-092A1/15/F5	AUX	259'	11.5/K	S	R I	AIR	VENT	NO	12050-LM-004/6		N/A
7172	1	08B	2-LM-SOV-200E	LM/LEAKAGE MONITORING CONTMT ISOL PILOT	12050-FM-092A1/15/F6	AUX	259'	11.5/J	S	R I	AIR	VENT	NO	12050-LM-005/6		N/A
7174	2	08B	2-LM-SOV-200F	LM/LEAKAGE MONITORING CONTMT ISOL PILOT	12050-FM-092A1/15/F5	AUX	259'	11.5/J	S	R I	AIR	VENT	NO	12050-LM-006/6		N/A
7176	1	08B	2-LM-SOV-200G	LM/LEAKAGE MONITORING CONTMT ISOL PILOT	12050-FM-092A1/15/F6	AUX	259'	12/J	S	R I	AIR	VENT	NO	12050-LM-007/6		N/A
7178	2	08B	2-LM-SOV-200H	LM/LEAKAGE MONITORING CONTMT ISOL PILOT	12050-FM-092A1/15/F6	AUX	259'	12/J	S	R I	AIR	VENT	NO	12050-LM-008/6		N/A
7180	1	08B	2-LM-SOV-201A	LM/PRESS SENSOR CONTMT ISOL PILOT	12050-FM-092A1/15/D5	AUX	244'	11/J	S	R I	AIR	VENT	NO	12050-LM-017/7		N/A
7182	2	08B	2-LM-SOV-201B	LM/PRESS SENSOR CONTMT ISOL PILOT	12050-FM-092A1/15/D5	AUX	246'	11/J	S	R I	AIR	VENT	NO	12050-LM-018/7		N/A
7184	1	08B	2-LM-SOV-201C	LM/PRESS SENSOR CONTMT ISOL PILOT	12050-FM-092A1/15/D5	AUX	244'	11/J	S	R I	AIR	VENT	NO	12050-LM-017/7		N/A
7186	2	08B	2-LM-SOV-201D	LM/PRESS SENSOR CONTMT ISOL PILOT	12050-FM-092A1/15/D5	AUX	246'	11/J	S	R I	AIR	VENT	NO	12050-LM-018/7		N/A
4018	1, 2	08B	2-MS-SOV-201A1	MS/SG A MSIV PILOT VALVE	12050-FM-070B1/18/E4	QSPH	281'	13/GB	S	R --	AIR	VENT	YES	12050-MS-206/6		N/A
4019	1, 2	08B	2-MS-SOV-201A2	MS/SG A MSIV PILOT VALVE	12050-FM-070B1/18/E4	QSPH	281'	13/GB	S	R --	AIR	VENT	YES	12050-MS-206/6		N/A
4020	1, 2	08B	2-MS-SOV-201A4	MS/SG A MSIV PILOT VALVE	12050-FM-070B1/18/E3	QSPH	281'	13/GB	S	R --	AIR	VENT	YES	12050-MS-206/6		N/A

NORTH ANNA UNIT 2  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
COMPOSITE SSEL  
(Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: MA2\_SSEL.DBF / 05/20/97 / 13:04:12  
Sort Criteria: Class, ID Number  
Filter Criteria: <none>  
Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Fir. Elv.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP Normal	ST. Desired	POWER REQD?	SUPPORTING DWG. NO./REV.	SYS. & SUPPORTING	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10) (11)	(12)	(13)	(14)	(15)	(16)	(17)	
4021	1, 2	08B	2-MS-SOV-201A5	MS/SG A MSIV PILOT VALVE	12050-FM-070B1/18/E3	QSPH	281'	13/GB	S R --	AIR	VENT	YES	12050-MS-206/6	N/A	N/A	
4022	1, 2	08B	2-MS-SOV-201A6	MS/SG A MSIV PILOT VALVE	12050-FM-070B1/18/F4	QSPH	281'	13.6/GA	S R --	AIR	VENT	YES	12050-MS-206/6	N/A	N/A	
4023	1, 2	08B	2-MS-SOV-201A7	MS/SG A MSIV PILOT VALVE	12050-FM-070B1/18/G3	QSPH	281'	13.6/GA	S R --	AIR	VENT	YES	12050-MS-206/6	N/A	N/A	
4046	1, 2	08B	2-MS-SOV-201B1	MS/SG B MSIV PILOT VALVE	12050-FM-070B2/20/E4	QSPH	281'	13.6/GB	S R --	AIR	VENT	YES	12050-MS-207/6	N/A	N/A	
4047	1, 2	08B	2-MS-SOV-201B2	MS/SG B MSIV PILOT VALVE	12050-FM-070B2/20/E4	QSPH	281'	13.6/GB	S R --	AIR	VENT	YES	12050-MS-207/6	N/A	N/A	
4048	1, 2	08B	2-MS-SOV-201B4	MS/SG B MSIV PILOT VALVE	12050-FM-070B2/20/E3	QSPH	281'	13.6/GB	S R --	AIR	VENT	YES	12050-MS-207/6	N/A	N/A	
4049	1, 2	08B	2-MS-SOV-201B5	MS/SG B MSIV PILOT VALVE	12050-FM-070B2/20/E3	QSPH	281'	13.6/GB	S R --	AIR	VENT	YES	12050-MS-207/6	N/A	N/A	
4050	1, 2	08B	2-MS-SOV-201B6	MS/SG B MSIV PILOT VALVE	12050-FM-070B2/20/E4	QSPH	281'	13.6/GB	S R --	AIR	VENT	YES	12050-MS-207/6	N/A	N/A	
4051	1, 2	08B	2-MS-SOV-201B7	MS/SG B MSIV PILOT VALVE	12050-FM-070B2/20/F4	QSPH	281'	13.6/GB	S R --	AIR	VENT	YES	12050-MS-207/6	N/A	N/A	
4074	1, 2	08B	2-MS-SOV-201C1	MS/SG C MSIV PILOT VALVE	12050-FM-070B3/19/D4	QSPH	281'	13.6/GB	S R --	AIR	VENT	YES	12050-MS-208/6	N/A	N/A	
4075	1, 2	08B	2-MS-SOV-201C2	MS/SG C MSIV PILOT VALVE	12050-FM-070B3/19/D4	QSPH	281'	13.6/GB	S R --	AIR	VENT	YES	12050-MS-208/6	N/A	N/A	
4076	1, 2	08B	2-MS-SOV-201C4	MS/SG C MSIV PILOT VALVE	12050-FM-070B3/19/D4	QSPH	276'	13.6/GB	S R --	AIR	VENT	YES	12050-MS-208/6	N/A	N/A	
4077	1, 2	08B	2-MS-SOV-201C5	MS/SG C MSIV PILOT VALVE	12050-FM-070B3/19/D4	QSPH	276'	13.6/GB	S R --	AIR	VENT	YES	12050-MS-208/6	N/A	N/A	
4078	1, 2	08B	2-MS-SOV-201C6	MS/SG C MSIV PILOT VALVE	12050-FM-070B3/19/D4	QSPH	276'	13.6/GB	S R --	AIR	VENT	YES	12050-MS-208/6	N/A	N/A	
4079	1, 2	08B	2-MS-SOV-201C7	MS/SG C MSIV PILOT VALVE	12050-FM-070B3/19/D4	QSPH	276'	13.6/GB	S R --	AIR	VENT	YES	12050-MS-208/6	N/A	N/A	
7102	1	08B	2-MS-SOV-209A	MS/STEAM DRAIN CONTMT ISOL PILOT	12050-FM-070A3/20/D4	MSVH	273'	13/GB	S R 1,5,36	AIR	VENT	NO	12050-MS-209/6	N/A	N/A	
7103	1	08B	2-MS-SOV-209B	MS/STEAM DRAIN CONTMT ISOL PILOT	12050-FM-070A3/20/D3	MSVH	273'	13/GB	S R 1,5,36	AIR	VENT	NO	12050-MS-209/6	N/A	N/A	
7105	1	08B	2-MS-SOV-210A	MS/SG BLOWDOWN CONTMT ISOL PILOT	12050-FM-070B3/19/A4	MSVH	271'	12.8/HA	S R 1	AIR	VENT	NO	12050-MS-210/2	N/A	N/A	
7106	1	08B	2-MS-SOV-210B	MS/SG BLOWDOWN CONTMT ISOL PILOT	12050-FM-070B3/19/A4	MSVH	271'	12.8/HA	S R 1	AIR	VENT	NO	12050-MS-210/2	N/A	N/A	
4087	1	08B	2-MS-SOV-211A	MS/TDAFW STEAM ADMISSION PILOT	12050-FM-070A3/22/E5	QSPH	252'	12.8/G	S R --	AIR	VENT	YES	12050-MS-211/8	N/A	N/A	
4089	2	08B	2-MS-SOV-211B	MS/TDAFW STEAM ADMISSION PILOT	12050-FM-070A3/22/E4	QSPH	252'	12.8/G	S R --	AIR	VENT	YES	12050-MS-212/8	N/A	N/A	
5087	1	08B	2-MS-SOV-201	MS/NEUTRON SHIELD SURGE TANK OUTLET ISOL PILOT	12050-FM-079A5/17/D3	CONTMT	--	--	R 34	VENT	VENT	NO	N/A	N/A	N/A	
3001	1	08B	2-RC-SOV-201A-1	RC/RV VENT VALVE	12050-FM-093A3/26/A5	CONTMT	263'	TOP OF RV HEAD	R --	CLOSED	CLOSED	NO	N/A	N/A	N/A	
3002	2	08B	2-RC-SOV-201A-2	RC/RV VENT VALVE	12050-FM-093A3/26/A5	CONTMT	263'	TOP OF RV HEAD	R --	CLOSED	CLOSED	NO	N/A	N/A	N/A	
3003	1	08B	2-RC-SOV-201B-1	RC/RV VENT VALVE	12050-FM-093A3/26/A5	CONTMT	263'	TOP OF RV HEAD	R --	CLOSED	CLOSED	NO	N/A	N/A	N/A	
3004	2	08B	2-RC-SOV-201B-2	RC/RV VENT VALVE	12050-FM-093A3/26/A5	CONTMT	263'	TOP OF RV HEAD	R --	CLOSED	CLOSED	NO	N/A	N/A	N/A	

NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA2\_SSEL.DBF / 05/20/97 / 13:04:12  
 Sort Criteria: Class, ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg No./Rev./Zone	Building	EQUIPMENT Flr. Elv.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Display	POWER REQ'D	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
3016	1	08B	2-RC-SOV-202A1	RC/PZR VENT VALVE	12050-FM-09381/25/C3	CONTMT	296'	5.5	R	--	CLOSED	OPEN	NO	N/A	N/A
3017	2	08B	2-RC-SOV-202A2	RC/PZR VENT VALVE	12050-FM-09381/25/C3	CONTMT	296'	5.5	R	--	CLOSED	OPEN	NO	N/A	N/A
3018	1	08B	2-RC-SOV-202B1	RC/PZR VENT VALVE	12050-FM-09381/25/C3	CONTMT	296'	5.5	R	--	CLOSED	CLOSED	NO	N/A	N/A
3019	2	08B	2-RC-SOV-202B2	RC/PZR VENT VALVE	12050-FM-09381/25/C3	CONTMT	296'	5.5	R	--	CLOSED	CLOSED	NO	N/A	N/A
2021	2	08B	2-RC-SOV-2455C-1	GN/PZR PORV PILOT	11715-FM-105A1/20/C6	CONTMT	308'	5	S R	33	VENT	AIR	YES	N/A	N/A
2022	2	08B	2-RC-SOV-2455C-2	GN/PZR PORV PILOT	11715-FM-105A1/20/C6	CONTMT	308'	5	S R	33	VENT	AIR	YES	N/A	N/A
2023	2	08B	2-RC-SOV-2455C-3	GN/PZR PORV PILOT	11715-FM-105A1/20/C6	CONTMT	308'	5	S R	33	AIR	VENT	YES	N/A	N/A
2031	2	08B	2-RC-SOV-2456-1	GN/PZR PORV PILOT	11715-FM-105A1/20/C5	CONTMT	308'	5.1	S R	33	VENT	AIR	YES	N/A	N/A
2032	2	08B	2-RC-SOV-2456-2	GN/PZR PORV PILOT	11715-FM-105A1/20/C5	CONTMT	308'	5.1	S R	33	VENT	AIR	YES	N/A	N/A
2033	2	08B	2-RC-SOV-2456-3	GN/PZR PORV PILOT	11715-FM-105A1/20/C4	CONTMT	308'	5.1	S R	33	AIR	VENT	YES	N/A	N/A
7138	1	08B	2-RC-SOV-2519A	RC/PRT PW FILL CONTMT ISOL PILOT	12050-RC-036/6	AUX	244'	11.8/J	R	I	VENT	VENT	NO	12050-RC-036/6	N/A
1191	2	08B	2-RC-SOV-2557A	RC/RC XS LETDOWN ISOL PILOT	12050-RC-051/3	CONTMT	244'	14.2	R	--	VENT	VENT	NO	N/A	N/A
1193	2	08B	2-RC-SOV-2557B	RC/RC XS LETDOWN ISOL PILOT	12050-RC-052/3	CONTMT	244'	8.7	R	--	VENT	VENT	NO	N/A	N/A
1195	2	08B	2-RC-SOV-2557C	RC/RC XS LETDOWN ISOL PILOT	12050-RC-053/3	CONTMT	244'	4	R	--	VENT	VENT	NO	N/A	N/A
7188	1	08B	2-RM-SOV-200A	RM/RADIATION MONITORING RETURN CONTMT ISOL PILOT	12050-FM-08282/09/C7	AUX	245'	11.5/JK	S R	I	AIR	VENT	NO	12050-RM-018/5	N/A
7190	1	08B	2-RM-SOV-200B	RM/RADIATION MONITORING CONTMT ISOL PILOT	12050-FM-08282/09/D7	AUX	244'	12/J	S R	I	AIR	VENT	NO	12050-RM-019/5	N/A
7191A	2	08B	2-RM-SOV-200C	RM/RADIATION MONITORING CONTMT ISOL PILOT	12050-FM-08282/09/D8	CONTMT	259'	6	S R	I	AIR	VENT	NO	12050-RM-020/6	N/A
7192A	2	08B	2-RM-SOV-200D	RM/RADIATION MONITORING RETURN CONTMT ISOL PILOT	12050-FM-08282/09/C7	AUX	245'	11.5/J	S R	I	AIR	VENT	NO	12050-RM-021/5	N/A
7029	2	08B	2-RS-MOV-256B	RS/OUTSIDE RECIRC SPRAY PUMP B DISCH ISOL	12050-FM-091A4/18/D5	SFGD	256'	--	R	I	OPEN	OPEN	NO	N/A	2-EP-MC-21
7123A	1	08B	2-SI-SOV-200A	SI/NITROGEN HEADER CONTMT ISOL PILOT	12050-SI-034/4	AUX	246'	11.5/JK	S R	I	AIR	VENT	NO	12050-SI-034/4	N/A
7123B	1	08B	2-SI-SOV-200B	SI/NITROGEN HEADER CONTMT ISOL PILOT	12050-SI-034/4	AUX	246'	11.5/JK	S R	I	AIR	VENT	NO	12050-SI-034/4	N/A
7124	1	08B	2-SI-SOV-201	SI/WASTE GAS FILTER CONTMT ISOL PILOT	12050-FM-096B1/17/E4	AUX	244'	11/K	S R	I	AIR	VENT	NO	12050-SI-013/3	N/A

NORTH APPA UNIT 2  
 SARE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE LIST  
 (Sorted by Equipment Class - Mark Number)

Data Base File Name/Date/Time: NA2\_SSEL.DBF / 05/20/97 / 13:04:12  
 Sort Criteria: Class, ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	TRAIN	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Re. or Row/Col.	SORT NOTES		OP. Normal	ST. Desired	POWER REQD?	SUPPORTING SWG. NO./REV.	SYS. & SUPPORTING COMPONENTS	REQ'D INTERCONNECTIONS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	
7130	2	08B	2-SI-SOV-2842	SI/ACCUM TEST LINE CONTMT ISOL PILOT	12050-FM-096B1/17/D4	CONTMT	241'	5	R	I	VENT	VENT	NO	12050-SI-033/5	N/A		
2047	1, 2	08B	2-SI-SOV-2850B	SI/ACCUM TEST ISOL PILOT	12050-SI-022/2	CONTMT	221'	14.5	R	21,36,19	VENT	VENT	NO	N/A		2-SI-HCV-2850B	
4277	1, 2	08B	2-SI-SOV-2850D	SI/ACCUM TEST ISOL PILOT	12050-SI-024/2	CONTMT	221'	8.8	R	22,36	VENT	VENT	NO	12050-SI-024/2		2-SI-HCV-2850D	
4280	1, 2	08B	2-SI-SOV-2850F	SI/ACCUM TEST ISOL PILOT	12050-SI-026/2	CONTMT	221'	4	R	22	VENT	VENT	NO	12050-SI-026/2		N/A	
7126	1	08B	2-SI-SOV-2859	SI/ACCUM TEST LINE CONTMT ISOL PILOT	12050-FM-096A2/24/F7	SFGD	267'	--	R	I	VENT	VENT	NO	12050-SI-035/4		N/A	
7128	1	08B	2-SI-SOV-2936	SI/WASTE GAS FLTR RETURN ISOL PILOT	12050-FM-096B1/17/ES	CONTMT	248'	11	R	I	VENT	VENT	NO	12050-SI-014/5		N/A	
7194	1	08B	2-SS-SOV-200A	SS/PZR LIQUID SAMPLING CONTMT ISOL PILOT	12050-FM-089B1/17/C8	CONTMT	253'	9.5	R	I	VENT	VENT	NO	12050-SS-001/6		N/A	
7196	2	08B	2-SS-SOV-200B	SS/PZR LIQUID SAMPLING CONTMT ISOL PILOT	12050-FM-089B1/17/B8	AUX	249'	11.5/JK	R	I	VENT	VENT	NO	12050-SS-002/6		N/A	
7200B	1	08B	2-SS-SOV-201A	SS/PRESSURIZER VAPOR SAMPLE ISOL PILOT	12050-FM-089B1/17/B8	CONTMT	253'	9	R	I	VENT	VENT	NO	N/A		N/A	
7200D	2	08B	2-SS-SOV-201B	SS/PRESSURIZER VAPOR SAMPLE ISOL PILOT	12050-FM-089B1/17/B8	AUX	249'	11.5/JK	R	I	VENT	VENT	NO	N/A		N/A	
7198	1	08B	2-SS-SOV-204A	SS/PZR RLF TK GAS SAMPLING CONTMT ISOL PILOT	12050-FM-089B1/17/B8	CONTMT	253'	9	R	I	VENT	VENT	NO	12050-SS-008/6		N/A	
7200	2	08B	2-SS-SOV-204B	SS/PZR RLF TK GAS SAMPLING CONTMT ISOL PILOT	12050-FM-089B1/17/B8	AUX	249'	11.5/JK	R	I	VENT	VENT	NO	12050-SS-009/7		N/A	
7202	1	08B	2-SS-SOV-212A	SS/SG SURFACE SAMPLE CONTMT ISOL	12050-SS-027/7	CONTMT	253'	9.5	R	I	VENT	VENT	NO	12050-SS-027/7		N/A	
7204	2	08B	2-SS-SOV-212B	SS/SG SURFACE SAMPLE CONTMT ISOL PILOT	12050-FM-089B1/17/C3	AUX	246'	11.5/JK	R	I	VENT	VENT	NO	12050-SS-028/5		N/A	
1235	1, 2	08B	2-SS-TV-202A	SS/COLD LEG SAMPLE HEADER ISOL	12050-FM-089B1/17/D6	CONTMT	241' A	9.5	S	R A,40	CLOSED	OP/CL	YES	12050-SS-005/6; 12050-FK-1D		N/A	
1235	1, 2	08B	2-SS-TV-202A	SS/COLD LEG SAMPLE HEADER ISOL	12050-FM-089B1/17/D6	CONTMT	253' A	9.5	R	I,40	CLOSED	CLOSED	NO	12050-SS-005/6; 12050-FK-1D		N/A	
1236	1, 2	08B	2-SS-TV-202B	SS/RC COLD LEG SAMPLE ISOL	12050-FM-089B1/17/D6	AUX	245'	11.5/JK	S	R A,40	CLOSED	OP/CL	YES	12050-SS-006/6		N/A	
1236	2	08B	2-SS-TV-202B	SS/RC COLD LEG SAMPLE ISOL	12050-FM-089B1/17/D6	AUX	245'	11.5/JK	R	I,40	CLOSED	CLOSED	NO	12050-SS-006/6		N/A	
4267	1, 2	08B	2-SS-TV-203A	SS/SAMPLING SYSTEM ISOL	12050-FM-089B1/17/F7	CONTMT	241'	9	S	R A,40	CLOSED	OP/CL	YES	N/A		N/A	
4267	1	08B	2-SS-TV-203A	SS/SAMPLING SYSTEM ISOL	12050-FM-089B1/17/F7	CONTMT	259'	9	R	I,40	CLOSED	CLOSED	NO	N/A		N/A	

ORR - 200A UNIT 2  
SAFE SHUT-DOWN EQUIPMENT LIST (SSEL)  
COMPOSITE SSEL  
(Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: HA2\_SSEL.DBF / 05/20/97 / 13:04:12  
Sort Criteria: Class, ID Number  
Filter Criteria: <none>  
Program File Name & Version: SSEL 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Fir. Elv.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING Dwg. No./Rev.	SYS. & SUPPORTING COMPONENTS	REQ'D INTERCONNECTIONS	REG. ISSUE
(1)	(2)	(3)	(4)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	
4268	1, 2	088	2-SS-TV-203B	SS/SAMPLING SYSTEM ISOL	12050-FM-089B1/17/F5	AUX	245'	12/F	S R A,40	CLOSED	OP/CL	YES	N/A	N/A	N/A	
4268	2	088	2-SS-TV-203B	SS/SAMPLING SYSTEM ISOL	12050-FM-089B1/17/F5	AUX	259'	12/F	R I,40	CLOSED	CLOSED	NO	N/A	N/A	N/A	
1223	1, 2	088	2-SS-TV-206A	SS/HOT LEG SAMPLE HEADER ISOL	12050-FM-089B1/17/E6	CONTMT	241'	9.5	S R A,40	CLOSED	OP/CL	YES	12050-SS-015/5; 12050-FK-1D	N/A	N/A	
1223	1	088	2-SS-TV-206A	SS/HOT LEG SAMPLE HEADER ISOL	12050-FM-089B1/17/E6	CONTMT	253' A	9.5	R I,40	CLOSED	CLOSED	NO	12050-SS-015/5; 12050-FK-1D	N/A	N/A	
1224	1, 2	088	2-SS-TV-206B	SS/HOT LEG SAMPLE ISOL	12050-FM-089B1/17/E6	AUX	245'	11.5/JK	S R A,40	CLOSED	OP/CL	YES	12050-SS-010/5; 12050-SS-011/5	N/A	N/A	
1224	2	088	2-SS-TV-206B	SS/HOT LEG SAMPLE ISOL	12050-FM-089B1/17/E6	AUX	249'	11.5/JK	R I,40	CLOSED	CLOSED	NO	12050-SS-010/5; 12050-SS-011/5	N/A	N/A	
4265	1, 2	088	2-SS-TV-207A	SS/RHR HX OUTLET TO SAMPLING SYSTEM	12050-FM-089B1/17/F8	CONTMT	232'	4	S R --	CLOSED	OPEN	YES	N/A	N/A	N/A	
4266	1, 2	088	2-SS-TV-207B	SS/RHR HX OUTLET TO SAMPLING SYSTEM	12050-FM-089B1/17/F8	CONTMT	2	1	S R --	CLOSED	OPEN	YES	N/A	N/A	N/A	
1222	1, 2	088	2-SS-TV-208D	SS/HOT LEG SAMPLE ISOL	12050-FM-089B1/17/D8	CONTMT	243' C	8.5	S R --	CLOSED	OPEN	YES	12050-SS-017/6	N/A	N/A	
1230	1, 2	088	2-SS-TV-209A	SS/COLD LEG SAMPLE ISOL	12050-FM-089B1/17/D8	CONTMT	241' CA	14	S R --	CLOSED	OPEN	NO	12050-SS-018/5	N/A	N/A	
7206	1	088	2-SV-SOV-202-1A	SV/AIR EJECTOR DISCH CONTMT ISOL PILOT	12050-FM-072A2/19/C3	MSVH	272'	13.4/HA	R I	VENT	VENT	NO	12050-SV-010	N/A	N/A	
7208	1	088	2-SV-SOV-202-2	SV/AIR EJECTOR DISCH CONTMT ISOL PILOT	12050-FM-072A2/19/B3	TB	279'	16/C	R I	VENT	VENT	NO	12050-SV-009	N/A	N/A	
7210	2	088	2-SV-SOV-203	SV/RADIATION MONITORING RETURN CONTMT ISOL PILOT	12050-FM-072A2/17/D3	MSVH	272'	13.4/HA	R I	VENT	VENT	NO	12050-SV-011/6	N/A	N/A	
7156	1	088	2-VG-SOV-200A	VG/PRIMARY VENT HDR CONTMT ISOL PILOT	12050-FM-090C1/17/F4	AUX	244'	12/J	S R I	ATR	VENT	NO	12050-VG-001/4	N/A	N/A	
7158	2	088	2-VG-SOV-200B	VG/PRIMARY VENT HDR CONTMT ISOL PILOT	12050-FM-090C1/17/D4	CONTMT	251'	10	S R I	AIR	VENT	NO	12050-VG-002/6	N/A	N/A	
5260	1	10	1-HV-AC-1	HV/CONTROL ROOM AIR CONDITIONER	11715-FB-044C3/07/E8	SB	277'	10/D	S R --	ON	ON	YES	N/A	N/A	N/A	
5270	2	10	1-HV-AC-2	HV/CONTROL ROOM AIR CONDITIONER	11715-FB-044C3/07/E8	SB	277'	10/D	S R --	ON	ON	YES	N/A	N/A	N/A	
5279	1	10	1-HV-AC-6	HV/RELAY ROOM AIR COND.	11715-FB-044C3/07/B7	SB	252'	12/D	S R --	ON	ON	YES	11715-FB-40A/13	N/A	N/A	
5279	2	10	1-HV-AC-7	HV/RELAY ROOM AIR COND.	11715-FB-044C3/07/B7	SB	252'	12/D	S R --	ON	ON	YES	11715-FB-40A/13	N/A	N/A	
5238	1	10	2-HV-AC-6	HV/RELAY ROOM AIR COND.	11715-FB-044C3/07/B7	SB	252'	12/D	S R --	ON	ON	YES	N/A	N/A	N/A	
5248	2	10	2-HV-AC-7	HV/RELAY ROOM AIR COND.	11715-FB-044C3/07/B7	SB	252'	12/D	S R --	ON	ON	YES	N/A	N/A	N/A	

NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

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 Sort Criteria: Class, ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO	EQUIP TRAIN CLASS	MARK NO	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT NOTES	Normal	ST. Desired	POWER REQD?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
5259	1	10	2-HV-AC-8	HV/CONTROL ROOM AIR CONDITIONER	11715-FB-044C3/07/EB	SB	277'	10/D	S R	--	ON	ON	YES	11715-FB-40A2/13	N/A	
5269	2	10	2-HV-AC-9	HV/CONTROL ROOM AIR CONDITIONER	11715-FB-044C3/07/EB	SB	277'	10/D	S R	--	ON	ON	YES	11715-FB-40A2/13	N/A	
5226G	1	11	2-HV-E-4A	HV/CHILLER UNIT	11715-FB-040D2/13/E5	SB	254'	CHILLER RM 11/D	S	--	ON	ON	YES	11715-FB-040A2	2-EP-MC-10	
5226H	1	11	2-HV-E-4B	HV/CHILLER UNIT	11715-FB-040D2/13/B5	SB	254'	CHILLER RM 12/D	S	--	ON	ON	YES	11715-FB-040A2	2-EP-MC-11	
5226I	2	11	2-HV-E-4C	HV/CHILLER UNIT	11715-FB-040D2/13/D5	SB	254'	CHILLER RM 12/D	S	--	ON	ON	YES	11715-FB-040A2	2-EP-MC-41	
6057	1	14	2-BP-SW-1	BP/BY-PASS SWITCH 1 (MANUAL)	12050-FE-001V1/3/J2	SB	276'	CR	S	--	INVERT	INVERT	YES	N/A	2-VB-I-01	
6058	1	14	2-BP-SW-2	BP/BY-PASS SWITCH 2 (MANUAL)	12050-FE-001V1/3/J4	SB	276'	CR	S	--	INVERT	INVERT	YES	N/A	2-VB-I-02	
6059	2	14	2-BP-SW-3	BP/BY-PASS SWITCH 3 (MANUAL)	12050-FE-001V1/3/J6	SB	276'	CR	S	--	INVERT	INVERT	YES	N/A	2-VB-I-03	
6060	2	14	2-BP-SW-4	BP/BY-PASS SWITCH 4 (MANUAL)	12050-FE-001V1/3/J8	SB	276'	CR	S	--	INVERT	INVERT	YES	N/A	2-VB-I-04	
6061	1	14	2-EP-CB-04A	EP/120V VITAL AC 2-I BUS (RED & ORANGE)	12050-FE-001V1/3/A1	SB	276' 9"	9/C	S R	--	N/A	N/A	YES	N/A	2-BP-SW-01	
6062	1	14	2-EP-CB-04B	EP/120V VITAL AC 2-II BUS (WHITE)	12050-FE-001V1/3/A3	SB	276' 9"	9/C	S R	--	N/A	N/A	YES	N/A	2-BP-SW-02	
6063	2	14	2-EP-CB-04C	EP/120V VITAL AC 2-III BUS (BLUE & PURPLE)	12050-FE-001V1/3/A5	SB	276' 9"	9/C	S R	--	N/A	N/A	YES	N/A	2-BP-SW-03	
6064	2	14	2-EP-CB-04D	EP/120V VITAL AC 2-IV BUS (YELLOW)	12050-FE-001V1/3/A8	SB	276' 9"	CR	S R	--	N/A	N/A	YES	N/A	2-BP-SW-04	
6045	1	14	2-EP-CB-12A	EP/125V VITAL DC BUS (2-I)	12050-FE-001E1/15/B9	SB	254'	9/C	S R	--	N/A	N/A	YES	N/A	2-BY-C-02, -03, -04 2-BY-B-01	
6046	1	14	2-EP-CB-12B	EP/125V VITAL DC BUS (2-II)	12050-FE-001E1/15/B9	SB	254'	9/C	S R	--	N/A	N/A	YES	N/A	2-BY-C-02, -03, -04 2-BY-B-02	
6047	2	14	2-EP-CB-12C	EP/125V VITAL DC BUS (2-III)	12050-FE-001E1/15/B5	SB	252'	8/C	S R	--	N/A	N/A	YES	N/A	2-BY-C-05, -06, -07 2-BY-B-03	
6048	2	14	2-EP-CB-12D	EP/125V VITAL DC BUS (2-IV)	12050-FE-001E1/15/B7	SB	254'	8/C	S R	--	N/A	N/A	YES	N/A	2-BY-C-05, -06, -07 2-BY-B-04	
6035	1	14	2-EP-CB-16A	EP/120V SEMI-VITAL AC 2A BUS	12050-FE-001W1/13/B2	SB	276' 9"	CR	S R	--	N/A	N/A	YES	N/A	TRANS-70-2	
6037	2	14	2-EP-CB-16B	EP/120V SEMI-VITAL AC 2B BUS	12050-FE-001W1/13/B, J-5	SB	276' 9"	CR	S R	--	N/A	N/A	YES	N/A	TRANS-71-2	
5573*	1	14	2-EP-CB-42AN	EP/HEAT TRACE DISTRIBUTION CABINET	12050-FE-063 SERIES	AFPH	271'	--	S R	30	ON	ON	YES	N/A	N/A	
5585*	2	14	2-EP-CB-42AR	EP/HEAT TRACE DISTRIBUTION CABINET	12050-FE-063 SERIES	AFPH	271'	--	S R	30	ON	ON	YES	N/A	N/A	
5574*	1	14	2-EP-CB-42BN	EP/HEAT TRACE DISTRIBUTION CABINET	12050-FE-063 SERIES	AFPH	271'	--	S R	30	ON	ON	YES	N/A	N/A	



NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
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 Sort Criteria: Class, ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	TRAIN	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elv.	LOCATION Rm. nr Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQD?	SUPPORTING ENG. NO./REV.	SYS. & SUPPORTING COMPONENTS	REQ'D INTERCONNECTIONS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	
5586*	2	14	2-EP-CB-42BR	EP/HEAT TRACE DISTRIBUTION CABINET	12050-FE-063 SERIES	AFPH	271'	--	S R	30	ON	ON	YES	N/A		N/A	
6049	1	15	2-BY-B-01	BY/125V BATTERY 2-I	12050-FE-001E1/15/B2	SB	294'	9/C	S	--	N/A	N/A	YES	N/A		N/A	
6050	1	15	2-BY-B-02	BY/125V BATTERY 2-II	12050-FE-001E1/15/B4	SB	252'	9/C	S	--	N/A	N/A	YES	N/A		N/A	
6051	2	15	2-BY-B-03	BY/125V BATTERY 2-III	12050-FE-001E1/15/B5	SB	294'	8/Db	S	--	N/A	N/A	YES	N/A		N/A	
6052	2	15	2-BY-B-04	BY/125V BATTERY 2-IV	12050-FE-001E1/15/B7	SB	252'	8/D	S	--	N/A	N/A	YES	N/A		N/A	
6065	1	15	2-EG-B-02B	AP/EDG BATTERIES AND RACKS	12050-1.30-212C	SB	272'	EDG2H	S	--	N/A	N/A	NO	N/A		N/A	
6066	2	15	2-EG-B-04D	AP/EDG BATTERIES AND RACKS	12050-1.30-212C	SB	272'	EDG2J	S	--	N/A	N/A	NO	N/A		N/A	
		16	1-EG-BC-02	BATTERY CHARGERS FOR EDG				SERVICE									
		16	1-EG-BC-04D	BATTERY CHARGERS FOR EDG				SERVICE									
6040	1	16	2-BY-C-02	BY/BATTERY CHARGER 2-I	12050-FE-001E1/15/B2	SB	252'	9/C	S R	--	N/A	N/A	YES	N/A		2-EP-MC-10	
6039			2-BY-C-03	BY/BATTERY CHARGER 2C-I	12050-FE-001E1/15/A2	SB	254'	EMER SWGR	S R	--	N/A	N/A	YES	N/A		2-EP-MC-10	
6041			2-BY-C-04	BY/BATTERY CHARGER 2-II	12050-FE-001E1/15/B4	SB	254'	EMER SWGR	S R	--	N/A	N/A	YES	N/A		2-EP-MC-10	
6043	2	5	2-BY-C-05	BY/BATTERY CHARGER 2-III	12050-FE-001E1/15/B5	SB	252'	9/C	S R	--	N/A	N/A	YES	N/A		2-EP-MC-11	
6042	2	16	2-BY-C-06	BY/BATTERY CHARGER 2C-II	12050-FE-001E1/15/A5	SB	254'	EMER SWGR	S R	--	N/A	N/A	YES	N/A		2-EP-MC-11	
6044	2	16	2-BY-C-07	BY/BATTERY CHARGER 2-IV	12050-FE-001E1/15/B7	SB	252'	8/C	S R	--	N/A	N/A	YES	N/A		2-EP-MC-11	
6053	1	16	2-VB-I-01	VB/INVERTOR TO VITAL 2-I BUS	12050-FE-001E1/15/C2	SB	252'	9/C	S R	--	N/A	N/A	YES	N/A		2-EP-CB-12A	
6054	1	16	2-VB-I-02	VB/INVERTOR TO VITAL 2-II BUS	12050-FE-001E1/15/C3	SB	252'	9/C	S R	--	N/A	N/A	YES	N/A		2-EP-CB-12B	
6055	2	16	2-VB-I-03	VB/INVERTOR TO VITAL 2-III BUS	12050-FE-001E1/15/C5	SB	252'	8/C	S R	--	N/A	N/A	YES	N/A		2-EP-CB-12C	
6056	2	16	2-VB-I-04	VB/INVERTOR TO VITAL 2-IV BUS	12050-FE-001E1/15/C7	SB	252'	8/C	S R	--	N/A	N/A	YES	N/A		2-EP-CB-12D	
6001	1	17	EDG-2H*	AP/EMERGENCY DIESEL GENERATOR 2H	12050-FE-001A1/10/E6	SB	279'	15/D	S R	--	OFF	ON	YES	N/A		2-BY-B-01,-02	
6002	2	17	EDG-2J*	AP/EMERGENCY DIESEL GENERATOR 2J	12050-FE-001A1/10/A6	SB	272'	17/D	S R	--	OFF	ON	YES	N/A		2-BY-B-03,-04	
1147	1	18	1-CH-LT-1102	CH/BAST C LEVEL	11715-FM-095A1/22/E7	AUX	262'	9.5/G	S R	--	ON	ON	YES	11715-CH-039/3		N/A	
1146	2	18	1-CH-LT-1163	CH/BAST B LEVEL	11715-FM-095A1/22/E5	AUX	274'	9/H	S R	--	ON	ON	YES	11715-CH-048/3		N/A	
1148	1	18	1-CH-LT-1165	CH/BAST C LEVEL	11715-FM-095A1/22/E8	AUX	289'	9.2/H	S R	--	ON	ON	YES	11715-CH-040/4		N/A	
1150	1	18	1-CH-TIC-1103	CH/BAST C TEMPERATURE	11715-FM-095A1/22/E8	AUX	274'	9.8/GH	S R	--	ON	ON	YES	11715-CH-037/5		N/A	
1149	1	18	1-CH-TIC-1164	CH/BAST B TEMPERATURE	11715-FM-095A1/22/E5	AUX	274'	9.1/GH	S R	--	ON	ON	YES	11715-CH-043/3		N/A	
1151	1	18	1-CH-TIC-1166	CH/BAST C TEMPERATURE	11715-FM-095A1/22/E7	AUX	274'	9.5/GH	S R	--	ON	ON	YES	11715-CH-038/2		N/A	

NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
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 Sort Criteria: Class,IG Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	TRAIN CLASS	EQUIP CLASS	MARK NO	SYSTEM/EQUIPMENT DESCRIPTION	Dwg No./Rev./Zone	Building	EQUIPMENT Flr Elv	LOCATION Rm or Row/Col	SORT	NOTES	OP Normal	ST Desired	POWER REQD?	SUPPORTING DWG NO./REV.	SYS. & SUPPORTING	REQ'D INTERCONNECTIONS	REG. COMPONENTS	ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)		
5265	1	18	1-HV-TT-155	HV/CONTROL ROOM TEMP. TRANS.	11715-FB-044C3/07/E8	SB	277'	10/D	S	R --	ON	ON	YES	N/A		1-HV-AC-1		
5275	2	18	1-HV-TT-164	HV/CONTROL ROOM TEMP. TRANS.	11715-FB-044C3/07/E8	SB	277'	10/D	S	R --	ON	ON	YES	N/A		1-HV-AC-2		
5244	1	18	1-HV-TT-166	HV/RELAY ROOM TEMP. TRANS.	11715-FB-044C3/07/B7	SB	252'	12/D	S	R 36	ON	ON	YES	N/A		1-HV-AC-6		
5255	2	18	1-HV-TT-167	HV/RELAY ROOM TEMP. TRANS.	11715-FB-044C3/07/B7	SB	252'	12/D	S	R 36	ON	ON	YES	N/A		1-HV-AC-7		
5003	1	18	2-CC-FT-200A	CC/CCW HX OUTLET FLOW	11715-FM-079A2/18/E4	AUX	259'	9.5/F	S	R --	ON	ON	YES	12050-CC-002/4		N/A		
5007	1	18	2-CC-FT-200B	CC/CCW HX OUTLET FLOW	11715-FM-079A2/18/D4	AUX	259'	9.5/F	S	R --	ON	ON	YES	12050-CC-002/4		N/A		
5054	1	18	2-CC-FT-232A	CC/CC HX FLOW TO RHR HX	12050-FM-079A1/19/F6	CONTMT	233' A	17.5	S	R --	ON	ON	YES	12050-CC-047/4; 12050-FX-1B		N/A		
5062	1	18	2-CC-FT-232B	CC/CC HX FLOW TO RHR HX	12050-FM-079A1/19/F5	CONTMT	233' A	17.5	S	R --	ON	ON	YES	12050-CC-048/4; 12050-FX-1B		N/A		
5011	1	18	2-CC-PT-200	CC/CCW HX OUTLET PRESSURE	11715-FM-079A2/18/D3	AUX	245'	10.1/G	S	R --	ON	ON	YES	12050-CC-096/3		N/A		
1081	1	18	2-CH-E/P-2122	CH/CHARGING FLOW TO REGEN HX	12050-CH-001/6	AUX	250'	12/H	R	--	ON	ON	YES	N/A		N/A		
1098	1	18	2-CH-E/P-2186	CH/CCP TO RCP SEAL INJECTION	12050-CH-068/1	AUX	245'	9.8/L	R	--	ON	ON	YES	12050-CH-068/1		N/A		
1200	2	18	2-CH-E/P-HCV-2137	CH/EXCESS LETDOWN HX ISOL E/P	12050-CH-041/3	CONTMT	217'	11	R	--	ON	ON	YES	N/A		RACK 2-108		
1176	1	18	2-CH-FT-2110	CH/BAST TO VCT FLOW	12050-FM-095B1/22/B4	AUX	274'	9.6/J	S	R --	ON	ON	YES	12050-CH-015/4		N/A		
1167	2	18	2-CH-FT-2113	CH/BAST TO VCT FLOW	12050-FM-095B1/22/B4	AUX	274'	9.6/J	S	R --	ON	ON	YES	12050-CH-017/9		N/A		
1082	1	18	2-CH-FT-2122	CH/CHARGING FLOW TO REGEN HX	12050-FM-095C1/20/C4	AUX	245'	12/H	S	R --	ON	ON	YES	12050-CH-001/6		N/A		
1104	1, 2	18	2-CH-FT-2124	CH/RCP SEAL WATER INJECTION FLOW	12050-FM-095C2/14/C3	AUX	245'	11.7/HJ	S	R 20	ON	ON	YES	N/A		N/A		
1106	1, 2	18	2-CH-FT-2127	CH/RCP SEAL WATER INJECTION FLOW	12050-FM-095C2/14/B3	AUX	245'	11.6/HJ	S	R 20	ON	ON	YES	N/A		N/A		
1108	1, 2	18	2-CH-FT-2130	CH/RCP SEAL WATER INJECTION FLOW	12050-FM-095C2/14/A3	AUX	245'	11.6/HJ	S	R 20	ON	ON	YES	N/A		N/A		
1052	1	18	2-CH-LT-2112	CH/VCT LEVEL	12050-FM-095B1/22/D5	AUX	275'	9.1/J	S	R --	ON	ON	YES	12050-CH-011/8		N/A		
1050	1	18	2-CH-LT-2115	CH/VCT LEVEL	12050-FM-095B1/22/D5	AUX	275'	9.1/J	S	R --	ON	ON	YES	12050-CH-012/4		N/A		
4121	1	18	2-CN-LT-200A	CN/CONDENSATE STORAGE TANK LEVEL	12050-FM-074A3/29/D3	AFPH	271'	--	S	R --	ON	ON	YES	12050-CN-069/4		N/A		
4122	1	18	2-CN-LT-200B	CN/CONDENSATE STORAGE TANK LEVEL	12050-FM-074A3/29/D3	AFPH	275'	--	S	R --	ON	ON	YES	12050-CN-001/8 12050-FP-2J 12050-IP-2K		N/A		
4104	1	18	2-CN-LT-204	CN/CONDENSATE STORAGE TANK LEVEL	12050-FM-073A/30/B6	YARD	302'	2/NB	R	--	ON	ON	YES	12050-CN-002/5		N/A		
4177	1	18	2-FW-FT-200A	FW/AFWP TO SG A FLOW	12050-FM-074A1/27/D6	AFPH	273'	NOTE 2D	S	R --	ON	ON	YES	12050-FW-050/6		N/A		
4161	2	18	2-FW-FT-200B	FW/AFWP TO SG B FLOW	12050-FM-074A1/27/C6	AFPH	273'	--	S	R --	ON	ON	YES	12050-FW-051/6		N/A		

NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
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 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elv.	LOCATION Rm. or Row/Col.	SORT NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
4165	2	18	2-FW-FT-200C	FW/AFWP TO SG C FLOW	12050-FM-074A1/27/B7	AFPH	273'	16/M	S	R	--	ON	ON	YES	12050-FW-052/6	N/A
4185	1	18	2-FW-LT-2474	FW/SG A LEVEL	12050-FM-074A1/27/F7	CONTMT	261'	13.5	S	R	--	ON	ON	YES	12050-FW-091/8	N/A
4187	1	18	2-FW-LT-2475	FW/SG A LEVEL	12050-FM-074A1/27/F6	CONTMT	241'	A 17.5	S	R	--	ON	ON	YES	12050-FW-097/7; RACK 2-104	12050-FK-1B
4189	1	18	2-FW-LT-2476	FW/SG A LEVEL	12050-FM-074A1/27/F6	CONTMT	261'	15	S	R	--	ON	ON	YES	12050-FW-103/7	N/A
4181	1	18	2-FW-LT-2477	FW/SG A LEVEL	12050-FM-074A1/27/F8	CONTMT	241'	A 17.5	S	R	--	ON	ON	YES	12050-FW-088/7; RACK 2-104	12050-FK-1B
4197	2	18	2-FW-LT-2484	FW/SG B LEVEL	12050-FM-074A1/27/D7	CONTMT	241'	A 8.8	S	R	--	ON	ON	YES	12050-FW-093/7; RACK 2-120	12050-FK-1C
4199	2	18	2-FW-LT-2485	FW/SG B LEVEL	12050-FM-074A1/27/D6	CONTMT	241'	A 8.2	S	R	--	ON	ON	YES	12050-FW-099/7; RACK 2-117	12050-FK-1C
4201	2	18	2-FW-LT-2486	FW/SG B LEVEL	12050-FM-074A1/27/D6	CONTMT	261'	8.2	S	R	--	ON	ON	YES	12050-FW-105/7	N/A
4193	2	18	2-FW-LT-2487	FW/SG B LEVEL	12050-FM-074A1/27/D8	CONTMT	241'	A 9	S	R	--	ON	ON	YES	12050-FW-089/8; RACK 2-120	12050-FK-1C
4207	3	18	2-FW-LT-2494	FW/SG C LEVEL	12050-FM-074A1/27/C7	CONTMT	261'	4.8	S	R	--	ON	ON	YES	12050-FW-095/7; RACK 2-115	
4209	3	18	2-FW-LT-2495	FW/SG C LEVEL	12050-FM-074A1/27/C7	CONTMT	261'	5.5	S	R	--	ON	ON	YES	12050-FW-101/8; RACK 2-114	
4211	3	18	2-FW-LT-2496	FW/SG C LEVEL	12050-FM-074A1/27/C6	CONTMT	241'	A 4	S	R	--	ON	ON	YES	12050-FW-107/7; RACK 2-101	12050-FK-1B
4203	3	18	2-FW-LT-2497	FW/SG C LEVEL	12050-FM-074A1/27/C8	CONTMT	241'	A 3.8	S	R	--	ON	ON	YES	12050-FW-090/7; RACK 2-101	12050-FK-1B
4146	2	18	2-FW-PC-259A	FW/PRESSURE CONTROL	12050-FM-074A3/29/F8	AFPH	273'	--	S	R	--	ON	ON	YES	12050-FW-053/5	N/A
4151	2	18	2-FW-PC-259B	FW/PRESSURE CONTROL	12050-FM-074A3/29/E8	AFPH	273'	--	S	R	--	ON	ON	YES	12050-FW-054/5	N/A
4136	1	18	2-FW-PI-256A	FW/TDAFWP SUCTION (LOCAL)	12050-FM-074A3/29/B7	AFPH	275'	--	S	--	--	N/A	N/A	NO	N/A	N/A
4130	2	18	2-FW-PI-256B	FW/MDAFWP SUCTION (LOCAL)	12050-FM-074A3/29/B6	AFPH	274'	--	S	--	--	N/A	N/A	NO	12050-FP-2K	2-FW-P-3A
4124	2	18	2-FW-PI-256C	FW/MDAFWP SUCTION (LOCAL)	12050-FM-074A3/29/B5	AFPH	275'	--	S	--	--	N/A	N/A	NO	12050-FP-2J	2-FW-P-3B
															12050-FP-2K	
4150	2	18	2-FW-PT-201A	FW/AFWP TO SG B PRESSURE	12050-FM-074A3/29/F8	AFPH	273'	--	S	R	--	ON	ON	YES	12050-FW-016/4	N/A
4155	2	18	2-FW-PT-201B	FW/AFWP TO SG C PRESSURE	12050-FM-074A3/29/E8	AFPH	273'	--	S	R	--	ON	ON	YES	12050-FW-017/4	N/A
4158	1	18	2-FW-PT-201C	FW/AFWP TO SG A PRESSURE	12050-FM-074A3/29/E8	AFPH	273'	--	S	R	--	ON	ON	YES	12050-FW-150/5	N/A
4137	1	18	2-FW-PT-203A	FW/TDAFWP SUCTION PRESSURE	12050-FM-074A3/29/C7	AFPH	273'	--	S	R	--	ON	ON	YES	12050-FW-001/3	N/A
4131	2	18	2-FW-PT-203B	FW/MDAFWP SUCTION PRESSURE	12050-FM-074A3/29/C6	AFPH	273'	--	S	R	--	ON	ON	YES	12050-FW-002/4	N/A

NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA2\_SSEL.DBF / 05/20/97 / 13:04:12  
 Sort Criteria: Class, ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	TRAIN	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQD?	SUPPORTING SYS. DWG. NO./REV.	REQ'D & SUPPORTING COMPONENTS	INTERCONNECTIONS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	
4125	2	18	2-FW-PT-203C	FW/MDAFWP SUCTION PRESSURE	12050-FM-074A3/29/C5	AFPH	273'	--	S R	--	ON	ON	YES	12050-FW-003/4	N/A		
2040	1	18	2-GN-PT-234A	GN/N2 RESERVE PRESSURE	11715-FM-105A1/20/B8	CONTMT	290'	5.5	S R	--	ON	ON	YES	N/A	N/A		
2042	2	18	2-GN-PT-234B	GN/N2 RESERVE PRESSURE	11715-FM-105A1/20/B3	CONTMT	290'	5	S R	--	ON	ON	YES	N/A	N/A		
5199	1	18	2-HV-FS-2213A	HV/CHILLER FLOW SWITCH	11715-FB-040A2/13	SB	254'	CHILLER RM	S R	--	ON	ON	YES	N/A	N/A		
5205	2	18	2-HV-FS-2213B	HV/CHILLER FLOW SWITCH	11715-FB-040A2/13	SB	254'	CHILLER RM	S R	--	ON	ON	YES	N/A	N/A		
5205A	2	18	2-HV-FS-2213C	HV/CHILLER FLOW SWITCH	11715-FB-040A2/13	SB	254'	CHILLER RM	S R	--	ON	ON	YES	N/A	N/A		
5232	1	18	2-HV-FS-2215A	HV/CND WTR PUMP SEAL FLOW SWITCH	11715-FB-040D2/13	SB	254'	CHILLER RM	S R	--	ON	ON	YES	N/A	N/A		
5233	1	18	2-HV-FS-2215B	HV/CND WTR PUMP SEAL FLOW SWITCH	11715-FB-040D2/13	SB	254'	CHILLER RM	S R	--	ON	ON	YES	N/A	N/A		
5234	2	18	2-HV-FS-2215C	HV/CND WTR PUMP SEAL FLOW SWITCH	11715-FB-040D2/13	SB	254'	CHILLER RM	S R	--	ON	ON	YES	N/A	N/A		
5226M	1	18	2-HV-PC-2235A	HV/CR & RR WATER SYSTEM FLOW CONTROL	11715-FB-040D2/13/ES	SB	254'	CHILLER RM	S	--	VENT	VENT	NO	N/A	N/A		
5226N	1	18	2-HV-PC-2235B	HV/CR & RR WATER SYSTEM FLOW CONTROL	11715-FB-040D2/13/PS	SB	254'	CHILLER RM	S	--	VENT	VENT	NO	N/A	N/A		
5226O	2	18	2-HV-PC-2235C	HV/CR & RR WATER SYSTEM FLOW CONTROL	11715-FB-040D2/13/CS	SB	254'	CHILLER RM	S	--	VENT	VENT	NO	N/A	N/A		
5227	1	18	2-HV-PDS-2228A	HV/CND WTR STRAINER DIFF PRESS	11715-FB-040E2/13	SB	254'	CHILLER RM	S R	--	ON	ON	YES	N/A	N/A		
5228	1	18	2-HV-PDS-2228B	HV/CND WTR STRAINER DIFF PRESS	11715-FB-040E2/13	SB	254'	CHILLER RM	S R	--	ON	ON	YES	N/A	N/A		
5266	1	18	2-HV-TT-255	HV/CONTROL ROOM TEMP. TRANS.	11715-FB-044C3/07/E8	SB	277'	10/D	S R	36	ON	ON	YES	N/A	2-HV-AC-8		
5276	2	18	2-HV-TT-264	HV/CONTROL ROOM TEMP. TRANS.	11715-FB-044C3/07/E8	SB	277'	10/D	S R	36	ON	ON	YES	N/A	2-HV-AC-8		
5245	1	18	2-HV-TT-266	HV/RELAY ROOM TEMP. TRANS.	11715-FB-044C3/07/B7	SB	252'	12/D	S R	36	ON	ON	YES	N/A	2-HV-AC-6		
5256	2	18	2-HV-TT-267	HV/RELAY ROOM TEMP. TRANS.	11715-FB-044C3/07/B7	SB	252'	12/D	S R	36	ON	ON	YES	N/A	2-HV-AC-7		
4007	1	18	2-MS-PT-201A	MS/SG A STEAM PRESSURE	12050-FM-070B1/18/C6	QSPH	272'	14/GA	S R	--	ON	ON	YES	12050-MS-053/7	N/A		
4035	2	18	2-MS-PT-201B	MS/SG B STEAM PRESSURE	12050-FM-070B2/20/C5	QSPH	256'	13.7/GB	S R	--	ON	ON	YES	12050-MS-054/7	RACK 2-802		
4063	3	18	2-MS-PT-201C	MS/SG C STEAM PRESSURE	12050-FM-070B3/19/B6	QSPH	256'	14.1/GA	S R	--	ON	ON	YES	12050-MS-055/7	N/A		
4003	1	18	2-MS-PT-2474	MS/SG A STEAM PRESSURE	12050-FM-070B1/18/D7	QSPH	256'	6/GB	S R	9	ON	ON	YES	12050-MS-158/4	RACK 2-802		
4005	2	18	2-MS-PT-2476	MS/SG A STEAM PRESSURE	12050-FM-070B1/18/C6	QSPH	256'	6/GB	S R	9	ON	ON	YES	12050-MS-162/5	RACK 2-801		
4031	1	18	2-MS-PT-2485	MS/SG B STEAM PRESSURE	12050-FM-070B2/20/C7	QSPH	256'	16/GB	S R	9	ON	ON	YES	12050-MS-164/4	RACK 2-802		
4033	2	18	2-MS-PT-2486	MS/SG B STEAM PRESSURE	12050-FM-070B2/20/C6	QSPH	256'	16/GB	S R	9	ON	ON	YES	12050-MS-168/5	RACK 2-801		

NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA2\_SSEL.DBF / 05/20/97 / 13:04:12  
 Sort Criteria: Class, ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	TRAIN	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elv.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP Normal	ST. Desired	POWER REQD?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
4059	2	18	2-MS-PT-2494	MS/SG C STEAM PRESSURE	12050-FM-070B3/19/B7	QSPH	256'	16/GB	S	R 9	ON	ON	YES	12050-MS-170/4	RACK 2-802	
4061	1	18	2-MS-PT-2496	MS/SG C STEAM PRESSURE	12050-FM-070B3/19/C6	QSPH	256'	16/GB	S	R 9	ON	ON	YES	12050-MS-174/6	RACK 2-801	
4015	1	18	2-MS-PY-201A	MS/SG A STEAM DUMP VALVE E/P TRANSDUCER	12050-MS-053/7	MSVH	272'	NOTE 2A	S	R --	ON	ON	YES	N/A	N/A	
4043	2	18	2-MS-PY-201B	MS/SG B STEAM DUMP VALVE E/P TRANSDUCER	12050-MS-054/7	MSVH	272'	NOTE 2B	S	R --	ON	ON	YES	N/A	N/A	
4071	3	18	2-MS-PY-201C	MS/SG C STEAM DUMP VALVE E/P TRANSDUCER	12050-MS-233/2	MSVH	272'	NOTE 2C	S	R --	ON	ON	YES	N/A	N/A	
7008	1, 2	18	2-QS-LI-201	QS/CHEMICAL ADD TANK LEVEL INDICATOR	12050-FM-091A1/20/D6	SB	277'	CR	S	R I	ON	ON	YES	12050-QS-006/3	2-EI-CB-05	
3051	1, 2	18	2-QS-LT-200A	QS/RWST LEVEL	12050-FM-091A1/20/D8	YARD	271'	--	S	R --	ON	ON	YES	12050-QS-003/8	N/A	
3052	1, 2	18	2-QS-LT-200B	QS/RWST LEVEL	12050-FM-091A1/20/D6	YARD	271'	--	S	R --	ON	ON	YES	12050-QS-004/8	N/A	
3053	1, 2	18	2-QS-LT-200C	QS/RWST LEVEL	12050-FM-091A1/20/D8	YARD	271'	--	S	R --	ON	ON	YES	12050-QS-016/9	N/A	
3054	1, 2	18	2-QS-LT-200D	QS/RWST LEVEL	12050-FM-091A1/20/D6	YARD	271'	--	S	R --	ON	ON	YES	12050-QS-017/8	N/A	
7007	1, 2	18	2-QS-LT-201	QS/CHEMICAL ADD TANK LEVEL XMTR	12050-FM-091A1/20/E6	YARD/TUNL	280'	15/L	S	R I	ON	ON	YES	12050-QS-006/3	2-EI-CB-230	
3033	1, 2	18	2-RC-LIS-2310	RC/RV HEAD ISOLATOR	13075-FM-093D1/06/E5	AUX	259' 6"	CABLE VAULT	S	R --	ON	ON	YES	N/A	N/A	
3034	1, 2	18	2-RC-LIS-2311	RC/HOT LEG ISOLATOR	13075-FM-093D1/06/F5	AUX	259' 6"	CABLE VAULT	S	R --	ON	ON	YES	N/A	N/A	
3029	1, 2	18	2-RC-LIS-2312	RC/SEAL TABLE ISOLATOR	13075-FM-093D1/06/B5	AUX	259' 6"	CABLE VAULT	S	R --	ON	ON	YES	N/A	N/A	
3042	1, 2	18	2-RC-LIS-2320	RC/HOT LEG ISOLATOR	13075-FM-093D2/06/D5	AUX	259' 6"	CABLE VAULT	S	R --	ON	ON	YES	N/A	N/A	
3043	1, 2	18	2-RC-LIS-2321	RC/RV HEAD ISOLATOR	13075-FM-093D2/06/E5	AUX	259' 6"	CABLE VAULT	S	R --	ON	ON	YES	N/A	N/A	
3047	1, 2	18	2-RC-LIS-2322	RC/SEAL TABLE ISOLATOR	13075-FM-093D2/06/A5	AUX	259' 6"	CABLE VAULT	S	R --	ON	ON	YES	N/A	N/A	
3030	1, 2	18	2-RC-LT-2310	RC/PLENUM LEVEL	13075-FM-093D1/06/E2	AUX	259' 6"	CABLE VAULT	S	R --	ON	ON	YES	N/A	N/A	
3032	1, 2	18	2-RC-LT-2311	RC/N-RANGE LEVEL	13075-FM-093D1/06/E4	AUX	259' 6"	CABLE VAULT	S	R --	ON	ON	YES	N/A	N/A	
3031	1, 2	18	2-RC-LT-2312	RC/W-RANGE LEVEL	13075-FM-093D1/06/E3	AUX	259' 6"	CABLE VAULT	S	R --	ON	ON	YES	N/A	N/A	
3046	1, 2	18	2-RC-LT-2320	RC/PLENUM LEVEL	13075-FM-093D2/06/F3	AUX	259' 6"	CABLE VAULT	S	R --	ON	ON	YES	N/A	N/A	
3044	1, 2	18	2-RC-LT-2321	RC/N-RANGE LEVEL	13075-FM-093D2/06/F7	AUX	259' 6"	CABLE VAULT	S	R --	ON	ON	YES	N/A	N/A	
3045	1, 2	18	2-RC-LT-2322	RC/W-RANGE LEVEL	13075-FM-093D2/06/F8	AUX	259' 6"	CABLE VAULT	S	R --	ON	ON	YES	N/A	N/A	
3005	1, 2	18	2-RC-LT-2459	RC/PZR LEVEL	12050-FM-093B1/25/C6	CONTMT	261'	4.8	S	R --	ON	ON	YES	12050-RC-061/8	RACK 2-115	
3007	1, 2	18	2-RC-LT-2460	RC/PZR LEVEL	12050-FM-093B1/25/C6	CONTMT	261'	5.5	S	R --	ON	ON	YES	12050-RC-062/7	RACK 2-114	

NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

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 Sort Criteria: Class, ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN	CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQD?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
3009	1, 2	18	2-RC-LT-2461	RC/PZR LEVEL	12050-FM-093B1/25/C4	CONTMT	261'	6	S R	---	ON	ON	YES	12050-RC-063/8	RACK 2-112	
3011	2	18	2-RC-LT-2462	RC/PZR LEVEL	12050-FM-093B1/25/C4	CONTMT	261'	6	S R	---	ON	ON	YES	12050-RC-064/4	RACK 2-112	
2027	1, 2	18	2-RC-LT-2470	RC/PRT LEVEL	12050-FM-093B2/26/C4	CG:HTMT	232'	5.5	S R	16	ON	ON	YES	12050-RC-035/3	N/A	
2001	1	18	2-RC-PT-2402	RC/REACTOR COOLANT WR PRESSURE	12050-FM-093A3/26/DB	CONTMT	241'	C 3.4	S R	---	ON	ON	YES	12050-RC-126/11 ;12050-FK-1B	N/A	
2002	1	18	2-RC-PT-2402-1	RC/REACTOR COOLANT WR PRESSURE	12050-FM-093A3/26/DB	CONTMT	241'	3.4	S R	---	ON	ON	YES	12050-RC-128/9	N/A	
2016	2	18	2-RC-PT-2444	RC/PZR PRESSURE	12050-FM-093B1/25/C4	CONTMT	261'	6	S R	---	ON	ON	YES	12050-RC-107/4	RACK 2-112	
2018	2	18	2-RC-PT-2445	RC/PZR PRESSURE	12050-FM-093B1/25/C4	CONTMT	261'	6	S R	---	ON	ON	YES	12050-RC-105/4	RACK 2-112	
2010	2	18	2-RC-PT-2455	RC/PZR PRESSURE	12050-FM-093B1/25/C6	CONTMT	261'	4	S R	---	ON	ON	YES	12050-RC-069/8	RACK 2-115	
2012	2	18	2-RC-PT-2456	RC/PZR PRESSURE	12050-FM-093B1/25/C5	CONTMT	261'	5.5	S R	---	ON	ON	YES	12050-RC-071/8	RACK 2-114	
2014	2	18	2-RC-PT-2457	RC/PZR PRESSURE	12050-FM-093B1/25/C4	CONTMT	261'	6	S R	---	ON	ON	YES	12050-RC-073/8	RACK 2-112	
2025	1, 2	18	2-RC-PT-2472	RC/PRT PRESSURE	12050-FM-093B2/26/C5	CONTMT	216'	6.8	S R	16	ON	ON	YES	12050-RC-041/3	RACK 2-111	
4261	1, 2	18	2-RH-E/P-HCV-275B	RH/RHR HX OUTLET E/P	12050-RH-005/1	CONTMT	216'	1.5	S R	---	ON	ON	YES	N/A	RACK 2-103	
4263	1, 2	18	2-RH-FT-2605	RH/RHR HX OUTLET FLOW	12050-FM-094A2/14/C4	CONTMT	216'	1.5	S R	---	ON	ON	YES	12050-RH-004/4	RACK 2-102	
4255	1, 2	18	2-RH-PIC-2602	RH/RHR PUMPS DISCHARGE PRESSURE	12050-FM-094A1/15/F7	CONTMT	216'	16	S R	---	ON	ON	YES	N/A	RACK 2-105	
4246	1, 2	18	2-RH-PT-2403	RH/RHR PUMP INLET PRESSURE	12050-FM-094A1/15/B5	CONTMT	245'	17	S R	---	ON	ON	YES	12050-FK-1B	N/A	
7036B	2	18	2-RS-LI-203A	RS/CASING COOLING TANK LEVEL INDICATOR	12050-FM-091B1/10/3D	SB	277'	8/C	S R	1	N/A	N/A	YES	12050-RS-029/7	2-RS-LT-203A	
7036F	2	18	2-RS-LI-203B	RS/CASING COOLING TANK LEVEL INDICATOR	12050-FM-091B1/10/3C	SB	277'	8/C	S R	1	N/A	N/A	YES	12050-RS-030/6	2-RS-LT-203B	
7036D	2	18	2-RS-LS-203A	RS/CASING COOLING TANK LEVEL SWITCH	12050-FM-091B1/10/3D	SB	252'	11/D	S R	1, 36	N/A	N/A	NO	12050-RS-029/7	2-EI-CB-23B	
7036G	2	18	2-RS-LS-203B	RS/CASING COOLING TANK LEVEL SWITCH	12050-FM-091B1/10/3C	SB	252'	11/D	S R	1, 36	N/A	N/A	NO	12050-RS-030/6	2-EI-CB-23D	
7036A	2	18	2-RS-LT-203A	RS/CASING COOLING TANK LEVEL XMTR	12050-FM-091B1/10/4D	YARD	270'	---	S R	1	N/A	N/A	YES	12050-RS-029/7	2-EP-CB-04B	
7036E	2	18	2-RS-LT-203B	RS/CASING COOLING TANK LEVEL XMTR	12050-FM-091B1/10/4C	YARD	270'	---	S R	1	N/A	N/A	YES	12050-RS-030/6	2-EP-CB-04D	
5009	1	19	2-CC-TE-200	CC/CCW HX OUTLET TEMP	11715-FM-079A2/18/D3	AUX	244'	10/G	S R	---	ON	ON	YES	12050-CC-082/3	N/A	
5052	1	19	2-CC-TE-201	CC/CCW PUMPS SUCTION HEADER TEMP	11715-FM-079A2/18/C7	AUX	244'	10/E	S R	---	ON	ON	YES	12050-CC-083/3	N/A	
5060	1	19	2-CC-TE-249A	CC/RHR HX COOLING WATER OUTLET TEMP	12050-FM-079A1/19/AB	AUX	244'	11/L	S R	---	ON	ON	YES	12050-CC-079/2	N/A	

NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA2 SSEL DBF / 05/20/97 / 13:04:12  
 Sort Criteria: Class, ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elv.	LOCATION Rm. or Row/Col	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(5)	(6)	(7)	(9)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
5068	1	19	2-CC-TE-249B	CC/RHR HX COOLING WATER OUTLET TEMP	12050-FM-079A1/19/C7	AUX	244'	11/L	S R --	ON	ON	YES	12050-CC-080/2	N/A	
5084	1	19	2-CC-TE-250A	CC/RHR PUMP SEAL COOLER OUTLET TEMP	12050-FM-079A5/17/C4	CONTMT	231'	1	S R --	ON	ON	YES	12050-CC-026/1	N/A	
5085	1	19	2-CC-TE-250B	CC/RHR PUMP SEAL COOLER OUTLET TEMP	12050-FM-079A5/17/B4	CONTMT	231'	1.5	S R --	ON	ON	YES	12050-CC-027/1	N/A	
1087	1	19	2-CH-TE-2123	CH/REGEN HX OUTLET CHARGING TEMP	12050-FM-095C1/20/E5	CONTMT	241'	6	S R --	N/A	N/A	YES	12050-CH-002/4; 12050-FM-40C	N/A	
5196	1	19	2-HV-TC-2200A	HV/CHILLED WATER P. DISCH. TEMP.	11715-FB-040A2/13	SB	254'	CHILLER RM	S R --	ON	ON	YES	N/A	N/A	
5202	2	19	2-HV-TC-2200B	HV/CHILLED WATER P. DISCH. TEMP.	11715-FB-040A2/13	SB	254'	CHILLER RM	S R --	ON	ON	YES	N/A	N/A	
5223	2	19	2-HV-TC-2200C	HV/CHILLED WATER P. DISCH. TEMP.	11715-FB-040A2/13/D6	SB	254'	CHILLER RM	S R --	OFF	ON	YES	N/A	N/A	
3037	1, 2	19	2-RC-TE-2313	RC/RVLIS TEMP	13075-FM-093D1/06/F6	CONTMT	281' 6"	10.5	S R --	ON	ON	YES	12050-RC-134/4	N/A	
3036	1, 2	19	2-RC-TE-2314	RC/RVLIS TEMP	13075-FM-093D1/06/F6	CONTMT	278' 10"	11	S R --	ON	ON	YES	12050-RC-134/4	N/A	
3028	1, 2	19	2-RC-TE-2315	RC/RVLIS TEMP	13075-FM-093D1/06/B6	CONTMT	259'	12	S R --	ON	ON	YES	12050-RC-134/4	N/A	
3035	1, 2	19	2-RC-TE-2316	RC/RVLIS TEMP	13075-FM-093D1/06/E6	CONTMT	259'	10	S R --	ON	ON	YES	12050-RC-134/4	N/A	
3022	1, 2	19	2-RC-TE-2317	RC/RVLIS TEMP	13075-FM-093D1/06/C8	CONTMT	216'	17	S R --	ON	ON	YES	12050-RC-134/4	N/A	
3024	1, 2	19	2-RC-TE-2318	RC/RVLIS TEMP	13075-FM-093D1/06/B7	CONTMT	244'	17	S R --	ON	ON	YES	12050-RC-134/4	N/A	
3027	1, 2	19	2-RC-TE-2319	RC/RVLIS TEMP	13075-FM-093D1/06/B6	CONTMT	259'	16	S R --	ON	ON	YES	12050-RC-134/4	N/A	
3038	1, 2	19	2-RC-TE-2323	RC/RVLIS TEMP	13075-FM-093D2/06/E3	CONTMT	274'	10.5	S R --	ON	ON	YES	12050-RC-137/5	N/A	
3039	1, 2	19	2-RC-TE-2324	RC/RVLIS TEMP	13075-FM-093D2/06/E4	CONTMT	274'	11	S R --	ON	ON	YES	12050-RC-137/5	N/A	
3040	1, 2	19	2-RC-TE-2325	RC/RVLIS TEMP	13075-FM-093D2/06/E4	CONTMT	259'	11.6	S R --	ON	ON	YES	12050-RC-137/5	N/A	
3041	1, 2	19	2-RC-TE-2326	RC/RVLIS TEMP	13075-FM-093D2/06/D4	CONTMT	244'	16	S R --	ON	ON	YES	12050-RC-137/5	N/A	
3023	1, 2	19	2-RC-TE-2327	RC/RVLIS TEMP	13075-FM-093D1/06/C8	CONTMT	216'	1	S R --	ON	ON	YES	12050-RC-137/5	N/A	
3025	1, 2	19	2-RC-TE-2328	RC/RVLIS TEMP	13075-FM-093D1/06/B8	CONTMT	244'	1	S R --	ON	ON	YES	12050-RC-137/5	N/A	
3026	1, 2	19	2-RC-TE-2329	RC/RVLIS TEMP	13075-FM-093D1/06/A7	CONTMT	259'	16.5	S R --	ON	ON	YES	12050-RC-137/5	N/A	
4284	1, 2	19	2-RC-TE-2410	RC/LOOP 1 COLD LEG TEMP (T-COLD)	12050-FM-093A1/24/C8	CONTMT	241'	10.7	S R --	ON	ON	YES	12050-RC-116/9	N/A	
4283	1, 2	19	2-RC-TE-2413	RC/LOOP 1 HOT LEG TEMP (T-HOT)	12050-FM-093A1/24/E6	CONTMT	241'	2	S R --	ON	ON	YES	12050-RC-119/11	N/A	
4288	1, 2	19	2-RC-TE-2420	RC/LOOP 2 COLD LEG TEMP (T-COLD)	12050-FM-093A2/24/C8	CONTMT	241'	12.3	S R --	ON	ON	YES	12050-RC-117/9	N/A	
4287	1, 2	19	2-RC-TE-2423	RC/LOOP 2 HOT LEG TEMP (T-HOT)	12050-FM-093A2/24/E6	CONTMT	241'	14	S R --	ON	ON	YES	12050-RC-120/9	N/A	

NORTH AREA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA2\_SSEL.DBF / 05/20/97 / 13:04:12  
 Sort Criteria: Class, ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEL 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elv.	LOCATION Rm or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQD?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
4292	1, 2	19	2-RC-TE-2430	RC/LOOP 3 COLD LEG TEMPERATURE (T-COLD)	12050-FM-093A3/26/D2	CONTMT	241'	7.5	S R --	ON	ON	YES	12050-RC-118/10	N/A	
4291	1, 2	19	2-RC-TE-2433	RC/LOOP 3 HOT LEG TEMPERATURE (T-HOT)	12050-FM-093A3/26/ES	CONTMT	241'	8	S R --	ON	ON	YES	12050-RC-121/11	N/A	
4284A	1, 2	19	2-RC-TR-2410	RC/LP1, CH1, HOT/COLD LEG TEMP	12050-RC-116, 119	SB	277'	CR	S R --	ON	ON	YES	N/A	2-EI-CB-03	
4288A	1, 2	19	2-RC-TR-2420	RC/LOOP 2 WIDE RANGE HOT/COLD LEG TEMP	12050-RC-117, 120	SB	277'	CR	S R --	ON	ON	YES	N/A	2-EI-CB-03	
4292A	1, 2	19	2-RC-TR-2430	RC/LOOP 3 WIDE RANGE HOT/COLD LEG TEMP	12050-FM-118, 121	SB	277'	CR	S R --	ON	ON	YES	N/A	2-EI-CB-03	
4257	1, 2	19	2-RH-TE-2604	RH/RHR HX INLET TEMPERATURE	12050-FM-094A2/14/C8	CONTMT	231'	1	S R --	ON	ON	YES	12050-RH-002/3	N/A	
4264	1, 2	19	2-RH-TE-2606	RH/RHR HX OUTLET TEMPERATURE	12050-FM-094A2/14/C4	CONTMT	216'	3.8	S R --	ON	ON	YES	12050-RH-003/3	N/A	
1158	1	20	1-CH-LI-1102	CH/BAST C LEVEL	11715-CH-039/3	SB	277'	CR	S R --	ON	ON	YES	N/A	N/A	
1157	2	20	1-CH-LI-1163	CH/BAST B LEVEL	11715-CH-048/3	SB	277'	CR	S R --	ON	ON	YES	N/A	N/A	
1159	1	20	1-CH-LI-1165	CH/BAST C LEVEL	11715-CH-040/4	SB	277'	CR	S R --	ON	ON	YES	N/A	N/A	
5565*	1	20	1-EP-CB-12AN	EP/HEAT TRACE DISTRIBUTION CABINET	12050-FE-063	SERIES	AUX	259'	S R 30	ON	ON	YES	N/A	N/A	
5566*	1	20	1-EP-CB-12BN	EP/HEAT TRACE DISTRIBUTION CABINET	12050-FE-063	SERIES	AUX	259'	S R 30	ON	ON	YES	N/A	N/A	
5004	1	20	2-CC-FI-200A	CC/CCW HX OUTLET FLOW	11715-FM-079A2/18/F4	SB	277'	CR	S R 36	ON	ON	YES	12050-CC-002/4	2-EI-CB-04	
5008	1	20	2-CC-FI-200B	CC/CCW HX OUTLET FLOW	11715-FM-079A2/18/D4	SB	277'	CR	S R 36	ON	ON	YES	12050-CC-002/4	2-EI-CB-04	
5055	1	20	2-CC-FI-232A-1	CC/CC HX FLOW TO RHR HX	12050-FM-079A1/19/F6	SB	277'	CR	S R 36	ON	ON	YES	N/A	2-EI-CB-04	
5063	1	20	2-CC-FI-232B-1	CC/CC HX FLOW TO RHR HX	12050-FM-079A1/19/F5	SB	277'	CR	S R 36	ON	ON	YES	N/A	2-EI-CB-04	
5012	1	20	2-CC-FI-200	CC/CCW HX OUTLET PRESSURE	11715-FM-079A2/18/D3	SB	277'	CR	S R 36	ON	ON	YES	12050-CC-096/3	2-EI-CB-04	
5010	1	20	2-CC-FI-200	CC/CCW HX OUTLET TEMP	11715-FM-079A2/18/D3	SB	277'	CR	S R 36	ON	ON	YES	12050-CC-082/3	2-EI-CB-04	
5053	1	20	2-CC-FI-201	CC/CCW PUMPS SUCTION HEADER TEMP	11715-FM-079A2/18/C7	SB	277'	CR	S R 36	ON	ON	YES	12050-CC-083/3	2-EI-CB-04	
5061	1	20	2-CC-FI-249A	CC/RHR HX COOLING WATER OUTLET TEMP	12050-FM-079A1/19/A8	SB	277'	CR	S R 36	ON	ON	YES	12050-CC-079/2	2-EI-CB-04	
5069	1	20	2-CC-FI-249B	CC/RHR HX COOLING WATER OUTLET TEMP	12050-FM-079A1/19/C7	SB	277'	CR	S R 36	ON	ON	YES	12050-CC-080/2	2-EI-CB-04	
1084	1	20	2-CH-FC-2122C	CH/CHARGING FLOW TO REGEN HX	12050-CH-001/6	SB	277'	CR	S R --	ON	ON	YES	N/A	N/A	
1177	1	20	2-CH-FI-2110	CH/BAST TO VCT FLOW	12050-CH-015/4	SB	277'	CR	S R --	ON	ON	YES	N/A	N/A	
1083	1	20	2-CH-FI-2122A	CH/CHARGING FLOW TO REGEN HX	12050-CH-001/6	SB	277'	CR	S R 36	ON	ON	YES	N/A	2-EI-CB-03	



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NORTH ANNA UNIT 2  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
COMPOSITE SSEL  
(Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA2\_SSEL.DBF / 05/20/97 / 13:04:12  
Sort Criteria: Class, ID Number  
Filter Criteria: <none>  
Program File Name & Version: SSEM 2.2

LINE NO.	TRAIN	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	OP. ST.	POWER SUPPORTING SYS.	REQ'D INTERCONNECTIONS	REG. ISSUE			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	Normal	Desired	REQD?	DWG. NO./REV.	(16)	(17)	
1105	1, 2	20	2-CH-FI-2124A	CH/RCP SEAL WATER INJECTION FLOW	12050-CH-058/4	SB	277'	CR	S R	20,36	ON	ON	YES	N/A	2-EI-CB-03
1107	1, 2	20	2-CH-FI-2127A	CH/RCP SEAL WATER INJECTION FLOW	12050-CH-059/5	SB	277'	CR	S R	20,36	ON	ON	YES	N/A	2-EI-CB-03
1109	1, 2	20	2-CH-FI-2130A	CH/RCP SEAL WATER INJECTION FLOW	12050-CH-060/4	SB	277'	CR	S R	20,36	ON	ON	YES	N/A	2-EI-CB-03
1099	1	20	2-CH-HIC-2186	CH/CCP TO RCP SEAL INJECTION	12050-CH-068/1	SB	277'	CR	R	--	ON	ON	YES	N/A	N/A
1053	1	20	2-CH-LI-2112	CH/VCT LEVEL	12050-CH-011/8	SB	277'	CR	S R	--	ON	ON	YES	N/A	N/A
1051	1	20	2-CH-LI-2115	CH/VCT LEVEL	12050-CH-012/4	SB	277'	CR	S R	--	ON	ON	YES	N/A	N/A
1088	1	20	2-CH-TI-2123	CH/REGEN HX OUTLET CHARGING TEMP	12050-LH-002/4	SB	277'	CR	S R	36	N/A	N/A	YES	N/A	2-EI-CB-03
4123	1	20	2-CN-LI-2006-1	CN/CONDENSATE STORAGE TANK LEVEL	12050-CN-001/8	SB	276'	8/C	S R	36	ON	ON	YES	N/A	2-EI-CB-04
4105	1	20	2-CN-LI-204	CN/CONDENSATE STORAGE TANK LEVEL	12050-CN-002/5	SB	277'	CR	S R	--	ON	ON	YES	N/A	N/A
5143	1	20	2-EI-CB-01	EI/BENCH BOARD 2-1	11715-FE-027B/33	SB	277'	CR	S R	--	N/A	N/A	YES	N/A	N/A
5144	1	20	2-EI-CB-02	EI/BENCH BOARD 2-2	11715-FE-027B/33	SB	277'	CR	S R	--	N/A	N/A	YES	N/A	N/A
5145	1	20	2-EI-CB-03	EI/VERTICAL BOARD 2-1	11715-FE-027B/33	SB	277'	CR	S R	--	N/A	N/A	YES	N/A	N/A
5146	1	20	2-EI-CB-04	EI/VERTICAL BOARD 2-2	11715-FE-027B/33	SB	277'	CR	S R	--	N/A	N/A	YES	N/A	N/A
5147	1	20	2-EI-CB-05	EI/VERTICAL BOARD 2-3	11715-FE-027B/33	SB	277'	CR	S R	--	N/A	N/A	YES	N/A	N/A
5148	1	20	2-EI-CB-06A	EI/AUXILIARY SHUTDOWN PANEL	12050-FE-027A/20	SB	254'	EMER SWGR	S R	--	N/A	N/A	YES	N/A	N/A
5149	1	20	2-EI-CB-06B	EI/AUXILIARY SHUTDOWN PANEL	12050-FE-027A/20	SB	254'	EMER SWGR	S R	--	N/A	N/A	YES	N/A	N/A
5191G	1	20	2-EI-CB-115A	EI/CONT ISOL TRIP VALVE RELAY PANEL A	12050-FE-188K	AUX	261'	CABLE TUNNEL #2	S R	6,41	N/A	N/A	YES	N/A	N/A
5191K	1	20	2-EI-CB-116A	EI/CONT ISOL TRIP VALVE RELAY PANEL B	12050-FE-188K	AUX	259'	CABLE TUNNEL #2	S R	6,41	N/A	N/A	YES	N/A	N/A
5150	1	20	2-EI-CB-18A	EI/COMPUTER I/O CABINET 00	11715-FE-027B/33	SB	277'	COMP #2	R	--	N/A	N/A	YES	N/A	N/A
5151	1	20	2-EI-CB-18B	EI/COMPUTER I/O CABINET 01	11715-FE-027B/33	SB	277'	COMP #2	R	--	N/A	N/A	YES	N/A	N/A
5152	1	20	2-EI-CB-18C	EI/COMPUTER I/O CABINET 02	11715-FE-027B/33	SB	277'	COMP #2	R	--	N/A	N/A	YES	N/A	N/A
5184B	1	20	2-EI-CB-202	EI/EMERG SWGR RM DG ISOL PANEL (H-TRAIN)	12050-FE-027A/20	SB	254'	EMER SWGR	S R	6,41	N/A	N/A	YES	N/A	N/A
5153	1	20	2-EI-CB-21	EI/HATHAWAY PANELS	11715-FE-027B/33	SB	277'	LOGIC	S R	--	N/A	N/A	YES	N/A	N/A
5154	1	20	2-EI-CB-21A	EI/CONTROL PANEL	DWG NOT AVAILABLE	SB	277'	8.4/D	S R	--	N/A	N/A	YES	N/A	N/A
5155	1	20	2-EI-CB-23A	EI/PROCESS CABINET A	12050-FE-027A/20	SB	252'	IRR #2	S R	41	N/A	N/A	YES	N/A	N/A

NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA2\_SSEL.DBF / 05/20/97 / 13:04:12  
 Sort Criteria: Class, ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN	CLASS	MARK NO	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elv.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D	SUPPORTING SYS. DWG. NO./REV.	REQ'D & SUPPORTING COMPONENTS	INTERCONNECTIONS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	
5156	1	20	2-EI-CB-23B	EI/PROCESS CABINET B	12050-FE-027A/20	SB	252'	IRR #2	S R	41	N/A	N/A	YES	N/A	N/A		
5157	1	20	2-EI-CB-23C	EI/PROCESS CABINET C	12050-FE-027A/20	SB	252'	IRR #2	S R	41	N/A	N/A	YES	N/A	N/A		
5158	1	20	2-EI-CB-23D	EI/PROCESS CABINET D	12050-FE-027A/20	SB	252'	IRR #2	S R	41	N/A	N/A	YES	N/A	N/A		
5159	1	20	2-EI-CB-23E	EI/PROCESS CABINET E	12050-FE-027A/20	SB	252'	IRR #2	S R	41	N/A	N/A	YES	N/A	N/A		
5160	1	20	2-EI-CB-23F	EI/PROCESS CABINET F	12050-FE-027A/20	SB	252'	IRR #2	S R	41	N/A	N/A	YES	N/A	N/A		
5161	1	20	2-EI-CB-25	EI/CONTROL PANEL	11715-FE-027B/33	SB	277'	LOGIC	S R	--	N/A	N/A	YES	N/A	N/A		
5162	1	20	2-EI-CB-300	EI/ICCM DISPLAY POWER SUPPLY - TRAIN A & B	DWG NOT AVAILABLE	SB	277'	8.8/D	S R	--	N/A	N/A	YES	N/A	N/A		
5163	1	20	2-EI-CB-301C	EI/CONTROL PANEL	12050-FE-027A/20	SW	252'	10.8/C	S R	--	N/A	N/A	YES	N/A	N/A		
5164	1	20	2-EI-CB-34	EI/POST ACCIDENT MONITORING & CONTROL PANEL	11715-FE-027B/33	SB	277'	CR	S R	--	N/A	N/A	YES	N/A	N/A		
5165	1	20	2-EI-CB-47A	EI/SOLID STATE PROTECTION INPUT CABINET TRAIN A	12050-1.31 SERIES	SB	252'	IRR #2	S R	41	N/A	N/A	YES	N/A	N/A		
5166	1	20	2-EI-CB-47B	EI/SOLID STATE PROTECTION INPUT CABINET (TRAIN B)	12050-1.31 SERIES	SB	252'	IRR #2	S R	41	N/A	N/A	YES	N/A	N/A		
5167	1	20	2-EI-CB-47C	EI/SOLID STATE PROTECTION LOGIC CABINET (TRAIN A)	12050-1.31 SERIES	SB	252'	IRR #2	S R		N/A	N/A	YES	N/A	N/A		
5168	1	20	2-EI-CB-47D	EI/SOLID STATE PROTECTION LOGIC CABINET (TRAIN B)	12050-1.31 SERIES	SB	252'	IRR #2	S R		N/A	N/A	YES	N/A	N/A		
5169	1	20	2-EI-CB-47E	EIP/SOLID STATE PROTECTION OUTPUT CABINET (TRAIN A)	12050-1.31 SERIES	SB	252'	IRR #2	S R	41	N/A	N/A	YES	N/A	N/A		
5170	1	20	2-EI-CB-47F	EI/SOLID STATE PROTECTION OUTPUT CABINET (TRAIN B)	12050-1.31 SERIES	SB	252'	IRR #2	S R	41	N/A	N/A	YES	N/A	N/A		
5171	1	20	2-EI-CB-48A	EI/AUXILIARY RELAY RACK 1	12050-FE-027A/20	SB	252'	IRR #2	S R	41	N/A	N/A	YES	N/A	N/A		
5172	1	20	2-EI-CB-51	EI/PRIMARY PLANT PROCESS CABINET 1	12050-FE-027A/20	SB	252'	IRR #2	S R	--	N/A	N/A	YES	N/A	N/A		
5173	1	20	2-EI-CB-52	EI/PRIMARY PLANT PROCESS CABINET 2	12050-FE-027A/20	SB	252'	IRR #2	S R	--	N/A	N/A	YES	N/A	N/A		
5174	1	20	2-EI-CB-53	EI/PRIMARY PLANT PROCESS CABINET 3	12050-FE-027A/20	SB	252'	IRR #2	S R	--	N/A	N/A	YES	N/A	N/A		
5175	1	20	2-EI-CB-54	EI/PRIMARY PLANT PROCESS CABINET 4	12050-FE-027A/20	SB	252'	IRR #2	S R	--	N/A	N/A	YES	N/A	N/A		
5176	1	20	2-EI-CB-55	EI/PRIMARY PLANT PROCESS CABINET 5	12050-FE-027A/20	SB	252'	IRR #2	S R	--	N/A	N/A	YES	N/A	N/A		
5177	1	20	2-EI-CB-56	EI/PRIMARY PLANT PROCESS CABINET 6	12050-FE-027A/20	SB	252'	IRR #2	S R	--	N/A	N/A	YES	N/A	N/A		
5178	1	20	2-EI-CB-57	EI/PRIMARY PLANT PROCESS CABINET 7	12050-FE-027A/20	SB	252'	IRR #2	S R	--	N/A	N/A	YES	N/A	N/A		

NORTH ANNA UNIT 2  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
COMPOSITE SSEL  
(Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA2\_SSEL.DBF / 05/20/97 / 13:04:12  
Sort Criteria: Class, ID Number  
Filter Criteria: <none>  
Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg No./Rev./Zone	Building	Flr. Elev	EQUIPMENT LOCATION	OP. ST.	Normal	Desired	REQ'D	SYS. NO./REV.	REG. INTERCONNECTIONS			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
5179	1	20	2-EI-CB-58	EI/PRIMARY PLANT PROCESS CABINET B	12050-FE-027A/20	SB	252'	IRR #2	S R --	N/A	N/A	YES	N/A	N/A	N/A	N/A
5180	1	20	2-EI-CB-62A	EI/SAFEGUARDS TEST CABINET A	12050-1.31 SERIES	SB	252'	IRR #2	S R --	N/A	N/A	YES	N/A	N/A	N/A	N/A
5181	1	20	2-EI-CB-62B	EI/SAFEGUARDS TEST CABINET B	12050-1.31 SERIES	SB	252'	IRR #2	S R --	N/A	N/A	YES	N/A	N/A	N/A	N/A
5182	1	20	2-EI-CB-64A	EI/SOLID STATE PROT SYS AUX RELAY RACK	12050-1.28-45B	SB	252'	IRR #2	S P 41	N/A	N/A	YES	N/A	N/A	N/A	N/A
5183	1	20	2-EI-CB-64B	EI/SOLID STATE PROT SYS AUX RELAY RACK	12050-1.28-45B	SB	252'	IRR #2	S R 41	N/A	N/A	YES	N/A	N/A	N/A	N/A
5184	1	20	2-EI-CP-04	CI/MICROPROCESSOR CABINET	11715-FE-027B/33	SB	277'	CR	S R --	N/A	N/A	YES	N/A	N/A	N/A	N/A
5185	1	20	2-EP-CB-10C	EP/PZR DISTRIBUTION PANEL #2	DWG NOT AVAILABLE	AUX	280'	RCRM/12/JK	S R --	N/A	N/A	YES	12050-RC-108/8	N/A	N/A	N/A
5186	1	20	2-EP-CB-10F	EP/RCS PZR CONTROL PANEL	DWG NOT AVAILABLE	AUX	280'	RCRM/12/	S R --	N/A	N/A	YES	12050-RC-108/8	N/A	N/A	N/A
5191I	1	20	2-EP-CB-121A	EP/CONT ISOL TRIP VALVE RELAY PANEL	13075-FE-3MF	SB	277'	COMPUTER RM #2	S R 6,41	N/A	N/A	YES	12050-SS-007/5	2-EP-CC-19A	N/A	N/A
5191J	1	20	2-EP-CB-121B	EP/CONT ISOL TRIP VALVE RELAY PANEL	13075-FE-3MF	SB	277'	COMPUTER RM #2	S R 6,41	N/A	N/A	YES	12050-SS-007/5	2-EP-CB-19B	N/A	N/A
5187	1	20	2-EP-CB-204	EP/APPENDIX R ISOL PANEL	12050-FE-027A/20	SB	254'	EMER SWGR	S R --	N/A	N/A	YES	N/A	N/A	N/A	N/A
5188	1	20	2-EP-CB-26A	EP/AUXILIARY RELAY RACK A	12050-FE-027A/20	SB	252'	IRR #2	S R 41	N/A	N/A	YES	N/A	N/A	N/A	N/A
5189	1	20	2-EP-CB-26B	EP/AUXILIARY RELAY RACK B	12050-FE-027A/20	SB	252'	IRR #2	S R 41	N/A	N/A	YES	N/A	N/A	N/A	N/A
5191H	1	20	2-EP-CB-288T	EP/CONT ISOL TRIP VALVE RELAY PANEL	12050-FE-3MK/6/2F	SB	252'	CABLE VAULT #2	S R 6,41	N/A	N/A	MD	12050-RC-148/2	N/A	N/A	N/A
5190	1	20	2-EP-CB-28C	EP/AUXILIARY RELAY RACK C	12050-FE-027A/20	SB	252'	IRR #2	S R	N/A	N/A	YES	N/A	N/A	N/A	N/A
5190A	1	20	2-EP-CB-28E	EP/AUXILIARY RELAY RACK E	12050-FE-027B/20	SB	252'	IRR #2	S R 6,41	N/A	N/A	YES	N/A	N/A	N/A	N/A
5190B	1	20	2-EP-CB-28F	EP/AUXILIARY RELAY RACK F	12050-FE-027A/20	SB	252'	IRR #2	S R 6,41	N/A	N/A	YES	N/A	N/A	N/A	N/A
5190C	1	20	2-EP-CB-28G	EP/AUXILIARY RELAY RACK G	12050-FE-027A/20	SB	252'	IRR #2	S R 6,41	N/A	N/A	YES	N/A	N/A	N/A	N/A
5191	1	20	2-EP-CB-28H	EP/SW LOGIC CABINET 2A	12050-FE-027A/20	SB	252'	IRR #2	S R 41	N/A	N/A	YES	N/A	N/A	N/A	N/A
5191B	1	20	2-EP-CB-28J	EP/SW LOGIC CABINET 2B	12050-FE-027A/20	SB	252'	IRR #2	S R 6,41	N/A	N/A	YES	N/A	N/A	N/A	N/A
5597*	1	20	2-EP-CB-42N1	EP/HEAT TRACE CONTROL CABINET	12050-FE-063 SERIES	AFPH	271'	--	S R 30	ON	ON	YES	N/A	N/A	N/A	N/A
5598*	2	20	2-EP-CB-42R1	EP/HEAT TRACE CONTROL CABINET	12050-FE-063 SERIES	AFPH	271'	--	S R 30	ON	ON	YES	N/A	N/A	N/A	N/A
5191D	1	20	2-EP-CB-46A	EP/HT TRACE ANNUNC CABINET	12050-FE-063AP/09	AFPH	--	--	--	18	N/A	N/A	N/A	N/A	N/A	N/A
5603*	1, 2	20	2-EP-CB-46A	/ANNUNCIATOR CABINET - 46	DWG NOT AVAILABLE	AFPH	271'	--	S R --	ON	ON	YES	N/A	N/A	N/A	N/A

NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA2\_SSEL.DBF / 05/20/97 / 13:04:12  
 Sort Criteria: Class ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr./Elv.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D & SUPPORTING COMPONENTS	INTERCONNECTIONS	REC. ISSUE
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	
5191E	1	20	2-EP-CB-63A	EP/LOOP STOP VALVE LOGIC CABINET RACK A	12050-1.32 SERIES	SB	252'	IRR #2	S R 6	N/A	N/A	YES	N/A	N/A		
5191F	1	20	2-EP-CB-63B	EP/LOOP STOP VALVE LOGIC CABINET RACK B	12050-1.32 SERIES	SB	252'	IRR #2	S R 6	N/A	N/A	YES	N/A	N/A		
6036	1	20	2-EP-DB-16A	EP/120V SEMI-VITAL AC BUS DISTRIBUTION	12050-FE-001AJ1/00/F-4,8	SB	254'	11/D	S R --	N/A	N/A	YES	N/A	TRANS-118-2		
6038	2	20	2-EP-DB-16B	EP/120V SEMI-VITAL AC BUS DISTRIBUTION	12050-FE-001AJ1/00/D-4,8	SB	254'	11/D	S R --	N/A	N/A	YES	N/A	TRANS-119-2		
4178	1	20	2-FW-FI-200A	FW/AFWP TO SG A FLOW	12050-FM-074A1/27/D6	SB	277'	CR	S R 36	ON	ON	YES	12050-FW-050/6	2-EI-CB-04		
4162	2	20	2-FW-FI-200B	FW/AFWP TO SG B FLOW	12050-FM-074A1/27/C6	SB	277'	CR	S R 36	ON	ON	YES	12050-FW-051/6	2-EI-CB-04		
4166	2	20	2-FW-FI-200C	FW/AFWP TO SG C FLOW	12050-FM-074A1/27/B7	SB	277'	CR	S R 36	ON	ON	YES	12050-FW-052/6	2-EI-CB-04		
4186	1	20	2-FW-LI-2474	FW/SG A LEVEL	12050-FM-074A1/27/E7	SB	277'	CR	S R 36	ON	ON	YES	12050-FW-091/8	2-EI-CB-04		
4188	1	20	2-FW-LI-2475	FW/SG A LEVEL	12050-FM-074A1/27/E6	SB	276'	8/C	S R 36	ON	ON	YES	12050-FW-097/7	2-EI-CB-04		
4190	1	20	2-FW-LI-2476	FW/SG A LEVEL	12050-FM-074A1/27/E6	SB	276'	8/C	S R 36	ON	ON	YES	12050-FW-103/7	2-EI-CB-04		
4198	2	20	2-FW-LI-2484	FW/SG B LEVEL	12050-FM-074A1/27/D7	SB	277'	CR	S R 36	ON	ON	YES	12050-FW-093/7	2-EI-CB-04		
4200	2	20	2-FW-LI-2485	FW/SG B LEVEL	12050-FM-074A1/27/D6	SB	276'	8/C	S R 36	ON	ON	YES	12050-FW-099/7	2-EI-CB-04		
4202	2	20	2-FW-LI-2486	FW/SG B LEVEL	12050-FM-074A1/27/D6	SB	276'	8/C	S R 36	ON	ON	YES	12050-FW-105/7	2-EI-CB-04		
4208	3	20	2-FW-LI-2494	FW/SG C LEVEL	12050-FM-074A1/27/C7	SB	276'	8/C	S R 36	ON	ON	YES	12050-FW-095/7	2-EI-CB-04		
4210	3	20	2-FW-LI-2495	FW/SG C LEVEL	12050-FM-074A1/27/C7	SB	276'	8/C	S R 36	ON	ON	YES	12050-FW-101/8	2-EI-CB-04		
4212	3	20	2-FW-LI-2496	FW/SG C LEVEL	12050-FM-074A1/27/C6	SB	276'	8/C	S R 36	ON	ON	YES	12050-FW-107/7	2-EI-CB-04		
4180	1, 2	20	2-FW-LR-2477	FW/SG 2A,B,C WIDE RANGE LVL	12050-FM-074A1/27/E8	SB	277'	CR	S R --	ON	ON	YES	N/A	2-EI-CB-04		
4149	2	20	2-FW-PI-201A-1	FW/AFWP TO SG B PRESSURE	12050-FM-074A3/29/F8	SB	277'	CR	S R 36	ON	ON	YES	12050-FW-016/4	2-EI-CB-04		
4148	2	20	2-FW-PI-201A-2	FW/AFWP TO SG B PRESSURE	12050-FM-074A3/29/F8	SB	254'	SWGR RM	S R --	ON	ON	YES	12050-FW-016/4	2-EI-CB-06B		
4153	2	20	2-FW-PI-201B-1	FW/AFWP TO SG C PRESSURE	12050-FM-074A3/29/E8	SB	277'	CR	S R 36	ON	ON	YES	12050-FW-017/4	2-EI-CB-04		
4157	1	20	2-FW-PI-201C-	FW/AFWP TO SG A PRESSURE	12050-FM-074A3/29/E8	SB	254'	SWGR RM	S R --	ON	ON	YES	12050-FW-150/5	N/A		
4154	2	20	2-FW-PI-201C-1	FW/AFWP TO SG A PRESSURE	12050-FM-074A3/29/E8	SB	254'	SWGR RM	S R --	ON	ON	YES	12050-FW-017/4	2-EI-CB-06B		
4156	1	20	2-FW-PI-201C-1	FW/AFWP TO SG A PRESSURE	12050-FM-074A3/29/E8	SB	277'	CR	S R --	ON	ON	YES	12050-FW-150/5	N/A		
4138	1	20	2-FW-PI-203A	FW/TDAFWP SUCTION PRESSURE	12050-FM-074A3/29/C7	SB	277'	CR	S R 36	ON	ON	YES	12050-FW-001/3	2-EI-CB-04		
4132	2	20	2-FW-PI-203B	FW/TDAFWP SUCTION PRESSURE	12050-FM-074A3/29/C6	SB	277'	CR	S R 36	ON	ON	YES	12050-FW-002/4	2-EI-CB-04		

NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA2\_SSEL.DBF / 05/20/97 / 13:04:12  
 Sort Criteria: Class, ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg No./Rev./Zone	Building	EQUIPMENT Flr. Elv.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. ST. Normal	OP. ST. Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D & SUPPORTING COMPONENTS	INTERCONNECTIONS	REG. ISSUE
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	
4126	2	20	2-FW-P1-203C	FW/MDAFWP SUCTION PRESSURE	12050-FM-074A3/29/C5	SB	277'	CR	S R 36	ON	ON	YES	12050-FW-003/4	2-EI-CB-04		
2041	1	20	2-GN-P1-234A	GN/N2 RESERVE PRESSURE	12050-GN-004/2	SB	274'	CR	S R --	ON	ON	YES	N/A	N/A		
2043	2	20	2-GN-P1-234B	GN/N2 RESERVE PRESSURE	12050-GN-005/2	SB	274'	CR	S R --	ON	ON	YES	N/A	N/A		
4004	1	20	2-MS-P1-2474	MS/SG A STEAM PRESSURE	12050-FM-070B1/18/E7	SB	276'	8/C	S R 9,36	ON	ON	YES	12050-MS-158/4	2-EI-CB-04		
4006	2	20	2-MS-P1-2476	MS/SG A STEAM PRESSURE	12050-FM-070B1/18/C6	SB	276'	8/C	S R 9,36	ON	ON	YES	12050-MS-162/5	2-EI-CB-04		
4032	1	20	2-MS-P1-2485	MS/SG B STEAM PRESSURE	12050-FM-070B2/20/B7	SB	276'	8/C	S R 9,36	ON	ON	YES	12050-MS-164/4	2-EI-CB-04		
4034	2	20	2-MS-P1-2486	MS/SG B STEAM PRESSURE	12050-FM-070B2/20/B6	SB	276'	8/C	S R 9,36	ON	ON	YES	12050-MS-168/5	2-EI-CB-04		
4060	2	20	2-MS-P1-2494	MS/SG C STEAM PRESSURE	12050-FM-070B3/19/B7	SB	276'	8/C	S R 9,36	ON	ON	YES	12050-MS-170/4	2-EI-CB-04		
4062	1	20	2-MS-P1-2496	MS/SG C STEAM PRESSURE	12050-FM-070B3/19/B6	SB	276'	8/C	S R 9,36	ON	ON	YES	12050-MS-174/6	2-EI-CB-04		
4008	1	20	2-MS-PIC-201A	MS/SG A STEAM PRESSURE	12050-FM-070B1/18/C6	SB	277'	CR	S R --	ON	ON	YES	N/A	N/A		
4036	2	20	2-MS-PIC-201B	MS/SG B STEAM PRESSURE	12050-FM-070B2/20/C5	SB	277'	CR	S R --	ON	ON	YES	N/A	N/A		
4064	3	20	2-MS-PIC-201C	MS/SG C STEAM PRESSURE	12050-FM-070B3/19/B6	SB	277'	CR	S R --	ON	ON	YES	N/A	N/A		
3055	1, 2	20	2-QS-LI-200A	QS/RWST LEVEL	12050-FM-091A1/20/D9	SB	276'	CR	S R 36	ON	ON	YES	12050-QS-003/8	2-EI-CB-05		
3056	1, 2	20	2-QS-LI-200B	QS/RWST LEVEL	12050-FM-091A1/20/D6	SB	276'	CR	S R 36	ON	ON	YES	12050-QS-004/8	2-EI-CB-05		
3057	1, 2	20	2-QS-LI-200C	QS/RWST LEVEL	12050-FM-091A1/20/D8	SB	276'	CR	S R 36	ON	ON	YES	12050-QS-016/9	2-EI-CB-05		
3058	1, 2	20	2-QS-LI-200D	QS/RWST LEVEL	12050-FM-091A1/20/D6	SB	276'	CR	S R 36	ON	ON	YES	12050-QS-017/8	2-EI-CB-05		
2008	2	20	2-RC-HC1*	RC/PZR HEATER CONTROL #1	12050-FM-093B1/25/B4	AUX	274'	CRD ROOM #2	S R --	ON	ON	YES	N/A	N/A		
2009	2	20	2-RC-HC2*	RC/PZR HEATER CONTROL #2	12050-FM-093B1/25/B4	AUX	274'	CRD ROOM #2	S R --	ON	ON	YES	N/A	N/A		
3006	1, 2	20	2-RC-LI-2459A	RC/PZR LEVEL IND CH I	12050-RC-061/8	SB	277'	CR	S R --	ON	ON	YES	N/A	2-EI-CB-03		
3006A	1, 2	20	2-RC-LI-2459B	RC/PZR LEVEL IND CH I	12050-RC-061/8	SB	254'	EM SWGR #2	S R --	ON	ON	YES	N/A	2-EI-CB-06A		
3008	1, 2	20	2-RC-LI-2460	RC/PZR LEVEL IND CH II	12050-RC-062/7	SB	277'	CR	S R --	ON	ON	YES	N/A	2-EI-CB-03		
3010	1, 2	20	2-RC-LI-2461	RC/PZR LEVEL IND CH III	12050-RC-063/8	SB	277'	CR	S R --	ON	ON	YES	N/A	2-EI-CB-03		
3012	2	20	2-RC-LI-2462	RC/PZR LEVEL-COLD CAL (STUP)	12050-RC-064/4	SB	277'	CR	S R --	ON	ON	YES	N/A	2-EI-CB-03		
2028	1, 2	20	2-RC-LI-2470	RC/PRT LEVEL	12050-RC-035/3	SB	277'	CR	S R 36	ON	ON	YES	N/A	2-EI-CB-03		
2003	1	20	2-RC-P1-2402A	RC/REACTOR COOLANT WR PRESSURE	12050-RC-126/11	SB	276'	8/B	S R 36	ON	ON	YES	N/A	2-EI-CB-03		
2004	1	20	2-RC-P1-2402B	RC/REACTOR COOLANT WR PRESSURE	12050-RC-126/11	SB	276'	8/B	S R 36	ON	ON	YES	N/A	2-EI-CB-03		
2017	2	20	2-RC-P1-2444	RC/PZR PRESSURE	12050-RC-107/4	SB	277'	CR	S R --	ON	ON	YES	N/A	N/A		

NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA2\_SSEL.DBF / 05/20/97 / 13:04:12  
 Sort Criteria: Class, ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	TRAIN	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQD?	SUPPORTING DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
2019	2	20	2-RC-PI-2445	RC/PZR PRESSURE	12050-RC-105/4	SB	277'	CR	S R	--	ON	ON	YES	N/A	N/A	
2011	2	20	2-RC-PI-2455	RC/PZR PRESSURE	12050-RC-069/8	SB	277'	CR	S R	36	ON	ON	YES	N/A	2-EI-CB-03	
2013	2	20	2-RC-PI-2456	RC/PZR PRESSURE	12050-RC-071/8	SB	277'	CR	S R	36	ON	ON	YES	N/A	2-EI-CB-03	
2015	2	20	2-RC-PI-2457	RC/PZR PRESSURE	12050-RC-073/8	SB	277'	CR	S R	36	ON	ON	YES	N/A	2-EI-CB-03	
2026	1, 2	20	2-RC-PI-2472	RC/PRT PRESSURE	12050-RC-041/3	SB	277'	CR	S R	36	ON	ON	YES	N/A	2-EI-CB-03	
30218	1, 2	20	2-RC-TI-2463	RC/PZR PORV OUTLET TEMP	12050-RC-056/5	SB	277'	CR	S R	36	ON	ON	YES	N/A	2-EI-CB-03	
4263A	1, 2	20	2-RH-FI-2605	RH/RHR HX OUTLET FLOW	12050-RH-004/4	SB	277'	CR	S R	--	ON	ON	YES	N/A	N/A	
4257A	1, 2	20	2-RH-TR-2604	RH/RHR HX INLET TEMPERATURE	12050-RH-002/3	SB	277'	CR	S R	--	ON	ON	YES	N/A	N/A	
1145	1	21	1-CH-TK-1C	CH/BORIC ACID STORAGE TANK C (BAST)	11715-FM-095A1/22/E7 AUX	AUX	274'	9.7/H	S	--	N/A	N/A	NO	N/A	1-CH-LT-1102/1165;1-CH-TIC-1103/1166	
5002	1	21	2-CC-E-1A	CC/COMPONENT COOLING WATER HX	11715-FM-079A2/18/E5 AUX	AUX	274'	9/G	S	--	N/A	N/A	NO	N/A	N/A	
5006	1	21	2-CC-E-1B	CC/COMPONENT COOLING WATER HX	11715-FM-079A2/18/D5 AUX	AUX	274'	10.5/F	S	--	N/A	N/A	NO	N/A	N/A	
1078	1, 2	21	2-CH-E-1	CH/SEAL WATER HEAT EXCHANGER	12050-FM-095B1/22/B6 AUX	AUX	245'	9.5/J	S	--	N/A	N/A	NO	12050-CH-001/6	COMPONENT COOLING WATER	
1048	1	21	2-CH-E-3	CH/REGENERATIVE HEAT EXCHANGER	12050-FM-095C1/20/E5 CONTMT	CONTMT	245'	6	S	--	N/A	N/A	NO	12050-FM-1C 12050-FM-1G	N/A	
1198	2	21	2-CH-E-4	CH/EXCESS LETDOWN HEAT ECHANGER	12050-FM-095C1/20/C7 CONTMT	CONTMT	233'	12	S	23	N/A	N/A	NO	N/A	N/A	
1049	1	21	2-CH-TK-2	CH/VOLUME CONTROL TANK (VCT)	12050-FM-095B1/22/C6 AUX	AUX	275'	9.1/J	S	--	N/A	N/A	NO	N/A	2-CH-LT-2115;2-CH-LT-2112	
4120	1	21	2-CN-TK-1	CN/CONDENSATE STORAGE TANK	12050-FM-074A3/29/D3 AFPH	AFPH	271'	16/Q	S	--	N/A	N/A	NO	12050-FP-2J	N/A	
4103	1	21	2-CN-TK-2	CN/CONDENSATE STORAGE TANK	12050-FM-073A/30/A6 AUX	AUX	271'	BC		--	N/A	N/A	NO	12050-FP-40F	N/A	
5077	1	21	2-DG-E-1	DG/PRIMARY DRAIN TRANSFER COOLER	12050-FM-079A5/17/A6 CONTMT	CONTMT	216'	12.5	S	23	N/A	N/A	NO	N/A	N/A	
4145	1	21	2-FW-E-10	FW/TDAFWP OIL COOLER	12050-FM-074A3/29/D7 AFPH	AFPH	--	--	S	36	N/A	N/A	NO	N/A	2-FW-P-2	
4144	2	21	2-FW-E-9A	FW/MDAFWP OIL COOLER	12050-FM-074A3/29/D6 AFPH	AFPH	--	--	S	36	N/A	N/A	NO	N/A	2-FW-P-3A	
4143	2	21	2-FW-E-9B	FW/MDAFWP OIL COOLER	12050-FM-074A3/29/D4 AFPH	AFPH	--	--	S	36	N/A	N/A	NO	N/A	2-FW-P-3B	
2045	2	21	2-GN-TK-1A	GN/N2 RESERVE TANK	11715-FM-105A1/20/B3 CONTMT	CONTMT	291' 10"	5.5	S	--	N/A	N/A	NO	N/A	N/A	
2044	1	21	2-GN-TK-1B	GN/N2 RESERVE TANK	11715-FM-105A1/20/B8 CONTMT	CONTMT	291' 10"	5.5	S	--	N/A	N/A	NO	N/A	N/A	
5049	3	21	2-HV-E-6A	HV/SHROUD COOLING COILS	12050-FM-079A2/16/F6 CONTMT	CONTMT	262'	14.8/RC	S	23	N/A	N/A	NO	N/A	N/A	
5050	3	21	2-HV-E-6B	HV/SHROUD COOLING COILS	12050-FM-079A3/17/F6 CONTMT	CONTMT	261'	8/RC	S	23	N/A	N/A	NO	N/A	N/A	

NORTH ANNA UNIT 2  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
COMPOSITE SSEL  
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Sort Criteria: Class, ID Number  
Filter Criteria: <none>  
Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQD?	SUPPORTING DMG. NO./REV	SYS. REQ'D	INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
5051	3	21	2-HV-E-6C	HV/SHROUD COOLING COILS	12050-FM-079A4/16/F6	CONTMT	261'	3/RC	S	23	N/A	N/A	NO	N/A	N/A	
5192	1	21	2-HV-TK-6A	HV/CHILLED WATER EXPANSION TANK	11715-FB-040A2/13	SB	254'	CHILLER RM	S	--	N/A	N/A	NO	N/A	N/A	
5193	2	21	2-HV-TK-6B	HV/CHILLED WATER EXPANSION TANK	11715-FB-040A2/13	SB	254'	CHILLER RM	S	--	N/A	N/A	NO	N/A	N/A	
5082	1	21	2-NS-E-1A	NS/NEUTRON SHIELD TANK COOLER	12050-FM-079A5/17/E7	CONTMT	261'	17.5	S	23	N/A	N/A	NO	N/A	N/A	
5083	1	21	2-NS-E-1B	NS/NEUTRON SHIELD TANK COOLER	12050-FM-079A5/17/E5	CONTMT	261'	17.5	S	23	N/A	N/A	NO	N/A	N/A	
3050	1, 2	21	2-QS-TK-1	QS/REFUELING WATER STORAGE TANK (RWST)	12050-FM-091A1/20/D7	YARD	--	--	S	--	N/A	N/A	NO	N/A	2-QS-L-200A/B/C/D	
7001	1, 2	21	2-QS-TK-2	QS/REFUELING WATER CHEM ADD TANK	12050-FM-091A1/20/D6	YARD/TUNL	272'	H OF AFPH	S	1	N/A	N/A	NO	N/A	N/A	
2024	1, 2	21	2-RC-TK-2	RC/PRESSURE RELIEF TANK (PRT)	12050-FM-093B2/26/C5	CONTMT	241' PC	6	S	16	N/A	N/A	NO	12050-FK-1A	N/A	
4256	1	21	2-RH-E-1A	RH/RHR HX A	12050-FM-094A2/14/E8	CONTMT	231'	17	S	--	N/A	N/A	NO	N/A	N/A	
4258	2	21	2-RH-E-1B	RH/RHR HX B	12050-FM-094A2/14/E6	CONTMT	231'	1	S	--	N/A	N/A	NO	N/A	N/A	
4250	1	21	2-RH-E-2A	RH/RHR PUMP A SEAL COOLER	12050-FM-094A1/15/D7	CONTMT	231'	17.5	S	--	N/A	N/A	NO	N/A	MOTHER: 2-RH-P-1A/1B	
4253	2	21	2-RH-E-2B	RH/RHR PUMP B SEAL COOLER	12050-FM-094A1/15/D4	CONTMT	231'	2	S	--	N/A	N/A	NO	N/A	MOTHER: 2-RH-F-1A/1B	
5604	1	21	2-RS-E-1A	RS/INSIDE RECIRC SPRAY COOLER A	12050-FM-091A3/20/C7	CONTMT	216'		S	26	N/A	N/A	NO	11715-FM-078B3	SERVICE WATER	
5605	1	21	2-RS-E-1B	RS/INSIDE RECIRC SPRAY COOLER B	12050-FM-091A3/20/C5	CONTMT	216'		S	26	N/A	N/A	NO	11715-FM-078B3	SERVICE WATER	
5606	2	21	2-RS-E-1C	RS/INSIDE RECIRC SPRAY COOLER C	12050-FM-091A4/21/D8	CONTMT	215'		S	26	N/A	N/A	NO	11715-FM-078B3	SERVICE WATER	
5607	2	21	2-RS-E-1D	RS/INSIDE RECIRC SPRAY COOLER D	12050-FM-091A4/21/D7	CONTMT	216'		S	26	N/A	N/A	NO	11715-FM-078B3	SERVICE WATER	
7034	2	21	2-RS-E-2A*	RS/OUTSIDE RECIRC SPRAY PUMP A SEAL HX	12050-FM-091A4/18/C4	SFGD	267'	3.2/LH	S	1	N/A	N/A	NO	N/A	N/A	
7035	2	21	2-RS-E-2B*	RS/OUTSIDE RECIRC SPRAY PUMP B SEAL HX	12050-FM-091A4/18/C3	SFGD	267'	3.5/JK	S	1	N/A	N/A	NO	N/A	N/A	
7036	2	21	2-RS-TK-1	RS/CASING COOLING TANK	12050-FM-091B1/10/C4	YARD/TUNL	270'	S OF AFPH	S	1	N/A	N/A	NO	N/A	N/A	
7032	2	21	2-RS-TK-1A*	RS/OUTSIDE RECIRC SPRAY PUMP A SEAL TANK	12050-FM-091A4/18/C4	SFGD	267'	PUMP CUBICLE	S	1	N/A	N/A	NO	N/A	N/A	
7033	2	21	2-RS-TK-1B*	RS/OUTSIDE RECIRC SPRAY PUMP B SEAL TANK	12050-FM-091A4/18/C3	SFGD	267'	--	S	1	N/A	N/A	NO	N/A	N/A	
1092A	1	21	2-SI-TK-2	SI/BORON INJECTION TANK (BIT)	12050-FM-096A3/21/D5	AUX	244'	11.5/J	S	23	N/A	N/A	NO	N/A	N/A	
1211	1, 2	21	2-SS-E-10	SS/PZR LIQUID SPACE SAMPLE COOLER	12050-FM-089B1/17/E5	AUX	274'	9/K	S	23	N/A	N/A	NO	N/A	COMPONENT COOLING WATER	
1241	1, 2	21	2-SS-E-12	SS/RC COLD LEG SAMPLE COOLER	12050-FM-089B1/17/E4	AUX	274'	9/K	S	--	N/A	N/A	NO	N/A	COMPONENT COOLING WATER	

NORTH ANNA UNIT 2  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
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(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10) (11)	(12)	(13)	(14)	(15)	(16)	(17)
5070	1	21	2-SS-E-34	SS/SAMPLE COOLER	12050-FM-079A1/19/E8	AUX	244'	9/K	S 23	N/A	N/A	NO	N/A	N/A	
5071	1	21	2-SS-E-35	SS/SAMPLE COOLER	12050-FM-079A1/19/E8	AUX	244'	9/K	S 23	N/A	N/A	NO	N/A	N/A	
5072	1	21	2-SS-E-36	SS/SAMPLE COOLER	12050-FM-079A1/19/E8	AUX	244'	9/K	S 23	N/A	N/A	NO	N/A	N/A	
1227	1, 2	21	2-SS-E-4	HRS/HOT LEG SAMPLE COOLER	12050-FM-089B1/17/D5	AUX	274'	9/K	S --	N/A	N/A	NO	N/A	COMPONENT COOLING WATER	
4273	1, 2	21	2-SS-E-9	SS/RHR SAMPLE COOLER	12050-FM-089B1/17/E3	AUX	274'	9/K	S --	N/A	N/A	NO	N/A	COMPONENT COOLING WATER	
1264	1, 2	23	2-CR-CRD*	CR*/CONTROL ROD DRIVE MECHANISMS	WESTING 618J795 & 618J796		271'	--	S 1,14, 10	N/A	N/A	NO	N/A	N/A	
1280	1, 2	23	2-ND-11DU*	ND*/INCORE INST DRIVE UNIT	12050-1.26	SERIES	263'	4	S 1,14, 44	N/A	N/A	NO	N/A	N/A	
1284	1, 2	23	2-ND-11GT*	ND*/INCORE INST GUIDE TUBES	12050-1.26	SERIES	217'	4	S 1,14, 44	N/A	N/A	NO	N/A	N/A	
1283	1, 2	23	2-ND-11ST*	ND*/INCORE INST SEAL TABLE	12050-1.26	SERIES	263'	4	S 1,14, 44	N/A	N/A	NO	N/A	N/A	
1281	1, 2	23	2-ND-11T05*	ND*/INCORE INST 5-PATH TRANSFER	12050-1.26	SERIES	263'	4	S 1,14, 44	N/A	N/A	NO	N/A	N/A	
1282	1, 2	23	2-ND-11T10*	ND*/INCORE INST 10-PATH TRANSFER	12050-1.26	SERIES	263'	4	S 1,14, 44	N/A	N/A	NO	N/A	N/A	
4002	1	23	2-RC-E-1A	MS/STEAM GENERATOR A	12050-FM-001A/12/F6		291'	2	S 1,14	N/A	N/A	NO	N/A	N/A	
4028	2	23	2-RC-E-1B	MS/STEAM GENERATOR B	12050-FM-001A/12/F3		291'	14	S 1,14	N/A	N/A	NO	N/A	N/A	
4054	3	23	2-RC-E-1C	MS/STEAM GENERATOR C	12050-FM-001A/12/D5		291'	8	S 1,14	N/A	N/A	NO	N/A	N/A	
2007A	1, 2	23	2-RC-E-2	RC/PRESSURIZER	12050-FM-001B/11/F4		283'	9.5	S 1,14	N/A	N/A	NO	N/A	N/A	
1268	1, 2	23	2-RC-ES-1	RC/NEUTRON SHIELD TANK	12050-FM-079A5/17		242'	--	S 1,14	N/A	N/A	NO	N/A	N/A	
1261	1, 2	23	2-RC-FA*	RC/FUEL ASSEMBLIES	12050-5.13	SERIES	242'	--	S 1,14	N/A	N/A	NO	N/A	N/A	
1262	1, 2	23	2-RC-LRI*	RC/LOWER REACTOR INTERNALS	12050-5.11	SERIES	231'	--	S 1,14	N/A	N/A	NO	N/A	N/A	
4282	1, 2	23	2-RC-MDV-2590	RC/LOOP 1 HOT LEG ISOL	12050-FM-093A1/24/E4		256' C	--	-- 1,37, 14	OPEN	OPEN	NO	N/A	N/A	
4285	1, 2	23	2-RC-MDV-2591	RC/LOOP 1 COLD LEG ISOL	12050-FM-093A1/24/C8		256' C	--	-- 1,37, 14	OPEN	OPEN	NO	N/A	N/A	
4286	1, 2	23	2-RC-MDV-2592	RC/LOOP 2 HOT LEG ISOL	12050-FM-093A2/24/E4		256' C	--	-- 1,37, 14	OPEN	OPEN	NO	N/A	N/A	
4285	1, 2	23	2-RC-MDV-2593	RC/LOOP 2 COLD LEG ISOLATION VALVE	12050-FM-093A2/24/B5		256' C	--	-- 1,37, 14	OPEN	OPEN	NO	N/A	N/A	



NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
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(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
4290	1, 2	23	2-RC-MOV-2594	RC/LOOP 3 HOT LEG ISOLATION VALVE	12050-FM-093A3/26/E6	CONTMT	256' C	--	--	1,37, 14	OPEN	OPEN	NO	N/A	N/A	
4293	1, 2	23	2-RC-MOV-2595	RC/LOOP 3 COLD LEG ISOLATION VALVE	12050-FM-093A3/26/C6	CONTMT	256' C	--	--	1,37, 14	OPEN	OPEN	NO	N/A	N/A	
1269	1, 2	23	2-RC-ND1*	RC/NEUTRON DETECTOR	12050-FM-079A5/17	CONTMT	242'	--	S	1,14, 13	N/A	N/A	YES	N/A	N/A	
1270	1, 2	23	2-RC-ND2*	RC/NEUTRON DETECTOR	12050-FM-079A5/17	CONTMT	242'	--	S	1,14, 13	N/A	N/A	YES	N/A	N/A	
1271	1, 2	23	2-RC-ND3*	RC/NEUTRON DETECTOR	12050-FM-079A5/17	CONTMT	242'	--	S	1,14, 13	N/A	N/A	YES	N/A	N/A	
1272	1, 2	23	2-RC-ND4*	RC/NEUTRON DETECTOR	12050-FM-079A5/17	CONTMT	242'	--	S	1,14, 13	N/A	N/A	YES	N/A	N/A	
1273	1, 2	23	2-RC-ND5*	RC/NEUTRON DETECTOR	12050-FM-079A5/17	CONTMT	242'	--	S	1,14, 13	N/A	N/A	YES	N/A	N/A	
1274	1, 2	23	2-RC-ND6*	RC/NEUTRON DETECTOR	12050-FM-079A5/17	CONTMT	242'	--	S	1,14, 13	N/A	N/A	YES	N/A	N/A	
1275	1, 2	23	2-RC-ND7*	RC/NEUTRON DETECTOR	12050-FM-079A5/17	CONTMT	242'	--	S	1,14, 13	N/A	N/A	YES	N/A	N/A	
1276	1, 2	23	2-RC-ND8*	RC/NEUTRON DETECTOR	12050-FM-079A5/17	CONTMT	242'	--	S	1,14, 13	N/A	N/A	YES	N/A	N/A	
3021C	1, 2	23	2-RC-P-1A	RC/REACTOR COOLANT PUMP A	12050-FM-093B3/22	CONTMT	262'	1	S R	1,14	ON	OFF	NO	N/A	N/A	
3021D	1, 2	23	2-RC-P-1B	RC/REACTOR COOLANT PUMP B	12050-FM-093B3/22	CONTMT	262'	12.5	S R	1,14	ON	OFF	NO	N/A	N/A	
3021E	1, 2	23	2-RC-P-1C	RC/REACTOR COOLANT PUMP C	12050-FM-093B3/22	CONTMT	262'	7	S R	1,14	ON	OFF	NO	N/A	N/A	
1260	1, 2	23	2-RC-R-1	RC/REACTOR VESSEL	12050-FM-093B3/22	CONTMT	256'	--	S	1,14	N/A	N/A	NO	N/A	N/A	
1263	1, 2	23	2-RC-URI*	RC/UPPER REACTOR INTERNALS	12050-FM-093B3/22	CONTMT	262'	--	S	1,14	N/A	N/A	NO	N/A	N/A	
1164	2	R	1-CH-114	CH/BATP SUCTION ALIGNMENT VALVE	11715-FM-095A1/22/A6	AUX	261'	9.5/HJ	--	15	CLOSED	OP/CL	NO	N/A	N/A	
1163	1, 2	R	1-CH-134	CH/BORIC ACID FILTER BYPASS	11715-FM-095A1/22/C8	AUX	244'	9.3/L	--	15	CLOSED	OPEN	NO	N/A	N/A	
1165	1	R	1-CH-139	CH/BATP DISCH ALIGNMENT VALVE	11715-FM-095A1/22/C6	AUX	261'	9.5/HJ	--	15	CLOSED	OP/CL	NO	N/A	N/A	
5073	1, 2	R	2-CC-316	CC/SGBD VENT CONDENSER MANUAL ISOL	11715-FM-079A3/14/B3	AUX	291'	9/G	--	15	OPEN	CLOSED	NO	N/A	N/A	
5074	1, 2	R	2-CC-321	CC/SGBD VENT CONDENSER MANUAL ISOL	11715-FM-079A3/14/C4	AUX	291'	9/G	--	15	OPEN	CLOSED	NO	N/A	N/A	
5074A	1	R	2-CC-43	CC/NONREGEN HX CC MANUAL ISOL	11715-FM-079A3/14/E5	CONTMT	--	--	--	15	OPEN	CLOSED	NO	N/A	N/A	
5074B	1	R	2-CC-50	CC/NONREGEN HX CC MANUAL ISOL	11715-FM-079A3/14/E2	CONTMT	--	--	--	15	OPEN	CLOSED	NO	N/A	N/A	

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 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elv.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1139	2	R	2-CH-127	CH/RCP SEAL WATER FILTER BYPASS	12050-FM-095B1/22/B8	AUX	244'	9	6/L	--	15	CLOSED	OPEN	NO	N/A	N/A
1175	2	R	2-CH-156	CH/MANUAL EMERGENCY BORATE VALVE	12050-FM-095B1/22/B4	AUX	274'	9	6/J	--	15	CLOSED	OPEN	NO	N/A	N/A
1102	2	R	2-CH-223	CH/RCP SEAL WATER INJECTION FILTER ISOL	12050-FM-095C2/14/C3	AUX	257'	10	L	--	15	CLOSED	OPEN	NO	N/A	N/A
1103	2	R	2-CH-224	CH/RCP SEAL WATER INJECTION FILTER ISOL	12050-FM-095C2/14/C3	AUX	257'	10	L	--	15	CLOSED	OPEN	NO	N/A	N/A
1085	2	R	2-CH-251	CH/CHARGING FLOW TO REGEN HX BYPASS	12050-FM-095C3/20/C4	AUX	--	--	--	15	CLOSED	OPEN	NO	N/A	N/A	
1097	2	R	2-CH-255	CH/CCP TO RCP SEAL INJECTION MANUAL VALVE	12050-FM-095C2/14/E3	AUX	245'	--	--	15	CLOSED	OPEN	NO	N/A	N/A	
1054	1	R	2-CH-419	CH/VCT LEVEL ISOL	12050-FM-095B1/22/D5	AUX	275'	9	1/J	--	15	CLOSED	OPEN	NO	N/A	N/A
1055	1	R	2-CH-422	CH/VCT LEVEL ISOL	12050-FM-095B1/22/C5	AUX	275'	9	1/J	--	15	CLOSED	OPEN	NO	N/A	N/A
1056	1	R	2-CH-425	CH/VCT LEVEL ISOL	12050-FM-095B1/22/D5	AUX	275'	9	1/J	--	15	CLOSED	OPEN	NO	N/A	N/A
1057	1	R	2-CH-428	CH/VCT LEVEL ISOL	12050-FM-095B1/22/C5	AUX	275'	9	1/J	--	15	CLOSED	OPEN	NO	N/A	N/A
4109	1	R	2-CN-1001	CN/SAMPLE ISOL	12050-FM-073A/30/B7	YARD	--	--	--	15	OPEN	CLOSED	NO	N/A	N/A	
4110	1	R	2-CN-136	CN/NRV ISOL	12050-FM-073A/30/B7	TB	--	--	--	15	OPEN	CLOSED	NO	N/A	N/A	
4111	1	R	2-CN-137	CN/NRV ISOL	12050-FM-073A/30/B7	TB	--	--	--	15	OPEN	CLOSED	NO	N/A	N/A	
4112	1	R	2-CN-138	CN/NRV ISOL	12050-FM-073A/30/A7	TB	--	--	--	15	OPEN	CLOSED	NO	N/A	N/A	
4113	1	R	2-CN-139	CN/NRV ISOL	12050-FM-073A/30/A7	TB	--	--	--	15	OPEN	CLOSED	NO	N/A	N/A	
4416	1	R	2-CN-140	CN/COND TO HTG BOILER	12050-FM-073A/30/C8		--	--	--	15	OPEN	CLOSED	NO	N/A	N/A	
4115	1	R	2-CN-142	CN/LEVEL CONTROL ISOL	12050-FM-073A/30/D7	YARD	--	--	--	15	OPEN	CLOSED	NO	N/A	N/A	
4108	1	R	2-CN-149	CN/LEVEL CONTROL ISOL	12050-FM-073A/30/C6	YARD	--	--	--	15	OPEN	CLOSED	NO	N/A	N/A	
4107	1	R	2-CN-152	CN/LEVEL CONTROL ISOL	12050-FM-073A/30/C6	YARD	--	--	--	15	OPEN	CLOSED	NO	N/A	N/A	
4114	1	R	2-CN-218	CN/CHILLED WATER ISOL	12050-FM-073A/30/C7		--	--	--	15	OPEN	CLOSED	NO	N/A	N/A	
4106	1	R	2-CN-286	CN/MANUAL ISOL	12050-FM-073A/30/C6	YARD	--	--	--	15	OPEN	CLOSED	NO	N/A	N/A	
4117	1	R	2-CN-WHD121*	CN/ISOL VALVE	12050-FM-073A/30/B7	YARD	--	--	--	15	OPEN	CLOSED	NO	N/A	N/A	
4119	1	R	2-CP-312	CP/CP BACKWASH PUMPS ISOL VALVE	12050-FM-073B/11/B6	YARD	--	--	--	15	OPEN	CLOSED	NO	N/A	N/A	
4118	1	R	2-CP-390	CP/CP BACKWASH PUMPS ISOL VALVE	12050-FM-073B/11/B6	YARD	--	--	--	15	OPEN	CLOSED	NO	N/A	N/A	
4168	2	R	2-FW-128	FW/AFWP TO SG A MANUAL ISOL VALVE	12050-FM-074A1/27/A5	AFPH	273'	--	--	15	CLOSED	OPEN	NO	N/A	N/A	

NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA2\_SSEL.DBF / 05/20/97 / 13:04:12  
 Sort Criteria: Class, ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN	CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elv.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. ST. Normal	OP. ST. Desired	POWER REQ'D	SUPPORTING SYS. DNG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
4119A	1	R	2-FW-144	FW/CONDENSATE STORAGE TANK ISOL	12050-FM-074A3/29/D3	AFPH	274'	--	--	15	CLOSED	OPEN	NO	N/A	N/A	
4140	1	R	2-FW-145	FW/SW MANUAL ISOL TO TDAFWP	12050-FM-074A3/29/B7	AFPH	274'	--	--	15	OPEN	CLOSED	NO	N/A	N/A	
4139	1	R	2-FW-147	FW/SW MANUAL ISOL TO TDAFWP	12050-FM-074A3/29/B7	AFPH	269'	--	--	15	CLOSED	OPEN	NO	N/A	N/A	
4134	2	R	2-FW-152	FW/SW MANUAL ISOL TO MDAFWP	12050-FM-074A3/29/B6	AFPH	276'	--	--	15	OPEN	CLOSED	NO	N/A	N/A	
4133	2	R	2-FW-164	FW/SW MANUAL ISOL TO MDAFWP	12050-FM-074A3/29/B6	AFPH	269'	--	--	15	CLOSED	OPEN	NO	N/A	N/A	
4128	2	R	2-FW-180	FW/SW MANUAL ISOL TO MDAFWP	12050-FM-074A3/29/B5	AFPH	274'	--	--	15	OPEN	CLOSED	NO	N/A	N/A	
4127	2	R	2-FW-182	FW/SW MANUAL ISOL TO MDAFWP	12050-FM-074A3/29/B5	AFPH	269'	--	--	15	CLOSED	OPEN	NO	N/A	N/A	
4141	1, 2	R	2-FW-202	FW/SW MANUAL ISOL TO AFWP HEADER	12050-FM-074A3/29/A8	AFPH	267'	--	--	15	CLOSED	OPEN	NO	N/A	N/A	
4176	2	R	2-FW-64	FW/AFWP TO SG C MANUAL ISOL VALVE	12050-FM-074A1/27/A7	AFPH	273'	--	--	15	CLOSED	OPEN	NO	N/A	N/A	
4174	2	R	2-FW-66	FW/AFWP TO SG C MANUAL ISOL VALVE	12050-FM-074A1/27/A7	AFPH	273'	--	--	15	CLOSED	OPEN	NO	N/A	N/A	
4171	2	R	2-FW-98	FW/AFWP TO SG B MANUAL ISOL VALVE	12050-FM-074A1/27/A6	AFPH	273'	--	--	15	CLOSED	OPEN	NO	N/A	N/A	
5225A	1, 2	R	2-HV-S-1A	HV/SELF CLEANING STRAINER	11715-FB-04002/13/D8	SB	254'	CHILLER RM 11/C	--		ON	ON	YES	N/A	N/A	
5225B	1, 2	R	2-HV-S-1B	HV/SELF CLEANING STRAINER	11715-FB-04002/13/B8	SB	254'	CHILLER RM 11/C	--		ON	ON	YES	N/A	N/A	
5217	2	R	2-HV-V-1*	HV/STANDBY CHILLER MANUAL ISOL	11715-FB-040A2/13/D7	SB	--	--	--	15	CLOSED	OPEN	NO	N/A	N/A	
5218	2	R	2-HV-V-2*	HV/STANDBY CHILLER MANUAL ISOL	11715-FB-040A2/13/D7	SB	--	--	--	15	CLOSED	OPEN	NO	N/A	N/A	
5219	2	R	2-HV-V-3*	HV/STANDBY CHILLER MANUAL ISOL	11715-FB-040A2/13/D4	SB	--	--	--	15	CLOSED	OPEN	NO	N/A	N/A	
5220	2	R	2-HV-V-4*	HV/STANDBY CHILLER MANUAL ISOL	11715-FB-040A2/13/D4	SB	--	--	--	15	CLOSED	OPEN	NO	N/A	N/A	
4016	1, 2	R	2-MS-343	MS/MANUAL BYPASS VALVE	12050-FM-070B1/18/D5	MSVH	285'	13/GB	--	3	CLOSED	CLOSED	NO	N/A	N/A	
4044	1, 2	R	2-MS-352	MS/MANUAL BYPASS VALVE	12050-FM-070B2/20/D4	MSVH	297'	13/GB	--	3	CLOSED	CLOSED	NO	N/A	N/A	
4072	1, 2	R	2-MS-361	MS/MANUAL BYPASS ISOL	12050-FM-070B3/19/D4	MSVH	--	--	--	3	CLOSED	CLOSED	NO	N/A	N/A	
4259	1, 2	R	2-RH-31	RH/RHR LETDOWN ISOL	12050-FM-094A2/14/D5	CONTMT	--	--	--	3	OPEN	OPEN	NO	N/A	N/A	
4264A	1, 2	R	2-RH-37	RH/RHR TO RWST ISOL	12050-FM-094A2/14/C3	CONTMT	--	--	--	15	CLOSED	OPEN	NO	N/A	N/A	
4264B	1, 2	R	2-RH-38	RH/RHR TO RWST ISOL	12050-FM-094A2/14/D3	AUX	--	--	--	15	CLOSED	OPEN	NO	N/A	N/A	
4278A	1, 2	R	2-SI-220	SI/ACCUM OUTLET MANUAL ISOL	12050-FM-096B2/16/C6	CONTMT	220'	9	--	15	OPEN	CLOSED	NO	N/A	N/A	
4281A	1, 2	R	2-SI-222	SI/ACCUM OUTLET MANUAL ISOL	12050-FM-096B3/17/C5	CONTMT	220'	4.3	--	15	OPEN	CLOSED	NO	N/A	N/A	
2049	1, 2	R	2-SI-225	SI/ACCUM OUTLET MANUAL ISOL	12050-FM-096B1/26/B6	CONTMT	220'	14.8	--	15	OPEN	CLOSED	NO	N/A	N/A	
1166	2	R	2-SI-253	SI/BATP TO BIT ISOL	12050-FM-096A3/21/E4	AUX	244'	11.5/J	--	15	OPEN	CLOSED	NO	N/A	N/A	

NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 COMPOSITE SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA2\_SSEL.DBF / 05/20/97 / 13:04:12  
 Sort Criteria: Class, ID Number  
 Filter Criteria: <none>  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Fir. Elv.	LOCATION Rm. or Row/Col	SORT	NOTES	OP. ST. Normal	OP. ST. Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1100	2	R	2-S1-83	S1/BIT BYPASS MANUAL ISOL	12050-FM-096A3/21/F7 AUX	244'	--	--	1,15	CLOSED	OPEN	NO	N/A	N/A		
1100	2	R	2-S1-83	S1/BIT BYPASS MANUAL ISOL	12050-FM-096A3/21/F7 AUX	244'	--	--	A	CLOSED	CLOSED	NO	N/A	N/A		
5226F	2	R	2-SW-335	HV/CR & RELAY ROOM WATER SYSTEM CROSS-TIE VALVE	11715-FB-04002/13/C7 SB	254'	CHILLER RM	--	15	CLOSED	OPEN	NO	N/A	N/A		
5226S	2	R	2-SW-357	HV/CR & RR WATER SYSTEM CROSS-TIE VALVE	11715-FB-04002/13/C3 SB	254'	CHILLER RM	--	15	CLOSED	OPEN	NO	N/A	N/A		

APPENDIX A (Continued)

SEISMIC REVIEW SSEL

NORTH ANNA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
SEISMIC REVIEW SSEL  
(Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA1 SSEL.DBF / 05/21/97 / 09:02:36  
Sort Criteria: Class, ID Number  
Filter Criteria: (Eval. Type CONTAINS 'S')  
Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN	CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT NOTES		OP. ST. Normal	Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
5238	1	0	1-CH-E-1A1	CH/CHARGING PUMP 1A GEAR BOX COOLER	11715-FM-078G1/12/D3	AUX	245'	9.5/J	S	--	N/A	N/A	NO	N/A	N/A	
5236	1	0	1-CH-E-1A2A	CH/CHARGING PUMP 1A SEAL COOLER 1	11715-FM-078G1/12/D3	AUX	245'	9.5/J	S	--	N/A	N/A	NO	N/A	N/A	
5237	1	0	1-CH-E-1A2B	CH/CHARGING PUMP 1A SEAL COOLER 2	11715-FM-078G1/12/D3	AUX	245'	9.5/J	S	--	N/A	N/A	NO	N/A	N/A	
5242	1	0	1-CH-E-1B1	CH/CHARGING PUMP 1B GEAR BOX COOLER	11715-FM-078G1/12/D5	AUX	245'	9.5/J	S	--	N/A	N/A	NO	N/A	N/A	
5240	1	0	1-CH-E-1B2A	CH/CHARGING PUMP 1B SEAL COOLER 1	11715-FM-078G1/12/D5	AUX	245'	9.5/J	S	--	N/A	N/A	NO	N/A	N/A	
5241	1	0	1-CH-E-1B2B	CH/CHARGING PUMP 1B SEAL COOLER 2	11715-FM-078G1/12/D5	AUX	245'	9.5/J	S	--	N/A	N/A	NO	N/A	N/A	
5246	1	0	1-CH-E-1C1	CH/CHARGING PUMP 1C GEAR BOX COOLER	11715-FM-078G1/12/D7	AUX	245'	9.5/J	S	--	N/A	N/A	NO	N/A	N/A	
5244	1	0	1-CH-E-1C2A	CH/CHARGING PUMP 1C SEAL COOLER 1	11715-FM-078G1/12/D7	AUX	245'	9.5/J	S	--	N/A	N/A	NO	N/A	N/A	
5245	1	0	1-CH-E-1C2B	CH/CHARGING PUMP 1C SEAL COOLER 2	11715-FM-078G1/12/D7	AUX	245'	9.5/J	S	--	N/A	N/A	NO	N/A	N/A	
1148	1	0	1-CH-H-6A	CH/BAST A STRIP HEATER	11715-FM-095A1/22/E3	AUX	259'	7/J	S	R --	ON	ON	YES	11715-CH-044/3	N/A	
1149	1	0	1-CH-H-6B	CH/BAST A STRIP HEATER	11715-FM-095A1/22/E3	AUX	262'	7/J	S	R --	ON	ON	YES	11715-CH-045/2	N/A	
1150	2	0	1-CH-H-7A	CH/BAST B STRIP HEATER	11715-FM-095A1/22/E5	AUX	260'	11.2/J	S	R --	ON	ON	YES	11715-CH-041/6	N/A	
1151	2	0	1-CH-H-7B	CH/BAST B STRIP HEATER	11715-FM-095A1/22/E5	AUX	260'	7/J	S	R --	ON	ON	YES	11715-CH-043/3	N/A	
5523	1	0	1-EG-FF-H*	EG/FUEL OIL FILTER	11715-1.30-212C	SB	270'	EDG	S	36,29	N/A	N/A	NO	N/A	EDG-1H	
5524	2	0	1-EG-FF-J*	EG/FUEL OIL FILTER	11715-1.30-212C	SB	270'	EDG	S	36,29	N/A	N/A	NO	N/A	EDG-1J	
4211A3	0	0	1-FW-FY-1479	ELECTRO-PNEUMATIC CONTROLLER		SB	294'	D/4	S							
4211B3	0	0	1-FW-FY-1489	ELECTRO-PNEUMATIC CONTROLLER		SB	294'	D/4	S							
4211C3	0	0	1-FW-FY-1499	ELECTRO-PNEUMATIC CONTROLLER		SB	294'	D/4	S							
7048	1	0	1-HC-HC-1	HC/HYDROGEN COMBINER 1	11715-FMC-092A1/1/B3	YARD/TUNL	274'	11.2/GH	S	R 1,38	OFF	ON	YES	N/A	1-EP-MC-11	
5476	1	0	1-HV-SAD-1H*	HV/DG ROOM 1H SUPPLY AIR DAMPER	11715-FB-024L1/11/D5	SB	272'	14/E	S	--	N/A	N/A	NO	N/A	N/A	
5478	2	0	1-HV-SAD-1J*	HV/DG ROOM 1J SUPPLY AIR DAMPER	11715-FB-024L1/11/D7	SB	272'	16/E	S	--	N/A	N/A	NO	N/A	N/A	
5248	1	0	2-CH-E-1A2A	CH/CHARGING PUMP 2A SEAL COOLER 1	11715-FM-078G2/10/D3	AUX	245'	9.5/J	S	--	N/A	N/A	NO	N/A	N/A	
5249	1	0	2-CH-E-1A2B	CH/CHARGING PUMP 2A SEAL COOLER 2	11715-FM-078G2/10/D3	AUX	245'	9.5/J	S	--	N/A	N/A	NO	N/A	N/A	
5252	1	0	2-CH-E-1B2A	CH/CHARGING PUMP 2B SEAL COOLER 1	11715-FM-078G2/10/D5	AUX	245'	9.5/J	S	--	N/A	N/A	NO	N/A	N/A	
5253	1	0	2-CH-E-1B2B	CH/CHARGING PUMP 2B SEAL COOLER 2	11715-FM-078G2/10/D5	AUX	245'	9.5/J	S	--	N/A	N/A	NO	N/A	N/A	

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 SEISMIC REVIEW SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA1\_SSEL.DBF / 05/21/97 / 09:02:36  
 Sort Criteria: Class, ID Number  
 Filter Criteria: (Eval. Type CONTAINS 'S')  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRASH CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
5256	1	0	2-CH-E-1C2A	CH/CHARGING PUMP 2C SEAL COOLER 1	11715-FM-078G2/10/D7	AUX	245'	10/J	S	--	N/A	N/A	NO	N/A	N/A
5257	1	0	2-CH-E-1C2B	CH/CHARGING PUMP 2C SEAL COOLER 2	11715-FM-078G2/10/D7	AUX	245'	10/J	S	--	N/A	N/A	NO	N/A	N/A
5250	1	0	2-CH-E-2A1	CH/CHARGING PUMP 2A GEAR BOX COOLER	11715-FM-078G2/10/D3	AUX	245'	9.5/J	S	--	N/A	N/A	NO	N/A	N/A
5254	1	0	2-CH-E-2B1	CH/CHARGING PUMP 2B GEAR BOX COOLER	11715-FM-078G2/10/D5	AUX	245'	9.5/J	S	--	N/A	N/A	NO	N/A	N/A
5258	1	0	2-CH-E-2C1	CH/CHARGING PUMP 2C GEAR BOX COOLER	11715-FM-078G2/10/D7	AUX	245'	10/J	S	--	N/A	N/A	NO	N/A	N/A
5525	1	0	2-EG-FF-H*	EG/FUEL OIL FILTER	11715-1.30-212C	SB	270'	EDG	S	36,29	N/A	N/A	NO	N/A	EDG-2H
5526	2	0	2-EG-FF-J*	EG/FUEL OIL FILTER	11715-1.30-212C	SB	270'	EDG	S	36,29	N/A	N/A	NO	N/A	EDG-2J
7059	2	0	2-HC-HC-1	HC/HYDROGEN COMBINER 2	11715-FMC-092A1/1/B3	YARD/TUNL	274'	11.7/GH	S R	1,39	OFF	ON	YES	N/A	2-EP-MC-11
5477	1	0	2-HV-SAD-2H*	HV/DG ROOM 2H SUPPLY AIR DAMPER	11715-FB-024L1/11/D6	SB	272'	15/E	S	--	N/A	N/A	NO	N/A	N/A
5479	2	0	2-HV-SAD-2J*	HV/DG ROOM 2J SUPPLY AIR DAMPER	11715-FB-024L1/11/D8	SB	272'	17/E	S	--	N/A	N/A	NO	N/A	N/A
9999A	0	0	CR	CONTROL ROOM CEILING		SB	277'	CR	S		N/A	N/A	NO	N/A	N/A
5603A	1	0	JB-2661	/JUNCTION BOX	DWG NOT AVAILABLE	QSPH	259'	4.5/GB	S R	6,41	N/A	N/A	YES	N/A	N/A
5603B	1	0	JB-2662	/JUNCTION BOX	DWG NOT AVAILABLE	QSPH	259'	4.5/GB	S R	6,41	N/A	N/A	YES	N/A	N/A
5603C	1	0	JB-2663	/JUNCTION BOX	DWG NOT AVAILABLE	QSPH	259'	4.5/GB	S R	6,41	N/A	N/A	YES	N/A	N/A
5603D	1	0	JB-2664	/JUNCTION BOX	DWG NOT AVAILABLE	QSPH	259'	4.5/GB	S R	6,41	N/A	N/A	YES	N/A	N/A
5603E	1	0	JB-2665	/JUNCTION BOX	DWG NOT AVAILABLE	QSPH	259'	4.5/GB	S R	6,41	N/A	N/A	YES	N/A	N/A
5603F	1	0	JB-2666	/JUNCTION BOX	DWG NOT AVAILABLE	QSPH	259'	4.5/GB	S R	6,41	N/A	N/A	YES	N/A	N/A
6015	1	01	1-EP-MC-10	EP/EMERGENCY MCC 1H1-1	11715-FE-001Z1/14/F8	SB	254'	9/C	S R	41	N/A	N/A	YES	N/A	1-EE-SS-01
6022	2	01	1-EP-MC-11	EP/EMERGENCY MCC 1J1-1	11715-FE-001P1/25/C8	SB	254'	9/C	S R	41	N/A	N/A	YES	N/A	1-EE-SS-02
6021	1	01	1-EP-MC-12	EP/EMERGENCY MCC 1H1-1A	11715-FE-001T1/15/E4	EDG	271'	--	S R	--	N/A	N/A	YES	N/A	1-EP-MC-10
6027	2	01	1-EP-MC-13	EP/EMERGENCY MCC 1J1-1A	11715-FE-001T1/15/D8	EDG	271'	--	S R	--	N/A	N/A	YES	N/A	1-EP-MC-11
6020	1	01	1-EP-MC-19	EP/EMERGENCY MCC 1H1-2N	11715-FE-001Q1/21/F7	AUX	260'	CABLE TUNNEL	S R	41	N/A	N/A	YES	N/A	1-EE-SS-03
6017	1	01	1-EP-MC-20	EP/EMERGENCY MCC 1H1-2S	11715-FE-001Q1/21/D7	AUX	260'	CABLE TUNNEL	S R	41	N/A	N/A	YES	N/A	1-EE-SS-01
6024	2	01	1-EP-MC-21	EP/EMERGENCY MCC 1J1-2N	11715-FE-001R1/21/F7	AUX	260'	CABLE TUNNEL	S R	41	N/A	N/A	YES	N/A	1-EP-MC-22
6023	2	01	1-EP-MC-22	EP/EMERGENCY MCC 1J1-2S	11715-FE-001R1/21/C7	AUX	260'	CABLE TUNNEL	S R	41	N/A	N/A	YES	N/A	1-EE-SS-02

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSCL)  
 SEISMIC REVIEW SSCL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA1\_SSEL.DBF / 05/21/97 / 09:02:36  
 Sort Criteria: Class, ID Number  
 Filter Criteria: (Eval. Type CONTAINS 'S')  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN	CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elv.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
6018	1	01	1-EP-MC-32	EP/EMERGENCY MCC 1H1-3	11715-FE-001T1/15/F8	SWPH	328'	--	S R	--	N/A	N/A	YES	N/A	1-EE-SS-01	
6025	2	01	1-EP-MC-33	EP/EMERGENCY MCC 1J1-3	11715-FE-001T1/15/E8	SWPH	328'	--	S R	--	N/A	N/A	YES	N/A	1-EE-SS-02	
6016	1	01	1-EP-MC-41	EP/EMERGENCY MCC 1H1-4	11715-FE-001Z1/14/D8	SB	254'	9/C	S R	41	N/A	N/A	YES	11715-FE-009EJ/13	1-EE-SS-01	
6019	1	01	1-EP-MC-50	EP/EMERGENCY MCC 1H1-3A	11715-FE-001T1/15/B8	SWPH	326'	--	S R	41	N/A	N/A	YES	N/A	1-EP-MC-32	
6026	2	01	1-EP-MC-51	EP/EMERGENCY MCC 1J1-3A	11715-FE-001T1/15/F3	SWPH	326'	--	S R	41	N/A	N/A	YES	N/A	1-EP-MC-31	
1252	1	02	1-EE-BKR-BYA	CR*/REACTOR TRIP BREAKER BYPASS A	11715-1.27-402A	AUX	280'	RCD	S R	--	CLOSED	OPEN	YES	N/A	N/A	
1253	2	02	1-EE-BKR-BYB	CR*/REACTOR TRIP BREAKER BYPASS B	11715-1.27-402A	AUX	280'	RCD	S R	--	CLOSED	OPEN	YES	N/A	N/A	
1250	1	02	1-EE-BKR-RTA	CR*/REACTOR TRIP BREAKER A	11715-1.27-402A	AUX	280'	RCD	S R	--	CLOSED	OPEN	YES	N/A	N/A	
1251	2	02	1-EE-BKR-RTB	CR*/REACTOR TRIP BREAKER B	11715-1.27-402A	AUX	280'	RCD	S R	--	CLOSED	OPEN	YES	N/A	N/A	
6011	1	02	1-EE-SS-01	EE/480V EMERGENCY BUS 1H	11715-FE-001A1/21/B2	SB	254'	9/C	S R	41	N/A	N/A	YES	N/A	1-BY-B-01,-02;1-EE-ST-1H	
6013	2	02	1-EE-SS-02	EE/480V EMERGENCY BUS 1J	11715-FE-001A1/21/B2	SB	254'	8/C	S R	41	N/A	N/A	YES	N/A	1-BY-B-03,-04;1-EE-ST-1J	
6012	1	02	1-EE-SS-03	EE/480V EMERGENCY BUS 1H1	11715-FE-001A1/21/B2	AUX	280'	RCD	S R	--	N/A	N/A	YES	N/A	1-BY-B-01,-02;1-EE-ST-03	
6014	2	02	1-EE-SS-04	EE/480V EMERGENCY BUS 1J1	11715-FE-001A1/21/B2	AUX	280'	RCD	S R	--	N/A	N/A	YES	N/A	1-BY-B-03,-04;1-EE-ST-02	
6005	1	03	1-EE-SW-01	EE/4KV EMERGENCY BUS 1H (ORANGE)	11715-FE-008BC/13	SB	254'	7/D	S R	41	N/A	N/A	YES	11715-FE-01D/18	EDG 1H;1-BY-B-01,-02	
6006	2	03	1-EE-SW-02	EE/4KV EMERGENCY BUS 1J (PURPLE)	11715-FE-008BP/12	SB	254'	8/D	S R	41	N/A	N/A	YES	11715-FE-01D/18	EDG 1J;1-BY-B-01,-02	
6007	1	04	1-EE-ST-1H	EE/4160/480 SERVICE TRANSFORMER 1H	11715-FE-001A1/21/B3	SB	254'	9/D	S R	--	N/A	N/A	YES	N/A	1-EE-SW-01;EDG 1H	
6008	1	04	1-EE-ST-1H1	EE/4160/480 SERVICE TRANSFORMER 1H1	11715-FE-001A1/21/B2	AUX	280'	RCD	S R	--	N/A	N/A	YES	N/A	1-EE-SW-01;EDG 1H	
6009	2	04	1-EE-ST-1J	EE/4160/480 SERVICE TRANSFORMER 1J	11715-FE-001A1/21/B2	SB	254'	8/D	S R	--	N/A	N/A	YES	N/A	1-EE-SW-02;EDG 1J	
6010	2	04	1-EE-ST-1J1	EE/4160/480 SERVICE TRANSFORMER 1J1	11715-FE-001A1/21/B2	AUX	280'	RCD	S R	--	N/A	N/A	YES	N/A	1-EE-SW-02;EDG 1J	
5551	1	04	1-EE-TRAN-11N	/HEAT TRACE TRANSFORMER	11715-FE-001Q/21	AUX	269'	11/M	S R	--	ON	ON	YES	N/A	N/A	
5552	2	04	1-EE-TRAN-11R	/HEAT TRACE TRANSFORMER	11715-FE-001R/21	AUX	269'	--	S R	--	ON	ON	YES	N/A	N/A	
5553	1	04	1-EE-TRAN-12N	/HEAT TRACE TRANSFORMER	11715-FE-001N/16	AUX	269'	--	S R	--	ON	ON	YES	N/A	N/A	
5554	2	04	1-EE-TRAN-12R	/HEAT TRACE TRANSFORMER	11715-FE-001B/16	AUX	269'	--	S R	--	ON	ON	YES	N/A	N/A	



NORTH ANNA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
SEISMIC REVIEW SSEL  
(Sorted by Equipment Class and Mark Number)

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Sort Criteria: Class, ID Number  
Filter Criteria: (Eval. Type CONTAINS 'S')  
Program File Name & Version: SSEM 2.2

LINE NO.	TRAIN	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT	AL	ES	OP Normal	ST. Desired	POWER REQD?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	
5555	1	04	1-EE-TRAN-13N	/HEAT TRACE TRANSFORMER	11715-FE-001B/16	AUX	284'	10/L	S R	--	ON	ON	YES	N/A	N/A		
5556	2	04	1-EE-TRAN-13R	/HEAT TRACE TRANSFORMER	11715-FE-001R/21	AUX	284'	8.7/G	S R	--	ON	ON	YES	N/A	N/A		
5557	1	04	1-EE-TRAN-14N	/HEAT TRACE TRANSFORMER	11715-FE-001Q/21	AUX	269'	9/LM	S R	--	ON	ON	YES	N/A	N/A		
5558	2	04	1-EE-TRAN-14R	/HEAT TRACE TRANSFORMER	11715-FE-001R/21	AUX	269'	9.7/LH	S R	--	ON	ON	YES	N/A	N/A		
5559	1	04	1-EE-TRAN-41N	/HEAT TRACE TRANSFORMER	11715-FE-001Q/21	AFPH	271'	--	S R	--	ON	ON	YES	N/A	N/A		
5560	2	04	1-EE-TRAN-41R	/HEAT TRACE TRANSFORMER	11715-FE-001R/21	AFPH	271'	--	S R	--	ON	ON	YES	N/A	N/A		
6028	1	04	1-EP-TRAN-79A	EP/480/120 VOLT. REG. TRANSFORMER (79A)	11715-FE-001AE1/13	SB	252'	9/D	S R	--	N/A	N/A	YES	N/A	1-EP-MC-10		
6029	1	04	1-EP-TRAN-79B	EP/480/120 VOLT. REG. TRANSFORMER (79B)	11715-FE-001AE1/13	SB	252'	9/D	S R	--	N/A	N/A	YES	N/A	1-EP-MC-10		
6030	2	04	1-EP-TRANS-80	EP/480/240 VOLT. REG. TRANSFORMER (80)	11715-FE-001AE1/13	SB	252'	9/D	S R	--	N/A	N/A	YES	11715-FE-009GS/17	1-EP-MC-11		
6031	1	04	TRANS-118*	EP/480/120 SEMI-VITAL TRANSFORMER (118)	11715-FE-001AE1/13	SB	254'	EMER SWGR	S R	--	N/A	N/A	YES	N/A	1-EP-MC-41		
6033	2	04	TRANS-119*	EP/480/120 SEMI-VITAL TRANSFORMER (119)	11715-FE-001AE1/13	SB	254'	EMER SWGR	S R	--	N/A	N/A	YES	N/A	1-EP-MC-22		
6032	1	04	TRANS-70*	EP/480/120 SEMI-VITAL TRANSFORMER (70)	11715-FE-001AE1/13	SB	277'	8/D	S R	--	N/A	N/A	YES	N/A	1-EP-MC-10		
6034	2	04	TRANS-71*	EP/480/120 SEMI-VITAL TRANSFORMER (71)	11715-FE-001AE1/13	SB	277'	8/D	S R	--	N/A	N/A	YES	11715-FE-009GS/17	1-EP-MC-11		
5001	1	05	1-CC-P-1A	CC/COMPONENT COOLING WATER PUMP	11715-FM-079A1/17/E7	AUX	245'	8.7/GH	S R	1	ON	ON	YES	N/A	N/A		
5005	1	05	1-CC-P-1B	CC/COMPONENT COOLING WATER PUMP	11715-FM-079A1/17/D7	AUX	245'	8.7/GH	S R	1	ON	ON	YES	N/A	N/A		
1059	1	05	1-CH-P-1A	CH/CENTRIFUGAL CHARGING PUMP A; (CCP A)	11715-FM-095B2/24/C4	AUX	245'	9.5/J	S R	--	ON	ON	YES	N/A	N/A		
1060	2	05	1-CH-P-1B	CH/CENTRIFUGAL CHARGING PUMP B; (CCP B)	11715-FM-095B2/24/C6	AUX	245'	9.5/J	S R	--	ON	ON	YES	N/A	N/A		
1061	3	05	1-CH-P-1C	CH/CENTRIFUGAL CHARGING PUMP C; (CCP C)	11715-FM-095B2/24/C8	AUX	245'	9.5/J	S R	--	ON	ON	YES	N/A	N/A		
1161	1	05	1-CH-P-2A	CH/BORIC ACID TRANSFER PUMP (BATP)	11715-FM-095A1/22/B4	AUX	261'	9.5/HJ	S R	--	ON	ON	YES	N/A	N/A		
1162	2	05	1-CH-P-2B	CH/BORIC ACID TRANSFER PUMP (BATP)	11715-FM-095A1/22/B5	AUX	261'	9.5/HJ	S R	--	OFF	ON	YES	N/A	N/A		
5482	1	05	1-EG-P-1HA	EG/EDG 1H LEAD FO TRANSFER PUMP	11715-FB-035A2/21/B7	FOPH	270'	--	S R	--	OFF	RUNNING	YES	N/A	N/A		
5483	2	05	1-EG-P-1HB	EG/EDG 1H STANDBY FO TRANSFER PUMP	11715-FB-035A2/21/B6	FOPH	270'	--	S R	--	OFF	RUNNING	YES	N/A	N/A		

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 SEISMIC REVIEW SSEL  
 (Sorted by Equipment Class and Mark Number)

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 Sort Criteria: Class, ID Number  
 Filter Criteria: (Eval. Type CONTAINS 'S')  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elv.	LOCATION Rm. or Row/Col	SORT NOTES	OP. Normal	ST. Desired	POWER REDD?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
5484	1	05	1-EG-P-1JA	EG/EDG 1J LEAD FO TRANSFER PUMP	11715-FB-035A2/21/D7	FOPH	270'	--	S R	--	OFF	RUNNING	YES	N/A	N/A	
5485	2	05	1-EG-P-1JB	EG/EDG 1J STANDBY FO TRANSFER PUMP	11715-FB-035A2/21/D6	FOPH	270'	--	S R	--	OFF	RUNNING	YES	N/A	N/A	
5515	1	05	1-EG-P-609H	EG/DC FUEL OIL PUMP	11715-1.30-212C	SB	270'	EDG	S R	36,29	OFF	RUNNING	YES	N/A	EDG-1H	
5516	2	05	1-EG-P-609J	EG/DC FUEL OIL PUMP	11715-1.30-212C	SB	270'	EDG	S R	36,29	OFF	RUNNING	YES	N/A	EDG-1J	
5511	1	05	1-EG-P-610H	EG/ENGINE DRIVEN FO PUMP	11715-1.30-212C	SB	270'	EDG	S	36,29	OFF	RUNNING	NO	N/A	EDG-1H	
5512	2	05	1-EG-P-610J	EG/ENGINE DRIVEN FO PUMP	11715-1.30-212C	SB	270'	EDG	S	36,29	OFF	RUNNING	NO	N/A	EDG-1J	
4140	1	05	1-FW-P-2	FW/TURBINE-DRIVEN AUXILIARY FEEDWATER PUMP (TDAFWP)	11715-FM-074A3/29/B8	AFPH	274'	--	S	--	OFF	RUNNING	YES	N/A	N/A	
4133	2	05	1-FW-P-3A	FW/MOTOR-DRIVEN AUXILIARY FEEDWATER PUMP (MDAFWP)	11715-FM-074A3/29/B6	AFPH	274'	--	S R	--	OFF	RUNNING	YES	N/A	N/A	
4127	2	05	1-FW-P-3B	FW/MOTOR-DRIVEN AUXILIARY FEEDWATER PUMP (MDAFWP)	11715-FM-074A3/29/B5	AFPH	275'	--	S R	--	OFF	RUNNING	YES	N/A	N/A	
7003	1	05	1-QS-P-1A	QS/QS PUMP A	11715-FM-091A2/23/B5	QSPH	274'	4/H	S R	I	OFF	ON	YES	N/A	1-EE-SS-03	
7006	2	05	1-QS-P-1B	QS/QS PUMP B	11715-FM-091A2/23/B4	QSPH	274'	4/H	S R	I	OFF	ON	YES	N/A	1-EE-SS-04	
7037	2	05	1-RS-P-3A	RS/CASING COOLING PUMP A	11715-FM-091B1/05/B7	CSCPH	271'	NOTE 1Y	S R	I	OFF	ON	YES	N/A	1-EP-MC-20	
7040	2	05	1-RS-P-3B	RS/CASING COOLING PUMP B	11715-FM-091B1/05/B6	CSCPH	271'	NOTE 1AA	S R	I	OFF	ON	YES	N/A	1-EP-MC-22	
7035E	1	05	1-SW-P-5	SW/RADIATION MONITORING PUMP	11715-FM-078B1/20/C4	QSPH	265'		S	I	OFF	OFF	NO	N/A	N/A	
7035F	1	05	1-SW-P-6	SW/RADIATION MONITORING PUMP	11715-FM-078B1/20/C5	QSPH	265'		S	I	OFF	OFF	NO	N/A	N/A	
7035G	2	05	1-SW-P-7	SW/RADIATION MONITORING PUMP	11715-FM-078B1/20/C6	QSPH	265'		S	I	OFF	OFF	NO	N/A	N/A	
7035H	2	05	1-SW-P-8	SW/RADIATION MONITORING PUMP	11715-FM-078B1/20/C8	QSPH	265'		S	I	OFF	OFF	NO	N/A	N/A	
7035I	1	05	1-SW-P-9A	SW/RADIATION MONITORING PUMP	11715-FM-078C1/32/E3	AUX	263'		S	I	OFF	OFF	NO	N/A	N/A	
7035J	2	05	1-SW-P-9B	SW/RADIATION MONITORING PUMP	11715-FM-078C1/32/E3	AUX	263'		S	I	OFF	OFF	NO	N/A	N/A	
5486	1	05	2-EG-P-2HA	EG/EDG 2H LEAD FO TRANSFER PUMP	11715-FB-035A2/21/C7	FOPH	270'	--	S R	--	OFF	RUNNING	YES	N/A	N/A	
5487	2	05	2-EG-P-2HB	EG/EDG 2H STANDBY FO TRANSFER PUMP	11715-FB-035A2/21/C6	FOPH	270'	--	S R	--	OFF	RUNNING	YES	N/A	N/A	
5488	1	05	2-EG-P-2JA	EG/EDG 2J LEAD FO TRANSFER PUMP	11715-FB-035A2/21/F7	FOPH	270'	--	S R	--	OFF	RUNNING	YES	N/A	N/A	
5489	2	05	2-EG-P-2JB	EG/EDG 2J STANDBY FO TRANSFER PUMP	11715-FB-035A2/21/F6	FOPH	270'	--	S R	--	OFF	RUNNING	YES	N/A	N/A	
5517	1	05	2-EG-P-709H	EG/DC FUEL OIL PUMP	11715-1.30-212C	SB	270'	EDG	S R	36,29	OFF	RUNNING	YES	N/A	EDG-2H	
5518	2	05	2-EG-P-709J	EG/DC FUEL OIL PUMP	11715-1.30-212C	SB	270'	EDG	S R	36,29	OFF	RUNNING	YES	N/A	EDG-2J	

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 SEISMIC REVIEW SSEL  
 (Sorted by Equipment Class and Mark Number)

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 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elv.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQD?	SUPPORTING SYS. EMG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	RES. ISSUE
(1)	(2)	(3)	(4)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
5513	1	05	2-EG-P-710H	EG/ENGINE DRIVEN FO PUMP	11715-1.30-212C	SB	270'	EDG	S 36,29	OFF	RUNNING	NO	N/A	EDG-2H	
5514	2	05	2-EG-P-710J	EG/ENGINE DRIVEN FO PUMP	11715-1.30-212C	SB	270'	EDG	S 36,29	OFF	RUNNING	NO	N/A	EDG-2J	
5449C	1	06	1-HV-P-20A	HV/CHILLED WATER PUMP	11715-FB-040A1/13	SB	254'	CHILLER RM	S R --	RUNNING	RUNNING	YES	N/A	N/A	
5449I	2	06	1-HV-P-20B	HV/CHILLED WATER PUMP	11715-FB-040A1/13	SB	254'	CHILLER RM 5/D	S R --	RUNNING	RUNNING	YES	N/A	N/A	
5449Z2	2	06	1-HV-P-20C	HV/CHILLED WATER PUMP	11715-FB-040A1/13/DS	SB	254'	CHILLER RM 5/D	S R --	OFF	RUNNING	YES	N/A	N/A	
5428	1	06	1-HV-P-22A	HV/CR & RR WATER SYSTEM BOOSTER PUMP	11715-FB-040D1/15/E6	SB	254'	CHILLER RM	S R --	ON	ON	YES	N/A	N/A	
5429	1	06	1-HV-P-22B	HV/CR & RR WATER SYSTEM BOOSTER PUMP	11715-FB-040D1/15/B6	SB	254'	CHILLER RM	S R --	ON	ON	YES	N/A	N/A	
5430	2	06	1-HV-P-22C	HV/CR & RR WATER SYSTEM BOOSTER PUMP	11715-FB-040D1/15/D6	SB	254'	CHILLER RM	S R --	OFF	ON	YES	N/A	N/A	
4246	1	06	1-RH-P-1A	RH/RHR PUMP A	11715-FM-094A1/14/D7	CONTMT	231'	RHR Flat	S R --	OFF	RUNNING	YES	11715-FM-001D	N/A	
4249	2	06	1-RH-P-1B	RH/RHR PUMP B	11715-FM-094A1/14/D4	CONTMT	231'	RHR Flat	S R --	OFF	RUNNING	YES	11715-FM-001D	N/A	
7012	1	06	1-RS-P-1A	RS/INSIDE RECIRC SPRAY PUMP A	11715-FM-091A3/20/B7	CONTMT	217'	12	S R I	OFF	ON	YES	N/A	1-EE-SS-03	
7017	1	06	1-RS-P-1B	RS/INSIDE RECIRC SPRAY PUMP B	11715-FM-091A3/20/B4	CONTMT	217'	12	S R I	OFF	ON	YES	N/A	1-EE-SS-04	
7023	2	06	1-RS-P-2A	RS/OUTSIDE RECIRC SPRAY PUMP A	11715-FM-091A4/24/B4	SFGD	267'	3.2/LM	S R I	OFF	ON	YES	N/A	1-EE-SS-01	
7028	2	06	1-RS-P-2B	RS/OUTSIDE RECIRC SPRAY PUMP B	11715-FM-091A4/24/B3	SFGD	267'	3.5/JK	S R I	OFF	ON	YES	N/A	1-EE-SS-02	
7009	1	06	1-SI-P-1A	SI/LHSI PUMP A	11715-FM-096A1/28/C6	SFGD	255'	3.2/LM	S R I	OFF	ON	YES	N/A	1-EE-SW-01	
7011	2	06	1-SI-P-1B	SI/LHSI PUMP B	11715-FM-096A1/28/C4	SFGD	255'	3.5/JK	S R I	OFF	ON	YES	N/A	1-EE-SW-02	
5159	1	06	1-SW-P-1A	SW/SERVICE WATER PUMP A	11715-FM-078A3/28/D7	SWPH	328'	SWPH	S R --	RUNNING	RUNNING	YES	N/A	N/A	
5160	2	06	1-SW-P-1B	SW/SERVICE WATER PUMP B	11715-FM-078A3/28/D5	SWPH	328'	SWPH	S R --	OFF	RUNNING	YES	N/A	N/A	
5161	1	06	2-SW-P-1A	SW/SERVICE WATER PUMP A	11715-FM-078A3/28/D4	SWPH	328'	SWPH	S R --	RUNNING	RUNNING	YES	N/A	N/A	
5162	2	06	2-SW-P-1B	SW/SERVICE WATER PUMP B	11715-FM-078A3/28/D3	SWPH	328'	SWPH	S R --	OFF	RUNNING	YES	N/A	N/A	
7159	1	07	1-AS-FCV-100A	AS/AIR EJECTOR STM INLET CONTMT ISOL	11715-FM-072A2/20/E5	TB	279'	8/Z	S I	OPEN	CLOSED	NO	11715-AS-006/4	1-AS-SOV-100A	
7161	1	07	1-AS-FCV-100B	AS/AIR EJECTOR STM INLET CONTMT ISOL	11715-FM-072A2/20/E5	TB	279'	8/C	S I	OPEN	CLOSED	NO	11715-AS-007/4	1-AS-SOV-100B	
7107	1	07	1-BD-TV-100A	BD/SG BLOWDOWN CONTMT ISOL	11715-FM-098A2/16/C5	AUX	244'	7/J	S I	OPEN	CLOSED	NO	11715-BD-001/6	1-BD-SOV-100A	
7109	2	07	1-BD-TV-100B	BD/SG BLOWDOWN CONTMT ISOL	11715-FM-098A2/16/C6	CONTMT	241'	8	S I	OPEN	CLOSED	NO	11715-BD-002/10	1-BD-SOV-100B	

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 SEISMIC REVIEW SSEL  
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 Sort Criteria: Class, ID Number  
 Filter Criteria: (Eval. Type CONTAINS 'S')  
 Program File Name & Version: SSEM 2.2

LINE NO.	TRAIN	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr.Elv.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQD?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
7111	1	07	1-BD-TV-100C	BD/SG BLOWDOWN CONTMT ISOL	11715-FM-098A3/15/C5	AUX	244'	7/J	S	I	OPEN	CLOSED	NO	11715-BD-003/6	1-BD-SOV-100C	
7113	2	07	1-BD-TV-100D	BD/SG 1B BLOWDOWN CONTMT ISOL	11715-FM-098A3/15/C6	CONTMT	241'	8	S	I	OPEN	CLOSED	NO	11715-BD-004/10	1-BD-SOV-100D	
7115	2	07	1-BD-TV-100E	BD/SG 1C BLOWDOWN CONTMT ISOL	11715-FM-098A4/17/D4	AUX	244'	7/J	S	I	OPEN	CLOSED	NO	11715-BD-005/6	1-BD-SOV-100E	
7117	2	07	1-BD-TV-100F	BD/SG 1C BLOWDOWN CONTMT ISOL	11715-FM-098A4/17/C6	CONTMT	241'	8	S	I	OPEN	CLOSED	NO	11715-BD-006/10	1-BD-SOV-100F	
7211	2	07	1-CC-TV-100A	CC/CC RETURN FROM COOLING COIL CONTMT ISOL	11715-FM-079D4/22/E4	AUX	244'	6/K	S	I	OPEN	CLOSED	NO	11715-CC-071/4	1-CC-SOV-100A	
7213	2	07	1-CC-TV-100B	CC/CC RETURN FROM COOLING COIL CONTMT ISOL	11715-FM-079D4/22/D4	AUX	244'	6/J	S	I	OPEN	CLOSED	NO	11715-CC-072/4	1-CC-SOV-100B	
7215	2	07	1-CC-TV-100C	CC/CC RETURN FROM COOLING COIL CONTMT ISOL	11715-FM-079D4/22/C4	AUX	244'	6/K	S	I	OPEN	CLOSED	NO	11715-CC-073/4	1-CC-SOV-100C	
7217	1	07	1-CC-TV-101A	CC/THERMAL BARRIER DISCH CONTMT ISOL	11715-FM-079B1/21/D7	AUX	244'	7/K	S	I	OPEN	CLOSED	NO	11715-CC-067/5	1-CC-SOV-101A	
7219	2	07	1-CC-TV-101B	CC/THERMAL BARRIER DISCH CONTMT ISOL	11715-FM-079B1/21/D6	CONTMT	241'	8	S	I	OPEN	CLOSED	NO	11715-CC-074/5	1-CC-SOV-101B	
7221	1	07	1-CC-TV-102A	CC/RCP CC RETURN CONTMT ISOL	11715-FM-079B4/20/A5	AUX	244'	6.5/J	S	I	OPEN	CLOSED	NO	11715-CC-078/4	1-CC-SOV-102A	
7223	2	07	1-CC-TV-102B	CC/RCP CC RETURN CONTMT ISOL	11715-FM-079B4/20/A3	CONTMT	241'	8	S	I	OPEN	CLOSED	NO	11715-CC-075/8	1-CC-SOV-102B	
7225	1	07	1-CC-TV-102C	CC/RCP CC RETURN CONTMT ISOL	11715-FM-079B3/20/A5	AUX	244'	6.5/J	S	I	OPEN	CLOSED	NO	11715-CC-079/5	1-CC-SOV-102C	
7227	2	07	1-CC-TV-102D	CC/RCP CC RETURN CONTMT ISOL	11715-FM-079B3/20/A3	CONTMT	241'	8	S	I	OPEN	CLOSED	NO	11715-CC-076/6	1-CC-SOV-102D	
7229	1	07	1-CC-TV-102E	CC/RCP CC RETURN CONTMT ISOL	11715-FM-079B2/21/A5	AUX	244'	6.5/J	S	I	OPEN	CLOSED	NO	11715-CC-080/4	1-CC-SOV-102E	
7231	2	07	1-CC-TV-102F	CC/RCP CC RETURN CONTMT ISOL	11715-FM-079B2/21/A3	CONTMT	241'	8	S	I	OPEN	CLOSED	NO	11715-CC-077/6	1-CC-SOV-102F	
5092	1	07	1-CC-TV-103A	CC/RHR HX OUTLET CONTMT ISOL	11715-FM-079B1/21/A7	AUX	252'	7/L	S	1,27	OPEN	CLOSED	NO	11715-CC-081/4	1-CC-SOV-103A	
5100	2	07	1-CC-TV-103B	CC/RHR HX OUTLET CONTMT ISOL	11715-FM-079B1/21/B7	AUX	252'	7/L	S	1,27	OPEN	CLOSED	NO	11715-CC-082/4	1-CC-SOV-103B	
7237	1, 2	07	1-CC-TV-104A	CC/RCP CC CONTMT ISOL	11715-FM-079B2/21/E8	AUX	244'	6.5/J	S	I	OPEN	CLOSED	NO	11715-CC-083/4	1-CC-SOV-104A1 1-CC-SOV-104A2	
7241	1, 2	07	1-CC-TV-104B	CC/RCP CC CONTMT ISOL	11715-FM-079B3/20/E8	AUX	244'	6/J	S	I	OPEN	CLOSED	NO	11715-CC-084/4	1-CC-SOV-104B1 1-CC-SOV-104B2	
7245	1, 2	07	1-CC-TV-104C	CC/RCP CC CONTMT ISOL	11715-FM-079B4/20/E8	AUX	244'	6.5/J	S	I	OPEN	CLOSED	NO	11715-CC-085/4	1-CC-SOV-104C1 1-CC-SOV-104C2	
7249	1	07	1-CC-TV-105A	CC/CC RETURN FROM COOLING COIL CONTMT ISOL	11715-FM-079D4/22/E4	CONTMT	241'	8	S	I	OPEN	CLOSED	NO	11715-CC-086/7	1-CC-SOV-105A	
7251	1	07	1-CC-TV-105B	CC/CC RETURN FROM COOLING COIL CONTMT ISOL	11715-FM-079D4/22/D4	CONTMT	241'	8	S	I	OPEN	CLOSED	NO	11715-CC-087/8	1-CC-SOV-105B	

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 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
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 Filter Criteria: (Eval. Type CONTAINS 'S')  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN	CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Fir. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	SYS. & SUPPORTING COMPONENTS	REQ'D INTERCONNECTIONS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(17)
7253	1	07	1-CC-TV-105C	CC/CC RETURN FROM COOLING COIL CONTMNT ISOL	11715-FM-07904/22/C4	CONTMNT	241'	8	S	I	OPEN	CLOSED	NO	11715-CC-088/8	1-CC-SOV-105C		
1169	2	07	1-CH-FCV-1113A	CH/BAST TO VCT CONTROL	11715-FM-09581/21/C3	AUX	278'	8.5/J	S	1,3	OPEN	CLOSED	NO	11715-CH-017/11	1-CH-SOV-1113A1 1-CH-SOV-1113A2		
7132	2	07	1-CH-TV-1204B	CH/LETDOWN LINE CONTMNT ISOL	11715-FM-095A4/17/B3	AUX	245'	6.5/J	S	I	OPEN	CLOSED	NO	11715-CH-070/5	1-CH-SOV-1204B		
7139	1	07	1-CV-TV-150A	CV/ATMOS CLEANUP CONTMNT ISOL	11715-FM-092A2/13/B4	AUX	244'	6/J	S	I	OPEN	CLOSED	NO	11715-CV-002/6	1-CV-SOV-150A		
7141	2	07	1-CV-TV-150B	CV/ATMOS CLEANUP CONTMNT ISOL	11715-FM-092A2/13/B5	AUX	244'	6/J	S	I	OPEN	CLOSED	NO	11715-CV-003/7	1-CV-SOV-150B		
7143	1	07	1-CV-TV-150C	CV/ATMOS CLEANUP CONTMNT ISOL	11715-FM-092A2/13/B4	AUX	244'	6/J	S	I	OPEN	CLOSED	NO	11715-CV-004/7	1-CV-SOV-150C		
7145	2	07	1-CV-TV-150D	CV/ATMOS CLEANUP CONTMNT ISOL	11715-FM-092A2/13/C5	AUX	244'	6/J	S	I	OPEN	CLOSED	NO	11715-CV-005/6	1-CV-SOV-150D		
4210A		07	1-FW-FCV-1478	FLOW CONTROL TO S/G 1A		SB	294'	4/D	S	R	OPEN	CLOSED					
4211A		07	1-FW-FCV-1479	A MFW REG VALVE BYPASS FLOW CONTROL VALVE		SB	294'	3/D	S	R	45	CLOSED	CLOSED				
4210B		07	1-FW-FCV-1488	FLOW CONTROL TO S/G 1B		SB	294'	4/D	S	R		OPEN	CLOSED				
4211B		07	1-FW-FCV-1489	B MFW REG VALVE BYPASS FLOW CONTROL VALVE		SB	294'	3/D	S	R	45	CLOSED	CLOSED				
4210C		07	1-FW-FCV-1498	FLOW CONTROL TO S/G 1C		SB	294'	4/D	S	R		OPEN	CLOSED				
4211C		07	1-FW-FCV-1499	C MFW REG VALVE BYPASS FLOW CONTROL VALVE		SB	294'	3/D	S	R	45	CLOSED	CLOSED				
4169	1	07	1-FW-HCV-100A	FW/AFWP HEADER TO SG A	11715-FM-074A1/32/A5	AFPH	275'	--	S	--	CLOSED	OPEN	NO	11715-FW-055/4	N/A		
4166	2	07	1-FW-HCV-100B	FW/AFWP HEADER TO SG B	11715-FM-074A1/32/A6	AFPH	275'	--	S	--	CLOSED	OPEN	NO	11715-FW-056/4	N/A		
4145	2	07	1-FW-PCV-159A	FW/AFWP TO SG B CONTROL VALVE	11715-FM-074A3/29/F8	AFPH	271'	--	S	--	OPEN	OPEN	NO	N/A	N/A		
4150	2	07	1-FW-PCV-159B	FW/AFWP TO SG C CONTROL VALVE	11715-FM-074A3/29/E8	AFPH	271'	--	S	--	OPEN	OPEN	NO	N/A	N/A		
2038	2	07	1-GN-PCV-125A-1	GN/PZR PORV N2 SUPPLY PRESSURE REDUCING VALVE	11715-FM-105A1/20/E6	CONTMNT	308'	9.1	S	--	OPEN	OPEN	NO	N/A	N/A		
2039	2	07	1-GN-PCV-125A-2	GN/PZR PORV H2 SUPPLY PRESSURE REDUCING VALVE	11715-FM-105A1/20/E6	CONTMNT	308'	9.1	S	--	OPEN	OPEN	NO	N/A	N/A		
2035	2	07	1-GN-PCV-125A-3	GN/PZR PORV N2 SUPPLY PRESSURE REDUCING VALVE	11715-FM-105A1/20/E6	CONTMNT	308'	9	S	--	OPEN	OPEN	NO	N/A	N/A		
2036	1	07	1-GN-PCV-125B-1	GN/PZR PORV N2 SUPPLY PRESSURE REDUCING VALVE	11715-FM-105A1/20/E4	CONTMNT	308'	9	S	--	OPEN	OPEN	NO	N/A	N/A		
2037	1	07	1-GN-PCV-125B-2	GN/PZR PORV N2 SUPPLY PRESSURE REDUCING VALVE	11715-FM-105A1/20/E4	CONTMNT	308'	9	S	--	OPEN	OPEN	NO	N/A	N/A		

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 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 SEISMIC REVIEW SSEL  
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 Program File Name & Version: SSEM 2.2

LINE NO	TRAIN	EQUIP CLASS	MARK NO	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. normal	ST. Desired	POWER REQD?	SUPPORTING SYS. Dwg. No./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
2034	1	07	1-GN-PCV-125B-3	GN/PZR PORV N2 SUPPLY PRESSURE REDUCING VALVE	11715-FM-105A1/20/E4	CONTMT	308'	9	S	--	OPEN	OPEN	NO	N/A	N/A	
7043	1	07	1-HC-TV-104A	HC/CONTAINMENT ATM PURGE ISOL	11715-FMC-092A1/1/C4	AUX	244'	6/H	S	R 1,24,38	CLOSED	OPEN	YES	13075-HC-002/1	1-HC-SOV-104A	
7045	1	07	1-HC-TV-104B	HC/CONTAINMENT ATM PURGE ISOL	11715-FMC-092A1/1/C4	AUX	244'	6/H	S	R 1,24,38	CLOSED	OPEN	YES	13075-HC-003/1	1-HC-SOV-104B	
7052	1	07	1-HC-TV-105A	HC/CONTAINMENT ATM RETURN ISOL	11715-FMC-092A1/1/E7	AUX	244'	7/K	S	1,24,38	CLOSED	OPEN	YES	13075-HC-004/1	1-HC-SOV-105A	
7050	1	07	1-HC-TV-105B	HC/CONTAINMENT ATM RETURN ISOL	11715-FMC-092A1/1/E7	AUX	244'	7/K	S	1,24,38	CLOSED	OPEN	YES	11715-HC-005	1-HC-SOV-105B	
7054	2	07	1-HC-TV-106A	HC/CONTAINMENT ATM PURGE ISOL	11715-FMC-092A1/1/C5	AUX	244'	6/J	S	1,24,38	CLOSED	OPEN	YES	13075-HC-006/1	1-HC-SOV-106A	
7056	2	07	1-HC-TV-106B	HC/CONTAINMENT ATM ISOL	11715-FMC-092A1/1/C5	AUX	244'	6/J	S	1,24,38	CLOSED	OPEN	YES	13075-HC-007/1	1-HC-SOV-106B	
7063	2	07	1-HC-TV-107A	HC/CONTAINMENT ATM RETURN ISOL	11715-FMC-092A1/1/C8	AUX	244'	7/J	S	1,24,38	CLOSED	OPEN	YES	13075-HC-008/1	1-HC-SOV-107A	
7061	2	07	1-HC-TV-107B	HC/CONTAINMENT ATM RETURN ISOL	11715-FMC-092A1/1/C8	AUX	244'	7/J	S	1,24,38	CLOSED	OPEN	YES	13075-HC-009/1	1-HC-SOV-107B	
1240	1, 2	07	1-HRS-TV-1623	HRS/RC COLD LEG SAMPLE COOLER ISOL	11715-FM-089D1/16/D4	AUX	259'	7.6/K	S	24	CLOSED	OPEN	NO	11715-HRS-014/3	1-HRS-SOV-1623	
1226	1, 2	07	1-HRS-TV-1625	HRS/HOT LEG SAMPLE COOLER INLET ISOL	11715-FM-089D1/16/E6	AUX	259'	7.6/K	S	24	CLOSED	OPEN	NO	11715-HRS-016/3	1-HRS-SOV-1625	
4268	1, 2	07	1-HRS-TV-1627	HRS/SAMPLING SYSTEM ISOL	11715-FM-089D1/16/F4	AUX	259'	7.6/K	S	24	CLOSED	OPEN	NO	N/A	1-HRS-SOV-1627	
7163	1	07	1-LM-TV-100A	LM/LEAKAGE MONITORING CONTMT ISOL	11715-FM-092A1/15/E7	AUX	259'	6.5/J	S	I	OPEN	CLOSED	NO	11715-LM-001/5	1-LM-SOV-100A	
7165	2	07	1-LM-TV-100B	LM/LEAKAGE MONITORING CONTMT ISOL	11715-FM-092A1/15/E6	AUX	259'	6.5/J	S	I	OPEN	CLOSED	NO	11715-LM-002/5	1-LM-SOV-100B	
7167	1	07	1-LM-TV-100C	LM/LEAKAGE MONITORING CONTMT ISOL	11715-FM-092A1/15/E6	AUX	259'	6.5/JK	S	I	OPEN	CLOSED	NO	11715-LM-003/5	1-LM-SOV-100C	
7169	2	07	1-LM-TV-100D	LM/LEAKAGE MONITORING CONTMT ISOL	11715-FM-092A1/15/E5	AUX	259'	6.5/J	S	I	OPEN	CLOSED	NO	11715-LM-004/5	1-LM-SOV-100D	
7171	1	07	1-LM-TV-100E	LM/LEAKAGE MONITORING CONTMT ISOL	11715-FM-092A1/15/F6	AUX	259'	6.5/J	S	I	OPEN	CLOSED	NO	11715-LM-005/5	1-LM-SOV-100E	
7173	2	07	1-LM-TV-100F	LM/LEAKAGE MONITORING CONTMT ISOL	11715-FM-092A1/15/F5	AUX	259'	6.5/J	S	I	OPEN	CLOSED	NO	11715-LM-006/5	1-LM-SOV-100F	
7175	1	07	1-LM-TV-100G	LM/LEAKAGE MONITORING CONTMT ISOL	11715-FM-092A1/15/E7	AUX	259'	6/J	S	I	OPEN	CLOSED	NO	11715-LM-007/5	1-LM-SOV-100G	
7177	2	07	1-LM-TV-100H	LM/LEAKAGE MONITORING CONTMT ISOL	11715-FM-092A1/15/E6	AUX	259'	6/J	S	1,34	OPEN	CLOSED	NO	11715-LM-008	1-LM-SOV-100H	
7179	1	07	1-LM-TV-101A	LM/PRESS SENSOR CONTMT ISOL	11715-FM-092A1/15/D5	AUX	244'	7/J	S	I	OPEN	CLOSED	NO	11715-LM-017/5	1-LM-SOV-101A	
7181	2	07	1-LM-TV-101B	LM/PRESS SENSOR CONTMT ISOL	11715-FM-092A1/15/D5	AUX	246'	7/J	S	I	OPEN	CLOSED	NO	11715-LM-018/5	1-LM-SOV-101B	

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Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN	CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT + or - Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D & SUPPORTING COMPONENTS	INTERCONNECTIONS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(17)
7183	1	07	1-LM-TV-101C	LM/PRESS SENSOR CONTMT ISOL	11715-FM-092A1/15/D5	AUX	244'	7/J	S	I	OPEN	CLOSED	NO	11715-LM-017/5	1-LM-SOV-101C		
7185	2	07	1-LM-TV-101D	LM/PRESS SENSOR CONTMT ISOL	11715-FM-092A1/15/D4	AUX	246'	7/J	S	I	OPEN	CLOSED	NO	11715-LM-018/5	1-LM-SOV-101D		
4014	1	07	1-MS-PCV-101A	MS/SG A ATMOSPHERIC STEAM DUMP VALVE	11715-FM-070B1/19/E5	MSVH	306'	4.5/GA	S	R 25	CLOSED	OPEN	NO	11715-MS-012/7	INST AIR		
4040	2	07	1-MS-PCV-101B	MS/SG B ATMOSPHERIC STEAM DUMP VALVE	11715-FM-070B2/19/E6	MSVH	306'	4/GD	S	R 25	CLOSED	OPEN	NO	11715-MS-013/9	INST AIR		
4066	3	07	1-MS-PCV-101C	MS/SG C ATMOSPHERIC STEAM DUMP VALVE	11715-FM-070B3/23/E5	MSVH	308'	4.5/Gb	S	R 25	CLOSED	OPEN	NO	11715-MS-014/8	INST AIR		
4009	1	07	1-MS-SV-101A	MS/SG A SAFETY VALVE	11715-FM-070B1/19/E6	MSVH	306'	--	S	1,8	CLOSED	CLOSED	NO	N/A	N/A		
4035	2	07	1-MS-SV-101B	MS/SG B SAFETY VALVE	11715-FM-070B2/19/D6	MSVH	306'	--	S	1,8	CLOSED	CLOSED	NO	N/A	N/A		
4061	3	07	1-MS-SV-101C	MS/SG C SAFETY VALVE	11715-FM-070B3/23/D6	MSVH	306'	--	S	1,8	CLOSED	CLOSED	NO	N/A	N/A		
4010	1	07	1-MS-SV-102A	MS/SG A SAFETY VALVE	11715-FM-070B1/19/E5	MSVH	306'	--	S	1,8	CLOSED	CLOSED	NO	N/A	N/A		
4036	2	07	1-MS-SV-102B	MS/SG B SAFETY VALVE	11715-FM-070B2/19/D5	MSVH	306'	--	S	1,8	CLOSED	CLOSED	NO	N/A	N/A		
4062	3	07	1-MS-SV-102C	MS/SG C SAFETY VALVE	11715-FM-070B3/23/D6	MSVH	306'	--	S	1,8	CLOSED	CLOSED	NO	N/A	N/A		
4011	1	07	1-MS-SV-103A	MS/SG A SAFETY VALVE	11715-FM-070B1/19/E6	MSVH	306'	--	S	1,8	CLOSED	CLOSED	NO	N/A	N/A		
4037	2	07	1-MS-SV-103B	MS/SG B SAFETY VALVE	11715-FM-070B2/19/D6	MSVH	306'	--	S	1,8	CLOSED	CLOSED	NO	N/A	N/A		
4063	3	07	1-MS-SV-103C	MS/SG C SAFETY VALVE	11715-FM-070B3/23/D6	MSVH	306'	--	S	1,8	CLOSED	CLOSED	NO	N/A	N/A		
4012	1	07	1-MS-SV-104A	MS/SG A SAFETY VALVE	11715-FM-070B1/19/E6	MSVH	306'	--	S	1,8	CLOSED	CLOSED	NO	N/A	N/A		
4038	2	07	1-MS-SV-104B	MS/SG B SAFETY VALVE	11715-FM-070B2/19/D6	MSVH	306'	--	S	1,8	CLOSED	CLOSED	NO	N/A	N/A		
4064	3	07	1-MS-SV-104C	MS/SG C SAFETY VALVE	11715-FM-070B3/23/D6	MSVH	306'	--	S	1,8	CLOSED	CLOSED	NO	N/A	N/A		
4013	1	07	1-MS-SV-105A	MS/SG A SAFETY VALVE	11715-FM-070B1/19/E5	MSVH	306'	--	S	1,8	CLOSED	CLOSED	NO	N/A	N/A		
4039	2	07	1-MS-SV-105B	MS/SG B SAFETY VALVE	11715-FM-070B2/19/D5	MSVH	306'	--	S	1,8	CLOSED	CLOSED	NO	N/A	N/A		
4065	3	07	1-MS-SV-105C	MS/SG C SAFETY VALVE	11715-FM-070B3/23/D5	MSVH	306'	--	S	1,8	CLOSED	CLOSED	NO	N/A	N/A		
4017	1, 2	07	1-MS-TV-101A	MS/SG A MSIV	11715-FM-070B1/19/C4	MSVH	285'	5.5/GB	S	--	OPEN	CLOSED	YES	11715-MS-110/8	1-MS-SOV-101A1,2,3,5,7		
4043	1, 2	07	1-MS-TV-101B	MS/SG B MSIV	11715-FM-070B2/19/C4	MSVH	285'	4.5/GB	S	--	OPEN	CLOSED	YES	11715-MS-111/9	1-MS-SOV-101B1,2,3,6,7		
4069	1, 2	07	1-MS-TV-101C	MS/SG C MSIV	11715-FM-070B3/23/C4	MSVH	285'	5/GB	S	--	OPEN	CLOSED	YES	11715-MS-112/9	1-MS-SOV-101C1,2,3,4,5,6,7		
7101	1	07	1-MS-TV-109	MS/STEAM DRAIN CONTMT ISOL	11715-FM-070A1/26/AB	MSVH	273'	4.5/GA	S	I	OPEN	CLOSED	NO	11715-MS-113/6	1-MS-SOV-109A 1-MS-SOV-109B		

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 SEISMIC REVIEW SSEL  
 (Sorted by Equipment Class and Mark Number)

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 Sort Criteria: Class, ID Number  
 Filter Criteria: (Eval. Type CONTAINS 'S')  
 Program File Name & Version: SSEM 2.2

LINE NO.	TRAIN	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D & SUPPORTING COMPONENTS	INTERCONNECTIONS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	
7104	1	07	1-MS-TV-110	MS/SG BLOWDOWN CONTMT ISOL	11715-FM-070B3/23/A4	MSVH	271'	4.5/GA	S	I	OPEN	CLOSED	NO	11715-MS-114/3	1-MS-SOV-110A 1-MS-SOV-110B		
4083	1	07	1-MS-TV-111A	MS/TDAFW STEAM ADMISSION	11715-FM-070A3/26/E5	MSVH	274'	5.5	S	--	CLOSED	OPEN	NO	11715-MS-115/8	N/A		
4085	2	07	1-MS-TV-111B	MS/TDAFW STEAM ADMISSION	11715-FM-070A3/26/E4	MSVH	274'	5.5	S	--	CLOSED	OPEN	NO	11715-MS-116/10	N/A		
4099	1, 2	07	1-MS-TV-115	MS/TDAFW TRIP VALVE	11715-FM-070A3/26/C4	MSVH	274'	--	S	--	OPEN	OPEN	NO	N/A	N/A		
2020	2	07	1-RC-PCV-1455C	RC/PZR PORV	11715-FM-093B1/22/D3	CONTMT	308'	9.5	S	--	CLOSED	OP/CL	NO	11715-RC-111/12 ;11715-FK-001D	1-GN-SOV-1455C-1/2/3		
2024	2	07	1-RC-PCV-1456	RC/PZR PORV	11715-FM-093B1/22/E3	CONTMT	308'	9.5	S	--	CLOSED	OP/CL	NO	11715-RC-109/11 ;11715-FK-001D	1-GN-SOV-1456-1/2/3		
2007B	1, 2	07	1-RC-SV-1551A	RC/PRESSURIZER SAFETY VALVE A	11715-FM-093B1/22/E5	CONTMT	316'	9.5	S	1,5	CLOSED	CLOSED	NO	N/A	N/A		
2007C	1, 2	07	1-RC-SV-1551B	RC/PRESSURIZER SAFETY VALVE B	11715-FM-093B1/22/E5	CONTMT	316'	9.5	S	1,5	CLOSED	CLOSED	NO	N/A	N/A		
2007D	1, 2	07	1-RC-SV-1551C	RC/PRESSURIZER SAFETY VALVE C	11715-FM-093B1/22/E6	CONTMT	316'	9.5	S	1,5	CLOSED	CLOSED	NO	N/A	N/A		
4259	1, 2	07	1-RH-FCV-1605	RH/RHR HX BYPASS	11715-FM-094A2/15/C7	CONTMT	234'	5	S	--	CLOSED	CLOSED	NO	11715-RH-004/6 11715-FK-001E	N/A		
4257	1, 2	07	1-RH-HCV-1758	RH/RHR HX OUTLET	11715-FM-094A2/15/C5	CONTMT	228'	5	S	R --	OPEN	OP/CL	YES	11715-RH-005/4 VIMS 29912 11715-FK-001A	N/A		
7187	1	07	1-RM-TV-100A	RM/RADIATION MONITORING RETURN CONTMT ISOL	11715-FM-082N3/8/C5	AUX	244'	7/J	S	I	OPEN	CLOSED	NO	11715-RM-024/4	1-RM-SOV-100A		
7189	1	07	1-RM-TV-100B	RM/RADIATION MONITORING CONTMT ISOL	11715-FM-082N3/8/D5	AUX	244'	7/J	S	I	OPEN	CLOSED	NO	11715-RM-025/4	1-RM-SOV-100B		
7191	2	07	1-RM-TV-100C	RM/RADIATION MONITORING CONTMT ISOL	11715-FM-082N3/8/D4	CONTMT	259'	8	S	I	OPEN	CLOSED	NO	11715-RM-026/7	1-RM-SOV-100C		
7192	2	07	1-RM-TV-100D	RM/RADIATION MONITORING RETURN CONTMT ISOL	11715-FM-082N3/8/C5	AUX	245'	6.5/JK	S	I	OPEN	CLOSED	NO	11715-RM-027/4	1-RM-SOV-100D		
7119	1	07	1-SI-TV-100	SI/NITROGEN HEADER CONTMT ISOL	11715-FM-096B1/17/F3	AUX	246'	6.7/K	S	I	OPEN	CLOSED	NO	11715-SI-034/5	1-SI-SOV-100A 1-SI-SOV-100B		
7122	1	07	1-SI-TV-101	SI/WASTE GAS FILTER CONTMT ISOL	11715-FM-096B1/17/E4	AUX	244'	7/L	S	I	OPEN	CLOSED	NO	11715-SI-013/5	1-SI-SOV-101		
7155	1	07	1-VG-TV-100A	VG/PRIMARY VENT HDR CONTMT ISOL	11715-FM-090C1/17/F3	AUX	244'	6/J	S	I	OPEN	CLOSED	NO	11715-VG-001/3	1-VG-SOV-100A		
7157	2	07	1-VG-TV-100B	VG/PRIMARY VENT HDR CONTMT ISOL	11715-FM-090C1/17/D3	CONTMT	241'	8	S	I	OPEN	CLOSED	NO	11715-VG-002/8	1-VG-SOV-100B		
7071	1	07	2-HC-TV-204A	HC/UNIT 2 CONT. ATM PURGE ISOL	11715-FMC-092A1/1/C3	AUX	244'	12.2/J	S	1,39	CLOSED	OPEN	YES	N/A	2-HC-SOV-204A		
7073	1	07	2-HC-TV-204B	HC/UNIT 2 CONT. ATM PURGE ISOL	11715-FMC-092A1/1/C3	AUX	244'	12.2/J	S	1,39	CLOSED	OPEN	YES	N/A	2-HC-SOV-204B		



NORTH ANNA UNIT 1  
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LINE NO.	TRAIN CLASS	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP Normal	ST. Desired	POWER REQD?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
7065A	1	07	2-HC-TV-205A	HC/HYDROGEN COMBINER 1 UNIT 2 DISCH ISOL	11715-FMC-092A1/1/E6	AUX	244'	11/L	S	1,39	CLOSED	OPEN	YES	N/A	2-HC-SOV-205A	
7063A	1	07	2-HC-TV-205B	HC/HYDROGEN COMBINER 1 UNIT 2 DISCH ISOL	11715-FMC-092A1/1/E7	AUX	244'	11/L	S	1,39	CLOSED	OPEN	YES	N/A	2-HC-SOV-205B	
7075	2	07	2-HC-TV-206A	HC/UNIT 2 CONT. ATM PURGE ISOL	11715-FMC-092A1/1/C3	AUX	244'	11.8/J	S	1,39	CLOSED	OPEN	YES	N/A	2-HC-SOV-206A	
7077	2	07	2-HC-TV-206B	HC/UNIT 2 CONT. ATM PURGE ISOL	11715-FMC-092A1/1/C2	AUX	244'	11.8/J	S	1,39	CLOSED	OPEN	YES	N/A	2-HC-SOV-206B	
7069	2	07	2-HC-TV-207A	HD/HYDROGEN COMBINER 2 UNIT 2 DISCH ISOL	11715-FMC-092A1/1/C6	AUX	244'	11/J	S	1,39	CLOSED	OPEN	YES	N/A	2-HC-SOV-207A	
7067	2	07	2-HC-TV-207B	HC/HYDROGEN COMBINER 2 UNIT 2 DISCH ISOL	11715-FMC-092A1/1/C6	AUX	244'	11/J	S	1,39	CLOSED	OPEN	YES	N/A	2-HC-SOV-207B	
5091	1	08A	1-CC-MOV-100A	CC/RHR HX OUTLET CONTROL VALVE	11715-FM-079B1/21/B3	CONTMT	243'	7	S R	17	CLOSED	OPEN	YES	N/A	N/A	
5099	1	08A	1-CC-MOV-100B	CC/RHR HX OUTLET CONTROL VALVE	11715-FM-079B1/21/A3	CONTMT	243'	7	S R	17	CLOSED	OPEN	YES	N/A	N/A	
3045	2	08A	1-CH-MOV-1115B	CH/RWST TO CCP INLET ISOL	11715-FM-095B2/24/B8	AUX	244'	7.6/J	S R	--	CLOSED	OPEN	YES	N/A	N/A	
3044	1	08A	1-CH-MOV-1115D	CH/RWST TO CCP INLET ISOL	11715-FM-095B2/24/B8	AUX	244'	7.6/J	S R	--	CLOSED	OPEN	YES	N/A	N/A	
1179	1	08A	1-CH-MOV-1350	CH/EMERGENCY BORATE VALVE	11715-FM-095B1/21/B5	AUX	274'	8.5/J	S R	--	CLOSED	OPEN	YES	N/A	N/A	
1119	1	08A	1-CH-MOV-1380	CH/RCP SEALWATER RETURN CONTMT ISOL	11715-FM-095C2/13/F4	CONTMT	241'	8	S R	1	OPEN	CLOSED	YES	N/A	1-EP-MC-20	
1132	2	08A	1-CH-MOV-1381	CH/RCP SEAL RETURN CONTMT ISOL	11715-FM-095B1/21/C8	AUX	244'	7/J	S R	1	OPEN	CLOSED	YES	N/A	1-EP-MC-22	
4172	2	08A	1-FW-MOV-100A	FW/AFWP HEADER TO SG A	11715-FM-074A1/32/A5	AFPH	275'	--	S R	7	CLOSED	OPEN	YES	N/A	N/A	
4165	2	08A	1-FW-MOV-100C	FW/AFWP HEADER TO SG C	11715-FM-074A1/32/A7	AFPH	275'	--	S R	7	CLOSED	OPEN	YES	N/A	N/A	
7002	1	08A	1-QS-MOV-100A	QS/QS PUMP INLET ISOL	11715-FM-091A2/23/A3	QSPH	271'	--	S R	1	CLOSED	OPEN	YES	11715-FE-1Q1/21	1-EP-MC-20	
3069	1	08A	1-QS-MOV-101A	QS/QUENCH SPRAY PUMP A OUTLET ISOL	11715-FM-091A2/23/D5	SFGD	256'	NOTE 3M	S R	1	CLOSED	OPEN	YES	N/A	1-EP-MC-19	
3070	2	08A	1-QS-MOV-101B	QS/QUENCH SPRAY PUMP B OUTLET ISOL	11715-FM-091A2/23/E5	SFGD	256'	NOTE 3M	S R	1	CLOSED	OPEN	YES	N/A	1-EP-MC-21	
3055	1	08A	1-QS-MOV-102A	QS/REFUELING WATER CHEM ADD TANK ISOL	11715-FM-091A1/20/C5	YARD/TUNL	270'	2 FT N OF AFPH	S R	1,21	CLOSED	OPEN	YES	N/A	1-EP-MC-20	
3056	2	08A	1-QS-MOV-102B	QS/REFUELING WATER CHEM ADD TANK ISOL	11715-FM-091A1/20/C6	YARD/TUNL	272'	--	S R	1,21	CLOSED	OPEN	YES	N/A	1-EP-MC-21	
3017	1	08A	1-RC-MOV-1535	RC/PORV BLOCK VALVE	11715-FM-093B1/22/E4	CONTMT	308'	9.4	S R	12	OPEN	OP/CL	YES	11715-RC-134/6	N/A	
3018	1	08A	1-RC-MOV-1536	RC/PORV BLOCK VALVE	11715-FM-093B1/22/D4	CONTMT	308'	9.2	S R	12	OPEN	OP/CL	YES	11715-RC-133/5	N/A	
4244	1, 2	08A	1-RH-MOV-1700	RH/RHR PUMP SUCTION ISOL	11715-FM-094A1/14/A5	CONTMT	241'	2	S R	2	CLOSED	OPEN	YES	VIMS 27905 11715-FP-013A	1-RC-PT-1402	

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 SEISMIC REVIEW SSEL  
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(1)	(2)	(3)	(4)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	
4245	1, 2	08A	1-RH-MOV-1701	RH/RHR PUMP SUCTION ISOL	11715-FM-094A1/14/A4	CONTMT	236'	4	S R 2	CLOSED	OPEN	YES	11715-FP-013A	1-RC-PT-1403		
4271	1, 2	08A	1-RH-MOV-1720A	RH/RHR RETURN ISOL LOOP 2	11715-FM-094A2/15/C3	CONTMT	216'	12	S R --	CLOSED	OPEN	YES	11715-FP-032A	N/A		
4272	1, 2	08A	1-RH-MOV-1720B	RH/RHR RETURN ISOL LOOP 3	11715-FM-094A2/15/B3	CONTMT	216'	7.5	S R --	CLOSED	OPEN	YES	VIMS 30454 11715-FP-013A OR 11715-FP-032A	N/A		
7039	2	08A	1-RS-MOV-100A	RS/CASING COOLING PUMP A DISCH ISOL	11715-FM-091B1/05/E7	SFGD	267'	NOTE 1Z	S R I	CLOSED	OPEN	YES	N/A	1-EP-MC-20		
7042	2	08A	1-RS-MOV-100B	RS/CASING COOLING PUMP B DISCH ISOL	11715-FM-091B1/05/F7	SFGD	267'	NOTE 1BB	S R I	CLOSED	OPEN	YES	N/A	1-EP-MC-21		
1135	1	08A	1-SI-MOV-1836	SI/CCP TO COLD LEGS 1, 2, 3	11715-FM-096A3/22/C8	AUX	244'	6/J	S R 1,21	CLOSED	OPEN	YES	N/A	1-EP-MC-22		
7009A	1	08A	1-SI-MOV-1860A	SI/LHSI PUMP A SUMP ISOL	11715-FM-096A1/28/B7	QSPH	267'	3/K	S R I	CLOSED	OPEN	YES	N/A	1-EP-MC-19		
7011A	2	08A	1-SI-MOV-1860B	SI/LHSI PUMP B SUMP ISOL	11715-FM-096A1/28/B5	QSPH	267'	3/K	S R I	CLOSED	OPEN	YES	N/A	N/A		
1058	1	08A	1-SI-MOV-1863A	SI/LHSI HDR TO CCPs	11715-FM-096A2/23/C5	AUX	244'	7.6/J	S R I	CLOSED	OPEN	YES	N/A	1-EP-MC-19		
1058A	2	08A	1-SI-MOV-1863B	SI/LHSI TO CHARGING PUMP A SUCTION X CONN	11715-FM-095B2/24/B8	AUX	244'	7.6/J	S R 1,32	CLOSED	OPEN	YES	N/A	1-EP-MC-21		
2048	1, 2	08A	1-SI-MOV-1865A	SI/ACCUM OUTLET ISOL	11715-FM-096B1/17/C7	CONTMT	216'	15	S R 2,19	OPEN	CLOSED	YES	VIMS30186-30188 11715-FP-012A	N/A		
4275	1, 2	08A	1-SI-MOV-1865B	SI/ACCUM OUTLET ISOL	11715-FM-096B2/16/C6	CONTMT	216'	13	S R 2,22	OPEN	CLOSED	YES	VIMS30711,30597 11715-FP-012A	N/A		
4278	1, 2	08A	1-SI-MOV-1865C	SI/ACCUM OUTLET ISOL	11715-FM-096B3/13/C6	CONTMT	216'	8	S R 2,22	OPEN	CLOSED	YES	VIMS30380,30294 11715-FP-012A	2J12N		
1136	1	08A	1-SI-MOV-1869A	SI/CCP TO HOT LEGS 1, 2, 3	11715-FM-096A3/22/C8	AUX	244'	6/J	S R 1,21	CLOSED	OPEN	YES	N/A	1-EP-MC-19		
1088	1	08A	1-SI-MOV-1869B	SI/CCP TO HOT LEGS 1, 2, 3	11715-FM-096A3/22/A8	AUX	244'	6/J	S R I	CLOSED	OPEN	YES	N/A	1-EP-MC-21		
5175	2	08A	1-SW-MOV-101A	SW/UNIT 1 RECIRC SPRAY HX ISOL	11715-FM-078A4/43/C3	QSPH	265'	NOTE 1K	S R --	CLOSED	OPEN	YES	N/A	1-EP-MC-19		
5176	1	08A	1-SW-MOV-101B	SW/UNIT 1 RECIRC SPRAY HX ISOL	11715-FM-078A4/43/C3	QSPH	265'	NOTE 1K	S R --	CLOSED	OPEN	YES	N/A	1-EP-MC-21		
5177	2	08A	1-SW-MOV-101C	SW/UNIT 1 RECIRC SPRAY HX ISOL	11715-FM-078A4/43/B3	QSPH	265'	NOTE 1K	S R --	CLOSED	OPEN	YES	N/A	1-EP-MC-19		
5178	1	08A	1-SW-MOV-101D	SW/UNIT 1 RECIRC SPRAY HX ISOL	11715-FM-078A4/43/B3	QSPH	265'	NOTE 1K	S R --	CLOSED	OPEN	YES	N/A	1-EP-MC-21		
7014	1	08A	1-SW-MOV-104A	SW/RECIRC SPRAY COOLER A DISCH ISOL	11715-FM-078B1/20/C4	QSPH	265'	NOTE 1U	S R I	CLOSED	OPEN	YES	N/A	1-EP-MC-19		
7019	1	08A	1-SW-MOV-104B	SW/RECIRC SPRAY COOLER B DISCH ISOL	11715-FM-078B1/20/E5	QSPH	265'	NOTE 1V	S R I	CLOSED	OPEN	YES	N/A	1-EP-MC-21		

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 SEISMIC REVIEW SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA1 SSEL DBF / 05/21/97 / 09:02:36  
 Sort Criteria: Class, ID Number  
 Filter Criteria: (Eval. Type CONTAINS 'S')  
 Program File Name & Version: SSEM 2.2

LINE NO.	TRAIT	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQD?	SUPPORTING SYS. Dwg. No./Rev.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
7031	2	OBA	1-SW-MOV-104C	SW/RECIRC SPRAY COOLER C DISCH ISOL	11715-FM-078B1/20/C6	QSPH	265'	NOTE 1W	S	R I	CLOSED	OPEN	YES	N/A	1-EP-MC-21	
7026	2	OBA	1-SW-MOV-104D	SW/RECIRC SPRAY COOLER D DISCH ISOL	11715-FM-078B1/20/C7	QSPH	265'	NOTE 1U	S	R I	CLOSED	OPEN	YES	N/A	1-EP-MC-19	
5179	1	OBA	1-SW-MOV-105A	SW/RECIRC SPRAY COOLER A OUTLET ISOL	11715-FM-078A4/43/C3	QSPH	265'	NOTE 1K	S	R I	CLOSED	OPEN	YES	N/A	1-EP-MC-19	
5180	1	OBA	1-SW-MOV-105B	SW/RECIRC SPRAY COOLER B OUTLET ISOL	11715-FM-078A4/43/C3	QSPH	265'	NOTE 1K	S	R I	CLOSED	OPEN	YES	N/A	1-EP-MC-21	
5181	1	OBA	1-SW-MOV-105C	SW/RECIRC SPRAY COOLER C OUTLET ISOL	11715-FM-078A4/43/C3	QSPH	265'	NOTE 1K	S	R I	CLOSED	OPEN	YES	N/A	1-EP-MC-19	
5182	1	OBA	1-SW-MOV-105D	SW/RECIRC SPRAY COOLER D OUTLET ISOL	11715-FM-078A4/43/C3	QSPH	265'	NOTE 1P	S	R I	CLOSED	OPEN	YES	N/A	1-EP-MC-21	
5211	1	OBA	2-SW-MOV-201A	SW/UNIT 2 RECIRC SPRAY HX ISOL	11715-FM-078A4/43/E7	QSPH	256'	QSPH	S	R --	CLOSED	OPEN	YES	N/A	2-EP-MC-19	
5212	2	OBA	2-SW-MOV-201B	SW/UNIT 2 RECIRC SPRAY HX ISOL	11715-FM-078A4/43/E7	QSPH	256'	QSPH	S	R --	CLOSED	OPEN	YES	N/A	2-EP-MC-21	
5213	1	OBA	2-SW-MOV-201C	SW/UNIT 2 RECIRC SPRAY HX ISOL	11715-FM-078A4/43/E7	QSPH	256'	QSPH	S	R --	CLOSED	OPEN	YES	N/A	2-EP-MC-19	
5214	2	OBA	2-SW-MOV-201D	SW/UNIT 2 RECIRC SPRAY HX ISOL	11715-FM-078A4/43/E7	QSPH	256'	QSPH	S	R --	CLOSED	OPEN	YES	N/A	2-EP-MC-21	
5215	1	OBA	2-SW-MOV-205A	SW/UNIT 2 RECIRC SPRAY HX ISOL	11715-FM-078A4/43/E7	QSPH	256'		S	R I	CLOSED	OPEN	YES	N/A	2-EP-MC-19	
5216	2	OBA	2-SW-MOV-205B	SW/UNIT 2 RECIRC SPRAY HX ISOL	11715-FM-078A4/43/E7	QSPH	256'		S	R I	CLOSED	OPEN	YES	N/A	2-EP-MC-21	
5217	1	OBA	2-SW-MOV-205C	SW/UNIT 2 RECIRC SPRAY HX ISOL	11715-FM-078A4/43/E7	QSPH	256'		S	R I	CLOSED	OPEN	YES	N/A	2-EP-MC-19	
5218	2	OBA	2-SW-MOV-205D	SW/UNIT 2 RECIRC SPRAY HX ISOL	11715-FM-078A4/43/E7	QSPH	256'		S	R I	CLOSED	OPEN	YES	N/A	2-EP-MC-21	
7160	1	OBB	1-AS-SOV-100A	AS/AIR EJECTOR STM INLET CONTMT ISOL PILOT	11715-FM-072A2/20/E5	TB	279'	8/Z	S	R I	AIR	VENT	NO	11715-AS-006/4	N/A	
7162	1	OBB	1-AS-SOV-100B	AS/AIR EJECTOR STM INLET CONTMT ISOL PILOT	11715-FM-072A2/20/E5	TB	279'	8/C	S	R I	AIR	VENT	NO	11715-AS-007/4	N/A	
7108	1	OBB	1-BD-SOV-100A	BD/SG 1A BLOWDOWN CONTMT ISOL PILOT	11715-FM-098A2/16/D5	AUX	244'	7/J	S	R I	AIR	VENT	NO	11715-BD-001/6	N/A	
7110	2	OBB	1-BD-SOV-100B	BD/SG BLOWDOWN CONTMT ISOL PILOT	11715-FM-098A2/16/D6	CONTMT	241'	8	S	R I	AIR	VENT	NO	11715-BD-002/10	N/A	
7112	1	OBB	1-BD-SOV-100C	BD/SG 1B BLOWDOWN CONTMT ISOL PILOT	11715-FM-098A3/15/D5	AUX	244'	7/J	S	R I	AIR	VENT	NO	11715-BD-003/6	N/A	
7114	2	OBB	1-BD-SOV-100D	BD/SG 1B BLOWDOWN CONTMT ISOL PILOT	11715-FM-098A3/15/D6	CONTMT	241'	8	S	R I	AIR	VENT	NO	11715-BD-004/10	N/A	
7118	2	OBB	1-BD-SOV-100F	BD/SG 1C BLOWDOWN CONTMT ISOL PILOT	11715-FM-098A4/17/C6	CONTMT	241'	8	S	R I	AIR	VENT	NO	11715-BD-006/10	N/A	

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 SEISMIC REVIEW SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA1 SSEL DBF / 05/21/97 / 09:02:36  
 Sort Criteria: Class, ID Number  
 Filter Criteria: (Eval. Type CONTAINS 'S')  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	EQUIPMENT Building	ELEVATION Fir. Elev.	LOCATION Rm. or Row/Col.	SORT NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING DMG. NO./REV.	SYS. & SUPPORTING	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
7212	2	088	1-CC-SOV-100A	CC/CC RETURN FROM COOLING CONTMT ISOL PILOT	11715-FM-07904/22/E4 AUX	244'	7/K	S R I	AIR	VENT	NO	11715-CC-071/4	N/A			
7214	2	088	1-CC-SOV-100B	CC/CC RETURN FROM COOLING COIL CONTMT ISOL PILOT	11715-FM-07904/22/D4 AUX	244'	6/J	S R I	AIR	VENT	NO	11715-CC-072/4	N/A			
7216	2	088	1-CC-SOV-100C	CC/CC RETURN FROM COOLING COIL CONTMT ISOL PILOT	11715-FM-07904/22/C4 AUX	244'	7/K	S R I	AIR	VENT	NO	11715-CC-073/4	N/A			
7218	1	088	1-CC-SOV-101A	CC/THERMAL BARRIER DISCH CONTMT ISOL PILOT	11715-FM-07981/21/D7 AUX	244'	7/K	S R I	AIR	VENT	NO	11715-CC-067/5	N/A			
7220	2	088	1-CC-SOV-101B	CC/THERMAL BARRIER DISCH CONTMT ISOL PILOT	11715-FM-07981/21/D6 CONTMT	241'	8	S R I	AIR	VENT	NO	11715-CC-074/5	N/A			
7222	1	088	1-CC-SOV-102A	CC/RCP CC RETURN CONTMT ISOL PILOT	11715-FM-07984/20/B6 AUX	244'	7/J	S R I	AIR	VENT	NO	11715-CC-078/4	N/A			
7224	2	088	1-CC-SOV-102B	CC/RCP CC RETURN CONTMT ISOL PILOT	11715-FM-07984/20/A3 CONTMT	241'	8	S R I	AIR	VENT	NO	11715-CC-075/8	N/A			
7226	1	088	1-CC-SOV-102C	CC/RCP CC RETURN CONTMT ISOL PILOT	11715-FM-07983/20/B6 AUX	244'	6.5/J	S R I	AIR	VENT	NO	11715-CC-079/5	N/A			
7228	2	088	1-CC-SOV-102D	CC/RCP CC RETURN CONTMT ISOL PILOT	11715-FM-07983/20/A3 CONTMT	241'	8	S R I	AIR	VENT	NO	11715-CC-076/6	N/A			
7230	1	088	1-CC-SOV-102E	CC/RCP CC RETURN CONTMT ISOL PILOT	11715-FM-07982/21/B6 AUX	244'	6.5/J	S R I	AIR	VENT	NO	11715-CC-080/4	N/A			
7232	2	088	1-CC-SOV-102F	CC/RCP CC RETURN CONTMT ISOL PILOT	11715-FM-07982/21/A4 CONTMT	241'	8	S R I	AIR	VENT	NO	11715-CC-077/6	N/A			
5093	1	088	1-CC-SOV-103A	CC/RHR HX OUTLET CONTMT ISOL PILOT	11715-FM-07981/21/B7 AUX	252'	7/L	S R I,27	AIR	VENT	NO	11715-CC-081/4	N/A			
5101	2	088	1-CC-SOV-103B	CC/RHR HX OUTLET CONTMT ISOL PILOT	11715-FM-07981/21/C7 AUX	252'	7/L	S R I,27	AIR	VENT	NO	11715-CC-082/4	N/A			
7238	1	088	1-CC-SOV-104A1	CC/RCP CC CONTMT ISOL PILOT	11715-FM-07982/21/E8 AUX	244'	6.2/J	S R I	AIR	VENT	NO	11715-CC-083/4	N/A			
7239	2	088	1-CC-SOV-104A2	CC/RCP CC CONTMT ISOL PILOT	11715-FM-07982/21/E8 AUX	244'	6.2/J	S R I	AIR	VENT	NO	11715-CC-083/4	N/A			
7242	1	088	1-CC-SOV-104B1	CC/RCP CC CONTMT ISOL PILOT	11715-FM-07983/20/E8 AUX	244'	6/J	S R I	AIR	VENT	NO	11715-CC-084/4	N/A			
7243	2	088	1-CC-SOV-104B2	CC/RCP CC CONTMT ISOL PILOT	11715-FM-07983/20/E8 AUX	244'	6/J	S R I	AIR	VENT	NO	11715-CC-084/4	N/A			
7246	1	088	1-CC-SOV-104C1	CC/RCP CC CONTMT ISOL PILOT	11715-FM-07984/20/E8 AUX	244'	6.5/J	S R I	AIR	VENT	NO	11715-CC-085/4	N/A			
7247	2	088	1-CC-SOV-104C2	CC/RCP CC CONTMT ISOL PILOT	11715-FM-07984/20/E8 AUX	244'	6.5/J	S R I	AIR	VENT	NO	11715-CC-085/4	N/A			
7250	1	088	1-CC-SOV-105A	CC/CC RETURN FROM COOLING COIL CONTMT ISOL PILOT	11715-FM-07904/22,24 CONTMT	241'	8	S R I	AIR	VENT	NO	11715-CC-086/7	N/A			
7252	1	088	1-CC-SOV-105B	CC/CC RETURN FROM COOLING COIL CONTMT ISOL PILOT	11715-FM-07904/22/D4 CONTMT	241'	8	S R I	AIR	VENT	NO	11715-CC-087/8	N/A			
7254	1	088	1-CC-SOV-105C	CC/CC RETURN FROM COOLING COIL CONTMT ISOL PILOT	11715-FM-07904/22/C4 CONTMT	241'	8	S R I	AIR	VENT	NO	11715-CC-088/8	N/A			
1171	2	088	1-CH-SOV-1113A1	CH/BAST TO VCT CONTROL PILOT	11715-CH-017/11 AUX	278'	8.5/J	S R I	AIR	VENT	NO	11715-CH-017/11	1-EP-CB-26A			

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 SEISMIC REVIEW SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA1\_SSEL.DBF / 05/21/97 / 09:02:36  
 Sort Criteria: Class, ID Number  
 Filter Criteria: (Eval. Type CONTAINS 'S')  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQD?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE		
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)		
1172	2	08B	1-CH-SOV-1113A2	CH/BAST TO VCT CONTROL PILOT	11715-CH-017/11	AUX	278'	8	5/J	S	R	I	AIR	VENT	NO	11715-CH-017/11	1-EP-CB-26A
7132A	2	08B	1-CH-SOV-1204B	CH/LETDOWN LINE CONTMT ISOL PILOT	11715-CH-070/5	AUX	245'	6	5/J	S	R	I	AIR	VENT	NO	11715-CH-070/5	N/A
7140	1	08B	1-CV-SOV-150A	CV/ATMOS CLEANUP CONTMT ISOL PILOT	11715-FM-092A2/13/B4	AUX	244'	6	J	S	R	I	AIR	VENT	NO	11715-CV-002/6	N/A
7142	2	08B	1-CV-SOV-150B	CV/ATMOS CLEANUP CONTMT ISOL PILOT	11715-FM-092A2/13/B5	AUX	244'	6	J	S	R	I	AIR	VENT	NO	11715-CV-003/7	N/A
7144	1	08B	1-CV-SOV-150C	CV/ATMOS CLEANUP CONTMT ISOL PILOT	11715-FM-092A2/13/C4	AUX	244'	6	J	S	R	I	AIR	VENT	NO	11715-CV-004/7	N/A
7146	2	08B	1-CV-SOV-150D	CV/ATMOS CLEANUP CONTMT ISOL PILOT	11715-FM-092A2/13/C5	AUX	244'	6	J	S	R	I	AIR	VENT	NO	11715-CV-005/6	N/A
5543	1	08B	1-EG-SOV-600HA	EG/AIR START SOLENOID VALVE	11715-FM-107A1/09/E6	SB	270'	DG		S	R	36	OFF	ON	YES	N/A	EDG-1H
5544	2	08B	1-EG-SOV-600HB	EG/AIR START SOLENOID VALVE	11715-FM-107A2/09/E6	SB	270'	DG		S	R	36	OFF	ON	YES	N/A	EDG-1H
5545	1	08B	1-EG-SOV-600JA	EG/AIR START SOLENOID VALVE	11715-FM-107A3/10/E6	SB	270'	DG		S	R	36	OFF	ON	YES	N/A	EDG-1J
5546	2	08B	1-EG-SOV-600JB	EG/AIR START SOLENOID VALVE	11715-FM-107A4/10/E6	SB	270'	DG		S	R	36	OFF	ON	YES	N/A	EDG-1J
4210A1		08B	1-FW-SOV-147B-1	SOLENOID OPERATED VALVE		SB	294'	4/D, MER#1		S	R						
4210A2		08B	1-FW-SOV-147B-2	SOLENOID OPERATED VALVE		SB	294'	4/D, MER#1		S	R						
4211A1		08B	1-FW-SOV-1479-1	SOLENOID OPERATED VALVE		SB	294'	3/D, MER#1		S	R						
4211A2		08B	1-FW-SOV-1479-2	SOLENOID OPERATED VALVE		SB	294'	3/D, MER#1		S	R						
4210B1		08B	1-FW-SOV-1488-1	SOLENOID OPERATED VALVE		SB	294'	4/D		S	R						
4210B2		08B	1-FW-SOV-1488-2	SOLENOID OPERATED VALVE		SB	294'	4/D		S	R						
4211B1		08B	1-FW-SOV-1489-1	SOLENOID OPERATED VALVE		SB	294'	3/D		S	R						
4211B2		08B	1-FW-SOV-1489-2	SOLENOID OPERATED VALVE		SB	294'	3/D		S	R						
4210C1		08B	1-FW-SOV-1498-1	SOLENOID OPERATED VALVE		SB	294'	4/D, MER#1		S	R						
4210C2		08B	1-FW-SOV-1498-2	SOLENOID OPERATED VALVE		SB	294'	4/D, MER#1		S	R						
4211C1		08B	1-FW-SOV-1499-1	SOLENOID OPERATED VALVE		SB	294'	3/D		S	R						
4211C2		08B	1-FW-SOV-1499-2	SOLENOID OPERATED VALVE		SB	294'	3/D		S	R						
7044	1	08B	1-HC-SOV-104A	HS/CONTAINMENT ATM PURGE PILOT	11715-FMC-092A1/1/C4	AUX	244'	6	H	S	R	1,24,38	VENT	AIR	YES	13075-HC-002/1	1-EP-CB-80E
7046	1	08B	1-HC-SOV-104B	HC/CONTAINMENT ATM PURGE ISOL PILOT	11715-FMC-092A1/1/C4	AUX	244'	6	H	S	R	1,24,38	VENT	AIR	YES	13075-HC-003/1	1-EP-CB-80B
7053	1	08B	1-HC-SOV-105A	HC/CONTAINMENT ATM RETURN ISOL PILOT	11715-FMC-092A1/1/E8	AUX	244'	7	K	S	R	1,24,38	VENT	AIR	YES	N/A	1-EP-CB-80E

NORTH ANNA UNIT 3  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 SEISMIC REVIEW SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA1\_SSEL.DBF / 05/21/97 / 09:02:36  
 Sort Criteria: Class, ID Number  
 Filter Criteria: (Eval. Type CONTAINS 'S')  
 Program File Name & Version: SSEM 2.2

LINE NO	TRAIN	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr.Elv.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP Normal	ST. Desired	POWER REQD?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
7051	1	08B	1-HC-SOV-105B	HC/CONTAINMENT ATM RETURN ISOL PILOT	11715-FMC-092A1/1/E9	AUX	244'	7/X	S R	1,24,38	VENT	AIR	YES	11715-HC-005	1-EP-CB-80B	
7055	2	08B	1-HC-SOV-106A	HC/CONTAINMENT ATM PURGE ISOL PILOT	11715-FMC-092A1/1/C5	AUX	244'	6/J	S R	1,24,38	VENT	AIR	YES	13075-HC-006/1	1-EP-CB-80G	
7057	2	08B	1-HC-SOV-106B	HC/CONTAINMENT ATM PURGE ISOL PILOT	11715-FMC-092A1/1/C5	AUX	244'	6/J	S R	1,24,38	VENT	AIR	YES	13075-HC-007/1	1-EP-CB-80D	
7064	2	08B	1-HC-SOV-107A	HC/CONTAINMENT ATM RETURN ISOL PILOT	11715-FMC-092A1/1/C8	AUX	244'	7/J	S R	1,24,38	VENT	AIR	YES	13075-HC-008/1	1-EP-CB-80G	
7062	2	08B	1-HC-SOV-107B	HC/CONTAINMENT ATM RETURN ISOL PILOT	11715-FMC-092A1/1/C8	AUX	244'	7/J	S R	1,24,38	VENT	AIR	YES	13075-HC-009/1	1-EP-CB-80D	
1241	1, 2	08B	1-HRS-SOV-1623	HRS/RC COLD LEG SAMPLE COOLER ISOL PILOT	11715-FM-089D1/16/D5	AUX	259'	7.6/K	S R	24	VENT	AIR	YES	11715-HRS-014/3	INST AIR	
1227	1, 2	08B	1-HRS-SOV-1625	HRS/RC COLD LEG SAMPLE COOLER INLET ISOL PILOT	11715-FM-089D1/16/E6	AUX	259'	7.6/K	S R	24	VENT	AIR	YES	11715-HRS-016/3	INST AIR	
4269	1, 2	08B	1-HRS-SOV-1627	HRS/SAMPLING SYSTEM ISOL PILOT	11715-FM-089D1/16/F4	AUX	259'	7.6/K	S R	24	VENT	AIR	YES	N/A	INST AIR	
5425R	1	08B	1-HV-SOV-1200A	HV/CND WTR PUMP SEAL FLOW CONTROL	11715-FB-040D1/15	SB	256'	CHILLER RM	S R	--	OP/CL	OPEN	YES	N/A	N/A	
5425S	1	08B	1-HV-SOV-1200B	HV/CND WTR PUMP SEAL FLOW CONTROL	11715-FB-040D1/15	SB	256'	CHILLER RM	S R	--	OP/CL	OPEN	YES	N/A	N/A	
5425T	2	08B	1-HV-SOV-1200C	HV/CND WTR PUMP SEAL FLOW CONTROL	11715-FB-040D1/15	SB	256'	CHILLER RM	S R	--	OP/CL	OPEN	YES	N/A	N/A	
7164	1	08B	1-LM-SOV-100A	LM/LEAKAGE MONITORING CONTMT ISOL PILOT	11715-FM-092A1/15/F7	AUX	259'	6.5/J	S R	I	AIR	VENT	NO	11715-LM-001/5	N/A	
7166	2	08B	1-LM-SOV-100B	LM/LEAKAGE MONITORING CONTMT ISOL PILOT	11715-FM-092A1/15/F6	AUX	259'	6.5/J	S R	I	AIR	VENT	NO	11715-LM-002/5	N/A	
7168	1	08B	1-LM-SOV-100C	LM/LEAKAGE MONITORING CONTMT ISOL PILOT	11715-FM-092A1/15/F6	AUX	259'	6.5/JK	S R	I	AIR	VENT	NO	11715-LM-003/5	N/A	
7170	2	08B	1-LM-SOV-100D	LM/LEAKAGE MONITORING CONTMT ISOL PILOT	11715-FM-092A1/15/F5	AUX	259'	6.5/J	S R	I	AIR	VENT	NO	11715-LM-004/5	N/A	
7172	1	08B	1-LM-SOV-100E	LM/LEAKAGE MONITORING CONTMT ISOL PILOT	11715-FM-092A1/15/F6	AUX	259'	6.5/J	S R	I	AIR	VENT	NO	11715-LM-005/5	N/A	
7174	2	08B	1-LM-SOV-100F	LM/LEAKAGE MONITORING CONTMT ISOL PILOT	11715-FM-092A1/15/F5	AUX	259'	6.5/J	S R	I	AIR	VENT	NO	11715-LM-006/5	N/A	
7176	1	08B	1-LM-SOV-100G	LM/LEAKAGE MONITORING CONTMT ISOL PILOT	11715-FM-092A1/15/F6	AUX	259'	6/J	S R	I	AIR	VENT	NO	11715-LM-007/5	N/A	
7178	2	08B	1-LM-SOV-100H	LM/LEAKAGE MONITORING CONTMT ISOL PILOT	11715-FM-092A1/15/F6	AUX	259'	6/J	S R	I,31	AIR	VENT	NO	11715-LM-008	N/A	

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 SEISMIC REVIEW SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NAI\_SSEL.DBF / 05/21/97 / 09:02:36  
 Sort Criteria: Class, ID Number  
 Filter Criteria: (Eval. Type CONTAINS 'S')  
 Program File Name & Version: SSEM 2.2

LINE NO.	TRAIN	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
7180	1	08B	1-LM-SOV-101A	LM/PRESS SENSOR CONTMT ISOL PILOT	11715-FM-092A1/15/D5	AUX	244'	7/J	S	R I	AIR	VENT	NO	11715-LM-017/5	N/A	
7182	2	08B	1-LM-SOV-101B	LM/PRESS SENSOR CONTMT ISOL PILOT	11715-FM-092A1/15/D5	AUX	246'	7/J	S	R i	AIR	VENT	NO	11715-LM-018/5	N/A	
7184	1	08B	1-LM-SOV-101C	LM/PRESS SENSOR CONTMT ISOL PILOT	11715-FM-092A1/15/D5	AUX	244'	7/J	S	R I	AIR	VENT	NO	11715-LM-017/5	N/A	
7186	2	08B	1-LM-SOV-101D	LM/PRESS SENSOR CONTMT ISOL PILOT	11715-FM-092A1/15/D5	AUX	246'	7/J	S	R i	AIR	VENT	NO	11715-LM-018/5	N/A	
4018	1, 2	08B	1-MS-SOV-101A1	MS/SG A MSIV PILOT VALVE	11715-FM-070B1/19/E4	QSPH	272'	4.5/GB	S	R --	AIR	VENT	YES	N/A	N/A	
4019	1, 2	08B	1-MS-SOV-101A2	MS/SG A MSIV PILOT VALVE	11715-FM-070B1/19/E4	QSPH	272'	4.5/GB	S	R --	AIR	VENT	YES	N/A	N/A	
4020	1, 2	08B	1-MS-SOV-101A6	MS/SG A MSIV PILOT VALVE	11715-FM-070B1/19/F4	QSPH	272'	4.5/GB	S	R --	AIR	VENT	YES	N/A	N/A	
4021	1, 2	08B	1-MS-SOV-101A7	MS/SG A MSIV PILOT VALVE	11715-FM-070B1/19/D3	QSPH	272'	4.5/GB	S	R --	AIR	VENT	YES	N/A	N/A	
4044	1, 2	08B	1-MS-SOV-101B1	MS/SG B MSIV PILOT VALVE	11715-FM-070B2/19/E4	QSPH	272'	4.5/GB	S	R --	AIR	VENT	YES	11715-MS-111/9	N/A	
4045	1, 2	08B	1-MS-SOV-101B2	MS/SG B MSIV PILOT VALVE	11715-FM-070B2/19/E4	QSPH	272'	4.5/GB	S	R --	AIR	VENT	YES	11715-MS-111/9	N/A	
4046	1, 2	08B	1-MS-SOV-101B6	MS/SG B MSIV PILOT VALVE	11715-FM-070B2/19/E4	QSPH	272'	4.5/GB	S	R --	AIR	VENT	YES	11715-MS-111/9	N/A	
4047	1, 2	08B	1-MS-SOV-101B7	MS/SG B MSIV PILOT VALVE	11715-FM-070B2/19/F4	QSPH	272'	4.5/GB	S	R --	AIR	VENT	YES	11715-MS-111/9	N/A	
4070	1, 2	08B	1-MS-SOV-101C1	MS/SG C MSIV PILOT VALVE	11715-FM-070B3/23/D4	QSPH	272'	4.5/GB	S	R --	AIR	VENT	YES	11715-MS-112/9	N/A	
4071	1, 2	08B	1-MS-SOV-101C2	MS/SG C MSIV PILOT VALVE	11715-FM-070B3/23/D4	QSPH	272'	4.5/GB	S	R --	AIR	VENT	YES	11715-MS-112/9	N/A	
4072	1, 2	08B	1-MS-SOV-101C4	MS/SG C MSIV PILOT VALVE	11715-FM-070B3/23/D4	QSPH	272'	4.5/GB	S	R --	AIR	VENT	YES	11715-MS-112/9	N/A	
4073	1, 2	08B	1-MS-SOV-101C5	MS/SG C MSIV PILOT VALVE	11715-FM-070B3/23/D4	QSPH	272'	4.5/GB	S	R --	AIR	VENT	YES	11715-MS-112/9	N/A	
4074	1, 2	08B	1-MS-SOV-101C6	MS/SG C MSIV PILOT VALVE	11715-FM-070B3/23/D4	QSPH	272'	4.5/GB	S	R --	AIR	VENT	YES	11715-MS-112/9	N/A	
4075	1, 2	08B	1-MS-SOV-101C7	MS/SG C MSIV PILOT VALVE	11715-FM-070B3/23/D4	QSPH	272'	4.5/GB	S	R --	AIR	VENT	YES	11715-MS-112/9	N/A	
7102	1	08B	1-MS-SOV-109A	MS/STEAM DRAIN CONTMT ISOL PILOT	11715-FM-070A1/26/A8	MSVH	273'	4.5/GA	S	R I,5,36	AIR	VENT	NO	11715-MS-113/6	N/A	
7103	1	08B	1-MS-SOV-109B	MS/STEAM DRAIN CONTMT ISOL PILOT	11715-FM-070A1/26/A8	MSVH	273'	4.5/GA	S	R I,5,36	AIR	VENT	NO	11715-MS-113/6	N/A	
7105	1	08B	1-MS-SOV-110A	MS/SG BLOWDOWN CONTMT ISOL PILOT	11715-FM-070B3/23/A4	MSVH	271'	4.6/GA	S	R I	AIR	VENT	NO	11715-MS-114/3	N/A	
7106	1	08B	1-MS-SOV-110B	MS/SG BLOWDOWN CONTMT ISOL PILOT	11715-FM-070B3/23/A4	MSVH	271'	4.6/GA	S	R I	AIR	VENT	NO	11715-MS-114/3	N/A	
4084	1	08B	1-MS-SOV-111A	MS/TDAFW STEAM ADMISSION PILOT	11715-FM-070A3/26/E5	MSVH	252'	5.5	S	R --	AIR	VENT	YES	11715-MS-115/8	N/A	
4086	2	08B	1-MS-SOV-111B	MS/TDAFW STEAM ADMISSION PILOT	11715-FM-070A3/26/E4	MSVH	252'	5.5	S	R --	AIR	VENT	YES	11715-MS-116/10	N/A	
2021	2	08B	1-RC-SOV-1455C-1	GN/PZR PORV PILOT	11715-FM-105A1/20/F5	CONTMT	308'	9.5	S	R 33	VENT	AIR	YES	11715-RC-111/12 ;11715-FK-001D	N/A	
2022	2	08B	1-RC-SOV-1455C-2	GN/PZR PORV PILOT	11715-FM-105A1/20/F5	CONTMT	308'	9.5	S	R 33	VENT	AIR	YES	11715-RC-111/12 ;11715-FK-001D	N/A	

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
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 Filter Criteria: (Eval. Type CONTAINS 'S')  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D & SUPPORTING COMPONENTS	INTERCONNECTIONS	REG. ISSUE	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
2023	2	08B	1-RC-SOV-1455C-3	GN/PZR PORV PILOT	11715-FM-105A1/20/F5	CONTMT	308'	9.5	S	R	33	AIR	VENT	YES	11715-RC-111/12	N/A
2026	2	08B	1-RC-SOV-1456-1	GN/PZR PORV PILOT	11715-FM-105A1/20/F6	CONTMT	308'	9.5	S	R	33	VENT	AIR	YES	11715-RC-109/11 ;11715-FK-001D	N/A
2027	2	08B	1-RC-SOV-1456-2	GN/PZR PORV PILOT	11715-FM-105A1/20/F6	CONTMT	308'	9.5	S	R	33	VENT	AIR	YES	11715-RC-109/11 ;11715-FK-001D	N/A
2028	2	08B	1-RC-SOV-1456-3	GN/PZR PORV PILOT	11715-FM-105A1/20/F6	CONTMT	308'	9.5	S	R	33	AIR	VENT	YES	11715-RC-109/11	N/A
7188	1	08B	1-RM-SOV-100A	RM/RADIATION MONITORING RETURN CONTMT ISOL PILOT	11715-FM-082N3/8/C5	AUX	245'	6.5/JK	S	R	I	AIR	VENT	NO	11715-RM-024/4	N/A
7190	1	08B	1-RM-SOV-100B	RM/RADIATION MONITORING ISOL PILOT	11715-FM-082N3/8/D5	AUX	244'	7/J	S	R	I	AIR	VENT	NO	11715-RM-025/4	N/A
7191A	2	08B	1-RM-SOV-100C	RM/RADIATION MONITORING ISOL PILOT	11715-FM-082N3/8/D4	CONTMT	259'	8	S	R	I	AIR	VENT	NO	11715-RM-026/7	N/A
7192A	2	08B	1-RM-SOV-100D	RM/RADIATION MONITORING RETURN CONTMT ISOL PILOT	11715-FM-082N3/8/C5	AUX	245'	6.5/JK	S	R	I	AIR	VENT	NO	11715-RM-027/4	N/A
7123A	1	08B	1-SI-SOV-100A	SI/NITROGEN HEADER ISOL PILOT	11715-FM-096B1/17/F3	AUX	246'	6.7/K	S	R	I	AIR	VENT	NO	11715-SI-034/5	N/A
7123B	1	08B	1-SI-SOV-100B	SI/NITROGEN HEADER ISOL PILOT	11715-FM-096B1/17/F3	AUX	246'	6.7/K	S	R	I	AIR	VENT	NO	11715-SI-034/5	N/A
7124	1	08B	1-SI-SOV-101	SI/WASTE GAS FILTER ISOL PILOT	11715-FM-096B1/17/E4	AUX	244'	7/L	S	R	I	AIR	VENT	NO	11715-SI-013/5	N/A
1236	1, 2	08B	1-SS-TV-102A	SS/COLD LEG SAMPLE HEADER ISOL	11715-FM-089D1/16/D6	CONTMT	241'	8.5	S	R	A,40	CLOSED	OP/CL	YES	11715-SS-005/5; 11715-FK-001D	N/A
1237	1, 2	08B	1-SS-TV-102B	SS/RC COLD LEG SAMPLE ISOL	11715-FM-089D1/16/D6	AUX	245'	7/K	S	R	A,40	CLOSED	OP/CL	YES	11715-SS-006/3	N/A
4264	1, 2	08B	1-SS-TV-103A	SS/SAMPLING SYSTEM ISOL	11715-FM-089D1/16/F7	CONTMT	241'	7.5	S	R	A,40	CLOSED	OP/CL	YES	11715-SS-013/3; 11715-SS-008	N/A
4265	1, 2	08B	1-SS-TV-103B	SS/SAMPLING SYSTEM ISOL	11715-FM-089D1/16/F5	AUX	245'		S	R	A,40	CLOSED	OP/CL	YES	N/A	N/A
1224	1, 2	08B	1-SS-TV-106A	SS/HOT LEG SAMPLE HEADER ISOL	11715-FM-089D1/16/E6	CONTMT	241'	8.5	S	R	A,40	CLOSED	OP/CL	YES	11715-SS-011/6; 11715-FK-001D	N/A
1225	1, 2	08B	1-SS-TV-106B	SS/HOT LEG SAMPLE ISOL	11715-FM-089D1/16/E6	AUX	245'	7/K	S	R	A,40	CLOSED	OP/CL	YES	11715-SS-012/3	N/A
4262	1, 2	08B	1-SS-TV-107A	SS/RHR HX OUTLET TO SAMPLING SYSTEM	11715-FM-089D1/16/F8	CONTMT	216'	7	S	R	--	CLOSED	OPEN	YES	11715-SS-013/3 11715-FK-001D VIMS30448-30450	N/A
4263	1, 2	08B	1-SS-TV-107B	SS/RHR HX OUTLET TO SAMPLING SYSTEM	11715-FM-089D1/16/F8	CONTMT	241'	4	S	R	--	CLOSED	OPEN	YES	11715-SS-014/3 VIMS27348,27370	N/A



NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 SEISMIC REVIEW SSEL  
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 Program File Name & Version: SSEH 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D & SUPPORTING COMPONENTS	INTERCONNECTIONS	REG. ISSUE		
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)			
1223	1, 2	08B	1-SS-TV-108D	SS/HOT LEG SAMPLE ISOL	11715-FM-089D1/16/D8	CONTMT	241'	13	B	S	R	---	CLOSED	OPEN	YES	11715-SS-018/4 VIMS 28479, 28416, 28436	N/A	
1231	1, 2	08B	1-SS-TV-109A	SS/COLD LEG SAMPLE ISOL	11715-FM-089D1/16/D8	CONTMT	243'	CA	1.5	A	S	R	---	CLOSED	OPEN	NO	11715-SS-019/3 VIMS 27864 11715-FK-001E	N/A
7156	1	08B	1-VG-SOV-100A	VG/PRIMARY VENT HDR CONTMT ISOL PILOT	11715-FM-090C1/17/F4	AUX	244'	6/J		S	R	I	AIR	VENT	NO	11715-VG-001/3	N/A	
7158	2	08B	1-VG-SOV-100B	VG/PRIMARY VENT HDR CONTMT ISOL PILOT	11715-FM-090C1/17/D4	CONTMT	241'	8		S	R	I	AIR	VENT	NO	11715-VG-002/8	N/A	
5547	1	08B	2-EG-SOV-700HA	EG/AIR START SOLENOID VALVE	12050-FM-107A1	SB	270'	DG		S	R	36	OFF	ON	YES	N/A	EDG-2H	
5548	2	08B	2-EG-SOV-700HB	EG/AIR START SOLENOID VALVE	12050-FM-107A2	SB	270'	DG		S	R	36	OFF	ON	YES	N/A	EDG-2H	
5549	1	08B	2-EG-SOV-700JA	EG/AIR START SOLENOID VALVE	15050-FM-107A3	SB	270'	DG		S	R	36	OFF	ON	YES	N/A	EDG-2J	
5550	2	08B	2-EG-SOV-700JB	EG/AIR START SOLENOID VALVE	12050-FM-107A4	SB	270'	DG		S	R	36	OFF	ON	YES	N/A	EDG-2J	
7072	1	08B	2-HC-SOV-204A	HC/UNIT 2 CONT. ATM PURGE ISOL PILOT	11715-FMC-092A1/1/C3	AUX	244'	12	2/J	S	R	1,39	VENT	AIR	YES	N/A	2-EP-CB-80E	
7074	1	08B	2-HC-SOV-204B	HC/UNIT 2 CONT. ATM PURGE ISOL PILOT	11715-FMC-092A1/1/C3	AUX	244'	12	2/J	S	R	1,39	VENT	AIR	YES	N/A	2-EP-CB-80B	
7066A	1	08B	2-HC-SOV-205A	HC/HYDROGEN COMBINER 1 UNIT 2 DISCH ISOL PILOT	11715-FMC-092A1/1/F7	AUX	244'	11/L		S	R	1,39	VENT	AIR	YES	N/A	2-EP-CB-80E	
7064A	1	08B	2-HC-SOV-205B	HC/HYDROGEN COMBINER UNIT 2 DISCH ISOL PILOT	11715-FMC-092A1/1/F7	AUX	244'	11/L		S	R	1,39	VENT	AIR	YES	N/A	2-EP-CB-80B	
7076	2	08B	2-HC-SOV-206A	HC/UNIT 2 CONT. ATM PURGE ISOL PILOT	11715-FMC-092A1/1/C3	AUX	244'	11	8/J	S	R	1,39	VENT	AIR	YES	N/A	2-EP-CB-80G	
7078	2	08B	2-HC-SOV-206B	HC/UNIT 2 CONT. ATM PURGE ISOL PILOT	11715-FMC-092A1/1/C2	AUX	244'	11	8/J	S	R	1,39	VENT	AIR	YES	N/A	2-EP-CB-80D	
7070	2	08B	2-HC-SOV-207A	HC/HYDROGEN COMBINER 2 UNIT 2 DISCH ISOL PILOT	11715-FMC-092A1/1/C6	AUX	244'	11/J		S	R	1,39	VENT	AIR	YES	N/A	2-EP-CB-80G	
7068	2	08B	2-HC-SOV-207B	HC/HYDROGEN COMBINER 2 UNIT 2 DISCH ISOL PILOT	11715-FMC-092A1/1/C6	AUX	244'	11/J		S	R	1,39	VENT	AIR	YES	N/A	2-EP-CB-80D	
5432	1	11	1-HV-E-4A	HV/CHILLER UNIT	11715-FB-040D1/15/E5	SB	254'	AC	RM 4/C	S	R	---	ON	ON	YES	11715-FB-040A1/ 13	1-EP-MC-10	
5433	1	11	1-HV-E-4B	HV/CHILLER UNIT	11715-FB-040D1/15/B5	SB	254'	AC	RM 4/C	S	R	---	ON	ON	YES	11715-FB-040A1/ 13	1-EP-MC-11	

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
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 Program File Name & Version: SSEL 2.2

LINE NO.	TRAIN	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elv.	LOCATION Rm. or Row/Col.	SORT NOTES	<-- OP Normal	ST. --> Desired	POWER REQD?	SUPPORTING SYS. DNG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10) (11)	(12)	(13)	(14)	(15)	(16)	(17)
5434	2	11	1-HV-E-4C	HV/CHILLER UNIT	11715-FB-04001/15/DS	SB	254'	AC RM 4/D	S R --	ON	ON	YES	11715-FB-040A1/13	1-EP-MC-41	
6057	1	14	1-BP-SW-1	BP/BY-PASS SWITCH 1 (MANUAL)	11715-FE-001V1/02/J2	SB	277'	9/C	S		INVERT	INVERT	YES	11715-FE-11E/05	1-VB-1-01
6058	1	14	1-BP-SW-2	BP/BY-PASS SWITCH 2 (MANUAL)	11715-FE-001V1/02/J4	SB	277'	9/C	S		INVERT	INVERT	YES	11715-FE-11E/05	1-VB-1-02
6059	2	14	1-BP-SW-3	BP/BY-PASS SWITCH 3 (MANUAL)	11715-FE-001V1/02/J5	SB	277'	8/C	S		INVERT	INVERT	YES	11715-FE-11E/05	1-VB-1-03
6060	2	14	1-BP-SW-4	BP/BY-PASS SWITCH 4 (MANUAL)	11715-FE-001V1/02/J7	SB	277'	8/D	S		INVERT	INVERT	YES	11715-FE-11E/05	1-VB-1-04
6065	1	14	1-EP-CB-002	EP/120 AC UNIT 1 APP-R DIST. PNL (RED)	11715-FE-001AE1/13/A	SB	254'	10/C	S R --	N/A	N/A	YES	N/A	1-VB-1-01	
6061	1	14	1-EP-CB-04A	EP/120V VITAL AC 1-I BUS (RED & ORANGE)	11715-FE-001V1/02/D1	SB	277'	9/C	S R --	N/A	N/A	YES	N/A	1-BP-SW-01	
6062	1	14	1-EP-CB-04B	EP/120V VITAL AC 1-II BUS (WHITE)	11715-FE-001V1/02/D2	SB	277'	9/C	S R --	N/A	N/A	YES	N/A	1-BP-SW-02	
6063	2	14	1-EP-CB-04C	EP/120V VITAL AC 1-III BUS (BLUE & PURPLE)	11715-FE-001V1/02/D4	SB	277'	9/C	S R --	N/A	N/A	YES	N/A	1-BP-SW-03	
6064	2	14	1-EP-CB-04D	EP/120V VITAL AC 1-IV BUS (YELLOW)	11715-FE-001V1/02/D5	SB	277'	9/C	S R --	N/A	N/A	YES	N/A	1-BP-SW-04	
6045	1	14	1-EP-CB-12A	EP/125V VITAL DC BUS (1-I)	11715-FE-001E1/18/E7	SB	254'	9/C	S R --	N/A	N/A	YES	N/A	1-BY-C-02,-03,-04;1-BY-B-01	
6046	1	14	1-EP-CB-12B	EP/125V VITAL DC BUS (1-II)	11715-FE-001E1/18/D7	SB	254'	9/C	S R --	N/A	N/A	YES	N/A	1-BY-C-02,-03,-04;1-BY-B-02	
6047	2	14	1-EP-CB-12C	EP/125V VITAL DC BUS (1-III)	11715-FE-001E2/17/E7	SB	259'	8/C	S R --	N/A	N/A	YES	N/A	1-BY-C-05,-06,-07;1-BY-B-03	
6048	2	14	1-EP-CB-12D	EP/125V VITAL DC BUS (1-IV)	11715-FE-001E2/17/D7	SB	254'	8/C	S R --	N/A	N/A	YES	N/A	1-BY-C-05,-06,-07;1-BY-B-04	
6035	1	14	1-EP-CB-16A	EP/120V SEMI-VITAL AC 1A BUS	11715-FE-001W1/16/E1	SB	277'	8/D	S R --	N/A	N/A	YES	N/A	TRANS-70	
6037	2	14	1-EP-CB-16B	EP/120V SEMI-VITAL AC 1B BUS	11715-FE-001W1/16/E3	SB	277'	8/D	S R --	N/A	N/A	YES	N/A	TRANS-71	
5571	1	14	1-EP-CB-41AN	EP/HEAT TRACE DISTRIBUTION CABINET	11715-FE-1Q/27	AFPH	271'	1.1/LA	S R --	ON	ON	YES	N/A	N/A	
5583	2	14	1-EP-CB-41AR	EP/HEAT TRACE DISTRIBUTION CABINET	11715-FE-63 SERIES	AFPH	271'	1.1/LA	S R 30	ON	ON	YES	N/A	N/A	
5572	1	14	1-EP-CB-41BN	EP/HEAT TRACE DISTRIBUTION CABINET	11715-FE-1Q/27	AFPH	271'	1.1/LA	S R --	ON	ON	YES	N/A	N/A	
5584	2	14	1-EP-CB-41BR	EP/HEAT TRACE DISTRIBUTION CABINET	11715-FE-63 SERIES	AFPH	271'	1.1/LA	S R 30	ON	ON	YES	N/A	N/A	
6068	1	14	1-EP-CB-80B	EP/120 VAC INSTRUM DIST PANEL 1-II	11715-FE-018S/19/J4	SB	277'	6/C	S R I	N/A	N/A	YES	11715-FE-1AB/12	1-EP-CB-04B	
6069	2	14	1-EP-CB-80D	EP/120 VAC INSTRUM DIST PANEL 1-IV	11715-FE-018T/21/J5	SB	277'	7/E	S R I	N/A	N/A	YES	11715-FE-1AD/10	1-EP-CB-04D	
6070	1	14	1-EP-CB-80E	EP/120 VAC INSTRUM DIST PANEL 1-V	13075-FE-018Y/8	SB	277'	7/D	S R I	N/A	N/A	YES	11715-FE-1AA/13	1-EP-CB-04A	

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 SEISMIC REVIEW SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA1\_SSEL.DBF / 05/21/97 / 09:02:36  
 Sort Criteria: Class, ID Number  
 Filter Criteria: (Eval. Type CONTAINS 'S')  
 Program File Name & Version: SSEM 2.2

LINE NO.	TRAIN	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr./Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	DP Normal	ST. Desired	POWER REQ'D	SUPPORTING SYS. DMG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
6071	2	14	1-EP-CB-80G	EP/120 VAC INSTRUM DIST PANEL 1-VII	13075-FE-018Y/8	SB	277'	7/D	S	R I	N/A	N/A	YES	11715-FE-1AC/12	1-EP-CB-04C	
6049	1	15	1-BY-B-01	BY/125V BATTERY 1-I	11715-FE-001E1/18/D7	SB	294'	9/C	S	--	N/A	N/A	YES	N/A	N/A	
6050	1	15	1-BY-B-02	BY/125V BATTERY 1-II	11715-FE-001E1/18/B7	SB	252'	9/C	S	--	N/A	N/A	YES	N/A	N/A	
6051	2	15	1-BY-B-03	BY/125V BATTERY 1-III	11715-FE-001E2/17/E7	SB	294'	8/DB	S	--	N/A	N/A	YES	N/A	N/A	
6052	2	15	1-BY-B-04	BY/125V BATTERY 1-IV	11715-FE-001E2/17/C7	SB	252'	8/D	S	--	N/A	N/A	YES	N/A	N/A	
6066	1	15	1-EG-B-01A	AP/EDG BATTERIES AND RACKS	11715-1.30-212C	SB	272'	EDG1H	S	--	N/A	N/A	NO	N/A	N/A	
6067	2	15	1-EG-B-03C	AP/EDG BATTERIES AND RACKS	11715-1.30-212C	SB	272'	EDG1J	S	--	N/A	N/A	NO	N/A	N/A	
6040	1	16	1-BY-C-02	BY/BATTERY CHARGER 1-I	11715-FE-001E1/18/D7	SB	254'	EMER SWGR	S	R --	N/A	N/A	YES	N/A	1-EP-MC-10	
6039	1	16	1-BY-C-03	BY/BATTERY CHARGER 1C-I	11715-FE-001E1/18/D8	SB	254'	EMER SWGR	S	R --	N/A	N/A	YES	N/A	1-EP-MC-10	
6041	1	16	1-BY-C-04	BY/BATTERY CHARGER 1-II	11715-FE-001E1/18/C7	SB	254'	EMER SWGR	S	R --	N/A	N/A	YES	N/A	1-EP-MC-10	
6043	2	16	1-BY-C-05	BY/BATTERY CHARGER 1-III	11715-FE-010B1/19/A9	SB	254'	EMER SWGR	S	R --	N/A	N/A	YES	N/A	1-EP-MC-11	
6042	2	16	1-BY-C-06	BY/BATTERY CHARGER 1C-III	11715-FE-010B1/19/C9	SB	254'	EMER SWGR	S	R --	N/A	N/A	YES	N/A	1-EP-MC-11	
6044	2	16	1-BY-C-07	BY/BATTERY CHARGER 1-IV	11715-FE-010B1/19/F6	SB	254'	EMER SWGR	S	R --	N/A	N/A	YES	N/A	1-EP-MC-11	
6053	1	16	1-VB-I-01	VB/INVERTER TO VITAL 1-I BUS	11715-FE-011E/05/B8	SB	252'	9/C	S	R --	N/A	N/A	YES	N/A	1-EP-CB-12A	
6054	1	16	1-VB-I-02	VB/INVERTER TO VITAL 1-II BUS	11715-FE-011E/05/E8	SB	252'	9/C	S	R --	N/A	N/A	YES	N/A	1-EP-CB-12B	
6055	2	16	1-VB-I-03	VB/INVERTER TO VITAL 1-III BUS	11715-FE-011E/05/H8	SB	252'	8/C	S	R --	N/A	N/A	YES	N/A	1-EP-CB-12C	
6056	2	16	1-VB-I-04	VB/INVERTER TO VITAL 1-IV BUS	11715-FE-011E/05/L8	SB	252'	8/C	S	R --	N/A	N/A	YES	N/A	1-EP-CB-12D	
6001	1	17	EDG-1H*	AP/EMERGENCY DIESEL GENERATOR 1H	11715-FE-001A1/21/B3	SB	272'	14/D	S	R --	OFF	ON	YES	N/A	1-BY-B-01, -02	
6002	2	17	EDG-1J*	AP/EMERGENCY DIESEL GENERATOR 1J	11715-FE-001A1/21/B1	SB	272'	16/D	S	R --	OFF	ON	YES	N/A	1-BY-B-03, -04	
5003	1	18	1-CC-FT-100A	CC/CCW HX OUTLET FLOW	11715-FM-079A1/17/E4	AUX	259'	8.5/F	S	R --	ON	ON	YES	11715-CC-063/3	N/A	
5007	1	18	1-CC-FT-100B	CC/CCW HX OUTLET FLOW	11715-FM-079A1/17/D4	AUX	259'	8.5/F	S	R --	ON	ON	YES	11715-CC-063/3	N/A	
5088	1	18	1-CC-FT-132A	CC/CC HX FLOW TO RHR HX	11715-FM-079B1/21/F6	CONTMT	216'	7	S	R --	ON	ON	YES	11715-CC-110/5	N/A	
5096	1	18	1-CC-FT-132B	CC/CC HX FLOW TO RHR HX	11715-FM-079B1/21/F5	CONTMT	216'	4.5	S	R --	ON	ON	YES	11715-CC-111/6; 11715-FK-1B	N/A	
5049	1, 2	18	1-CC-LT-101	CC/CC SURGE TANK LEVEL	11715-FM-079A1/17/D7	AUX	298'	9/F	S	R --	ON	ON	YES	11715-CC-057/8	N/A	
5011	1	18	1-CC-PT-100	CC/CCW HX OUTLET PRESSURE	11715-FM-079A1/17/D3	AUX	245'	8.5/G	S	R --	ON	ON	YES	11715-CC-059/6	N/A	
1177	1	18	1-CH-FT-1110	CH/BAST TO VCT FLOW	11715-FM-095B1/21/B4	AUX	274'	8.5/JK	S	R --	ON	ON	YES	11715-CH-015/4	N/A	

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 SEISMIC REVIEW SSEL  
 (Sorted by Equipment Class and Mark Number)

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 Filter Criteria: (Eval. Type CONTAINS 'S')  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN	CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Fir. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D & SUPPORTING INTERCONNECTIONS	REG. COMPONENTS	ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(17)
1168	2	18	1-CH-FT-1113	CH/BAST TO VCT FLOW	11715-FM-095B1/21/B4	AUX	274'	8.5/J	S	R --	ON	ON	YES	N/A	N/A		
1077	1	18	1-CH-FT-1122	CH/CHARGING FLOW TO REGEN HX	11715-FM-095C1/14/C4	AUX	245'	12/H	S	R --	ON	ON	YES	11715-CH-001/7	N/A		
1099	1, 2	18	1-CH-FT-1124	CH/RCP SEAL WATER INJECTION FLOW	11715-FM-095C2/13/C3	AUX	244'	8.5/HJ	S	R 20	ON	ON	YES	11715-CH-058/4	N/A		
1101	1, 2	18	1-CH-FT-1127	CH/RCP SEAL WATER INJECTION FLOW	11715-FM-095C2/13/B3	AUX	244'	8.5/HJ	S	R 20	ON	ON	YES	11715-CH-059/4	N/A		
1103	1, 2	18	1-CH-FT-1130	CH/RCP SEAL WATER INJECTION FLOW	11715-FM-095C2/13/A3	AUX	244'	8.5/HJ	S	R 20	ON	ON	YES	11715-CH-060/5	N/A		
1142	1	18	1-CH-LT-1106	CH/BAST A LEVEL	11715-FM-095A1/22/E2	AUX	289'	8.5/G	S	R --	ON	ON	YES	11715-CH-046/3	N/A		
1144	2	18	1-CH-LT-1108	CH/BAST B LEVEL	11715-FM-095A1/22/E4	AUX	289'	9/G	S	R --	ON	ON	YES	11715-CH-047/4	N/A		
1051	1	18	1-CH-LT-1112	CH/VCT LEVEL	11715-FM-095B1/21/D5	AUX	274'	9.5/J	S	R --	ON	ON	YES	11715-CH-011/9	N/A		
1049	1	18	1-CH-LT-1115	CH/VCT LEVEL	11715-FM-095B1/21/D5	AUX	274'	9.5/J	S	R --	ON	ON	YES	11715-CH-012/6	N/A		
1143	1	18	1-CH-LT-1151	CH/BAST A LEVEL	11715-FM-095A1/22/E4	AUX	274'	9.4/H	S	R --	ON	ON	YES	11715-CH-042/3	N/A		
1145	1	18	1-CH-TIC-1107	CH/BAST A TEMPERATURE	11715-FM-095A1/22/E4	AUX	274'	8.5/H	S	R --	ON	ON	YES	11715-CH-044/3	N/A		
1147	2	18	1-CH-TIC-1109	CH/BAST B TEMPERATURE	11715-FM-095A1/22/E5	AUX	274'	9.1/GH	S	R --	ON	ON	YES	11715-CH-041/6	N/A		
1146	1	18	1-CH-TIC-1162	CH/BAST A TEMPERATURE	11715-FM-095A1/22/E3	AUX	274'	9.1/H	S	R --	ON	ON	YES	11715-CH-045/2	N/A		
4119	1	18	1-CN-LT-100A	CN/CONDENSATE STORAGE TANK LEVEL	11715-FM-074A3/29/D3	AFPH	274'	--	S	R --	N/A	N/A	YES	11715-CN-071/3	N/A		
4120	1	18	1-CN-LT-100B	CN/CONDENSATE STORAGE TANK LEVEL	11715-FM-074A3/29/D3	AFPH	274'	--	S	R --	N/A	N/A	YES	11715-CN-001/10	N/A		
5497	1	18	1-EG-LS-103-HA	EG/FUEL OIL DAY TANK LEVEL	11715-FB-035A2/21/C4	SB	270'	DG	S	R --	OFF	ON	YES	N/A	N/A		
5498	2	18	1-EG-LS-103-HB	EG/FUEL OIL DAY TANK LEVEL	11715-FB-035A2/21/C4	SB	270'	DG	S	R --	OFF	ON	YES	N/A	N/A		
5501	1	18	1-EG-LS-103-JA	EG/FUEL OIL DAY TANK LEVEL	11715-FB-035A2-21/B4	SB	270'	DG	S	R --	OFF	ON	YES	N/A	N/A		
5502	2	18	1-EG-LS-103-JB	EG/FUEL OIL DAY TANK LEVEL	11715-FB-035A2/21/B4	SB	270'	DG	S	R --	OFF	ON	YES	N/A	N/A		
5495	1	18	1-EG-LS-1HA	EG/FUEL OIL DAY TANK LEVEL	11715-FB-035A2/21/D3	SB	270'	DG	S	R --	OFF	ON	YES	N/A	N/A		
5496	2	18	1-EG-LS-1HB	EG/FUEL OIL DAY TANK LEVEL	11715-FB-035A2/21/D3	SB	270'	DG	S	R --	OFF	ON	YES	N/A	N/A		
5499	1	18	1-EG-LS-1JA	EG/FUEL OIL DAY TANK LEVEL	11715-FB-035A2/21/B5	SB	270'	DG	S	R --	OFF	ON	YES	N/A	N/A		
5500	2	18	1-EG-LS-1JB	EG/FUEL OIL DAY TANK LEVEL	11715-FB-035A2/21/B5	SB	270'	DG	S	R --	OFF	ON	YES	N/A	N/A		
4174	1	18	1-FW-FT-100A	FW/AFWP TO SG A FLOW	11715-FM-074A1/32/D6	AFPH	273'	--	S	R --	ON	ON	YES	11715-FW-050/6	N/A		
4159	2	18	1-FW-FT-100B	FW/AFWP TO SG B FLOW	11715-FM-074A1/32/C6	AFPH	273'	--	S	R --	ON	ON	YES	11715-FW-051/6	N/A		
4163	2	18	1-FW-FT-100C	FW/AFWP TO SG C FLOW	11715-FM-074A1/32/B7	AFPH	273'	--	S	R --	ON	ON	YES	11715-FW-052/7	N/A		

NORTH ANHIA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
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LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Fir. Elev.	LOCATION Rm. or Row/Col.	SORT NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
4182	1	18	1-FW-LT-1474	FW/SG A LEVEL	11715-FM-074A1/32/F7	CONTMT	263'	2	S R	--	ON	ON	YES	11715-FW-094/9; N/A 11715-FK-001B		
4184	1	18	1-FW-LT-1475	FW/SG A LEVEL	11715-FM-074A1/32/F6	CONTMT	263'	18.5	S R	--	ON	ON	YES	11715-FW-100/9; N/A 11715-FK-001A		
4186	1	18	1-FW-LT-1476	FW/SG A LEVEL	11715-FM-074A1/32/F6	CONTMT	263'	1	S R	--	ON	ON	YES	11715-FW-106/8; N/A 11715-FK-001B		
4178	1	18	1-FW-LT-1477	FW/SG A LEVEL	11715-FM-074A1/32/F8	CONTMT	241'	1.5	S R	--	ON	ON	YES	11715-FW-091/7; RACK 1-112 11715-FK-001B		
4194	2	18	1-FW-LT-1484	FW/SG B LEVEL	11715-FM-074A1/32/D7	CONTMT	263'	14	S R	--	ON	ON	YES	11715-FW-096/9; N/A 11715-FK-001A		
4196	2	18	1-FW-LT-1485	FW/SG B LEVEL	11715-FM-074A1/32/D6	CONTMT	263'	13.2	S R	--	ON	ON	YES	11715-FW-102/9; N/A 11715-FK-001A		
4198	2	18	1-FW-LT-1486	FW/SG B LEVEL	11715-FM-074A1/32/D6	CONTMT	263'	14	S R	--	ON	ON	YES	11715-FW-108/9; N/A 11715-FK-001A		
4190	2	18	1-FW-LT-1487	FW/SG B LEVEL	11715-FM-074A1/32/D8	CONTMT	241'	10	S R	--	ON	ON	YES	11715-FW-092/7 RACK 1-107 VIMS 26328 11715-FK-001A		
4204	3	18	1-FW-LT-1494	FW/SG C LEVEL	11715-FM-074A1/32/C7	CONTMT	259'	8	S R	--	ON	ON	YES	11715-FW-098/9; N/A 11715-FK-001A		
4206	3	18	1-FW-LT-1495	FW/SG C LEVEL	11715-FM-074A1/32/C7	CONTMT	260'	8.3	S R	--	ON	ON	YES	11715-FW-104/9; N/A 11715-FK-001A		
4208	3	18	1-FW-LT-1496	FW/SG C LEVEL	11715-FM-074A1/32/C6	CONTMT	260'	8.6	S R	--	ON	ON	YES	11715-FW-110/8; N/A 11715-FK-001A		
4200	3	18	1-FW-LT-1497	FW/SG C LEVEL	11715-FM-074A1/32/C8	CONTMT	241' A	8	S R	--	ON	ON	YES	11715-FW-093/8; N/A 11715-FK-001A		
4144	2	18	1-FW-PC-159A	FW/PRESSURE CONTROL	11715-FM-074A3/29/F8	AFPH	273'	--	S R	--	ON	ON	YES	N/A	N/A	
4149	2	18	1-FW-PC-159B	FW/PRESSURE CONTROL	11715-FM-074A3/29/E8	AFPH	273'	--	S R	--	ON	ON	YES	N/A	N/A	
4134	1	18	1-FW-PI-156A	FW/MDAFWP SUCTION (LOCAL)	11715-FM-074A3/29/B7	AFPH	274'	--	S	--	N/A	N/A	NO	N/A	N/A	
4128	2	18	1-FW-PI-156B	FW/MDAFWP SUCTION (LOCAL)	11715-FM-074A3/29/B6	AFPH	273'	--	S	--	N/A	N/A	NO	N/A	1-FW-P-3A	
4122	2	18	1-FW-PI-156C	FW/MDAFWP SUCTION (LOCAL)	11715-FM-074A3/29/B5	AFPH	273'	--	S	--	N/A	N/A	NO	N/A	1-FW-P-3B	
4148	2	18	1-FW-PT-101A	FW/AFWP TO SG B PRESSURE	11715-FM-074A3/29/F8	AFPH	273'	--	S R	--	ON	ON	YES	N/A	N/A	
4153	2	18	1-FW-PT-101B	FW/AFWP TO SG C PRESSURE	11715-FM-074A3/29/E8	AFPH	273'	--	S R	--	ON	ON	YES	N/A	N/A	
4156	1	18	1-FW-PT-101C	FW/AFWP TO SG A PRESSURE	11715-FM-074A3/29/E8	AFPH	273'	--	S R	--	ON	ON	YES	N/A	N/A	

NORTH ANNA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
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LINE NO.	EQUIP TRAIN	CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D & SUPPORTING COMPONENTS	INTERCONNECTIONS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	
4135	1	18	1-FW-PT-103A	FW/TDAFWP SUCTION PRESSURE	11715-FM-074A3/29/C7	AFPH	273'	--	S R	--	ON	ON	YES	11715-FW-003/3	N/A		
4129	2	18	1-FW-PT-103B	FW/MDAFWP SUCTION PRESSURE	11715-FM-074A3/29/C6	AFPH	272'	--	S R	--	ON	ON	YES	11715-FW-001/4	N/A		
4123	2	18	1-FW-PT-103C	FW/MDAFWP SUCTION PRESSURE	11715-FM-074A3/29/C5	AFPH	272'	--	S R	--	ON	ON	YES	11715-FW-002/5	N/A		
2040	1	18	1-GN-PT-134A	GN/N2 RESERVE PRESSURE	11715-FM-105A1/20/D8	CONTMT	291'	9.5	S R	--	ON	ON	YES	11715-GN-007	N/A		
2042	2	18	1-GN-PT-134B	GN/N2 RESERVE PRESSURE	11715-FM-105A1/20/D3	CONTMT	291'	9.5	S R	--	ON	ON	YES	11715-GN-008	N/A		
5449G	1	18	1-HV-FS-1213A	HV/CHILLER FLOW SWITCH	11715-FB-040A1/13	SB	254'	CHILLER RM 4/C	S R	--	ON	ON	YES	N/A	N/A		
5449M	2	18	1-HV-FS-1213B	HV/CHILLER FLOW SWITCH	11715-FB-040A1/13	SB	254'	CHILLER RM 5/D	S R	--	ON	ON	YES	N/A	N/A		
5449Z6	2	18	1-HV-FS-1213C	HV/CHILLER FLOW SWITCH	11715-FB-040A1/13/D6	SB	254'	CHILLER RM 4/C	S R	--	ON	ON	YES	N/A	N/A		
5425N	1	18	1-HV-FS-1215A	HV/CND WTR PUMP SEAL FLOW SWITCH	11715-FB-040D1/15	SB	254'	CHILLER RM	S R	--	ON	ON	YES	N/A	N/A		
5425P	1	18	1-HV-FS-1215B	HV/CND WTR PUMP SEAL FLOW SWITCH	11715-FB-040D1/15	SB	254'	CHILLER RM	S R	--	ON	ON	YES	N/A	N/A		
5425Q	2	18	1-HV-FS-1215C	HV/CND WTR PUMP SEAL FLOW SWITCH	11715-FB-040D1/15	SB	254'	CHILLER RM	S R	--	ON	ON	YES	N/A	N/A		
5444	1	18	1-HV-PC-1235A	HV/CR & RR WATER SYSTEM FLOW CONTROL	11715-FB-040D1/15/E5	SB	254'	CHILLER RM	S	--	VENT	VENT	NO	N/A	N/A		
5445	1	18	1-HV-PC-1235B	HV/CR & RR WATER SYSTEM FLOW CONTROL	11715-FB-040D1/15/B5	SB	254'	CHILLER RM	S	--	VENT	VENT	NO	N/A	N/A		
5446	2	18	1-HV-PC-1235C	HV/CR & RR WATER SYSTEM FLOW CONTROL	11715-FB-040D1/15/C5	SB	254'	CHILLER RM	S	--	VENT	VENT	NO	N/A	N/A		
5425M	1	18	1-HV-PDS-1228A	HV/CND WTR STRAINER DIFF PRESS	11715-FB-040D1/15	SB	254'	CHILLER RM	S R	--	ON	ON	YES	N/A	N/A		
5425L	1	18	1-HV-PDS-1228B	HV/CND WTR STRAINER DIFF PRESS	11715-FB-040D1/15	SB	254'	CHILLER RM	S R	--	ON	ON	YES	N/A	N/A		
4007	1	18	1-MS-PT-101A	MS/SG A STEAM PRESSURE	11715-FM-070B1/19/C6	QSPH	280'	4.5/GB	S R	--	ON	ON	YES	11715-MS-012/7	N/A		
4033	2	18	1-MS-PT-101B	MS/SG B STEAM PRESSURE	11715-FM-070B2/19/C5	QSPH	256'	4.5/GB	S R	--	ON	ON	YES	11715-MS-013/9	RACK 1-800		
4059	3	18	1-MS-PT-101C	MS/SG C STEAM PRESSURE	11715-FM-070B3/23/B6	QSPH	256'	3/GB	S R	--	ON	ON	YES	11715-MS-014/8	RACK 1-801		
4003	1	18	1-MS-PT-147A	MS/SG A STEAM PRESSURE	11715-FM-070B1/19/D7	QSPH	256'	3/GA	S R	9	ON	ON	YES	11715-MS-144/6	RACK 1-800		
4005	2	18	1-MS-PT-147B	MS/SG A STEAM PRESSURE	11715-FM-070B1/19/C6	QSPH	256'	4/GB	S R	9	ON	ON	YES	11715-MS-156/5	RACK 1-802		
4029	1	18	1-MS-PT-148S	MS/SG B STEAM PRESSURE	11715-FM-070B2/19/C7	QSPH	256'	3/GA	S R	9	ON	ON	YES	11715-MS-146/5	N/A		
4031	2	18	1-MS-PT-148B	MS/SG B STEAM PRESSURE	11715-FM-070B2/19/C6	QSPH	256'	4/GB	S R	9	ON	ON	YES	11715-MS-158/4	N/A		
4055	2	18	1-MS-PT-149A	MS/SG C STEAM PRESSURE	11715-FM-070B3/23/B7	QSPH	256'	3/GA	S R	9	ON	ON	YES	11715-MS-148/6	RACK 1-800		
4057	1	18	1-MS-PT-149B	MS/SG C STEAM PRESSURE	11715-FM-070B3/23/C6	QSPH	256'	4/GB	S R	9	ON	ON	YES	11715-MS-160/5	RACK 1-802		

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 SEISMIC REVIEW SSEL  
 (Sorted by Equipment Class and Mark Number)

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 Sort Criteria: Class, ID Number  
 Filter Criteria: (Eval Type CONTAINS 'S')  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT NOTES		OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10) (11)	(12)	(13)	(14)	(15)	(16)	(17)
4015	1 18	1-MS-PY-101A	MS/SG A STEAM DUMP VALVE E/P TRANSDUCER	11715-MS-012/7	QSPH	272'	4/GB	S R	--	ON	ON	YES	N/A	N/A	
4041	2 18	1-MS-PY-101B	MS/SG B STEAM DUMP VALVE E/P TRANSDUCER	11715-MS-013/9	QSPH	272'	4/GB	S R	--	ON	ON	YES	N/A	N/A	
4067	3 18	1-MS-PY-101C	MS/SG C STEAM DUMP VALVE E/P TRANSDUCER	11715-MS-014/8	QSPH	272'	4/GA	S R	--	ON	ON	YES	N/A	N/A	
7008	1, 2 18	1-QS-LI-101	QS/CHEMICAL ADD TANK LEVEL INDICATOR	11715-FM-091A1/20/D6 SB		277'	CR	S R	I	ON	ON	YES	11715-QS-006/3	1-EI-CB-05	
3047	1, 2 18	1-QS-LT-100A	QS/RWST LEVEL	11715-FM-091A1/20/DB YARD		271'	NOTE 1A	S R	--	ON	ON	YES	11715-QS-003/9	N/A	
3048	1, 2 18	1-QS-LT-100B	QS/RWST LEVEL	11715-FM-091A1/20/D6 YARD		271'	NOTE 1B	S R	--	ON	ON	YES	11715-QS-004/10	N/A	
3049	1, 2 18	1-QS-LT-100C	QS/RWST LEVEL	11715-FM-091A1/20/DB YARD		271'	NOTE 1A	S R	--	ON	ON	YES	11715-QS-016/8	N/A	
3050	1, 2 18	1-QS-LT-100D	QS/RWST LEVEL	11715-FM-091A1/20/D6 YARD		271'	NOTE 1B	S R	--	ON	ON	YES	11715-QS-017/9	N/A	
7007	1, 2 18	1-QS-LT-101	QS/CHEMICAL ADD TANK LEVEL XMTR	11715-FM-091A1/20/E6 YARD/TUNL		280'	1.5/L	S R	I	ON	ON	YES	11715-QS-006/3	1-EI-CB-230	
3030	1, 2 18	1-RC-LIS-1310	RC/HOT LEG ISOLATOR	13075-FM-093C1/06/F5 AUX		259' 6"	Cable Vault	S R	--	ON	ON	YES	N/A	N/A	
3029	1, 2 18	1-RC-LIS-1311	RC/RV HEAD ISOLATOR	13075-FM-093C1/06/E5 AUX		259' 6"	Cable Vault	S R	--	ON	ON	YES	N/A	N/A	
3025	1, 2 18	1-RC-LIS-1312	RC/SEAL TABLE ISOLATOR	13075-FM-093C1/06/B5 AUX		259' 6"	Cable Vault	S R	--	ON	ON	YES	N/A	N/A	
3038	1, 2 18	1-RC-LIS-1320	RC/HOT LEG ISOLATOR	13075-FM-093C2/06/D5 AUX		259' 6"	Cable Vault	S R	--	ON	ON	YES	N/A	N/A	
3039	1, 2 18	1-RC-LIS-1321	RC/RV HEAD ISOLATOR	13075-FM-093C2/06/E5 AUX		259' 6"	Cable Vault	S R	--	ON	ON	YES	N/A	N/A	
3043	1, 2 18	1-RC-LIS-1322	RC/SEAL TABLE ISOLATOR	13075-FM-093C2/06/A5 AUX		259' 6"	Cable Vault	S R	--	ON	ON	YES	N/A	N/A	
3026	1, 2 18	1-RC-LT-1310	RC/PLENUM LEVEL	13075-FM-093C1/06/E2 AUX		259' 6"	Cable Vault	S R	--	ON	ON	YES	N/A	N/A	
3028	1, 2 18	1-RC-LT-1311	RC/N-RANGE LEVEL	13075-FM-093C1/06/E4 AUX		259' 6"	Cable Vault	S R	--	ON	ON	YES	N/A	N/A	
3027	1, 2 18	1-RC-LT-1312	RC/W-RANGE LEVEL	13075-FM-093C1/06/E3 AUX		259' 6"	Cable Vault	S R	--	ON	ON	YES	N/A	N/A	
3042	1, 2 18	1-RC-LT-1320	RC/PLENUM LEVEL	13075-FM-093C2/06/F8 AUX		259' 6"	Cable Vault	S R	--	ON	ON	YES	N/A	N/A	
3040	1, 2 18	1-RC-LT-1321	RC/N-RANGE LEVEL	13075-FM-093C2/06/F7 AUX		259' 6"	Cable Vault	S R	--	ON	ON	YES	N/A	N/A	
3041	1, 2 18	1-RC-LT-1322	RC/W-RANGE LEVEL	13075-FM-093C2/06/F8 AUX		259' 6"	Cable Vault	S R	--	ON	ON	YES	N/A	N/A	
3005	1, 2 18	1-RC-LT-1459	RC/PZR LEVEL	11715-FM-093B1/22/C6 CONTMT		263'	9	S R	--	ON	ON	YES	11715-RC-061/13 ;11715-FK-001C	RACK 1-115	
3006	1, 2 18	1-RC-LT-1460	RC/PZR LEVEL	11715-FM-093B1/22/C6 CONTMT		263'	10	S R	--	ON	ON	YES	11715-RC-062/9; 11715-FK-001C	RACK 1-118	

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 SEISMIC REVIEW SSEL  
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 Sort Criteria: Class, ID Number  
 Filter Criteria: (Eval. Type CONTAINS 'S')  
 Program File Name & Version: SSEH 2.2

LINE NO.	EQUIP TRAIN	CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Fir. Elv.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D & SUPPORTING COMPONENTS	INTERCONNECTIONS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	
3007	1, 2	18	1-RC-LT-1461	RC/PZR LEVEL	11715-FM-093B1/22/C4	CONTMT	263'	9.5	S R	--	ON	ON	YES	11715-RC-063/10 ;11715-FK-001C	RACK 1-117		
3008	2	18	1-RC-LT-1462	RC/PZR LEVEL	11715-FM-093B1/22/C4	CONTMT	263'	9.5	S R	--	ON	ON	YES	11715-RC-064/4; 11715-FK-001C	RACK 1-116		
2032	1, 2	18	1-RC-LT-1470	RC/PRT LEVEL	11715-FM-093B2/23/C4	CONTMT	244' 9"	10	S R	16	ON	ON	YES	11715-RC-035/5 VIMS 28722 11715-FK-001A	N/A		
2017	2	18	1-RC-PI-1444	RC/PZR PRESSURE	11715-RC-110/5	SB	277'	CR	S R	--	ON	ON	YES	N/A	N/A		
2001	1	18	1-RC-PT-1402	RC/REACTOR COOLANT WR PRESSURE	11715-FM-093A3/22/D8	CONTMT	241' C	9	S R	--	ON	ON	YES	11715-RC-131/16 ;11715-FK-001A	RACK 1-103		
2002	1	18	1-RC-PT-1402-1	RC/REACTOR COOLANT WR PRESSURE	11715-FM-093A3/22/D8	CONTMT	241'	9	S R	--	ON	ON	YES	11715-RC-133/5	N/A		
2016	2	18	1-RC-PT-1444	RC/PZR PRESSURE	11715-FM-093B1/22/C4	CONTMT	263'	9.5	S R	--	ON	ON	YES	11715-RC-110/5; 11715-FK-001C	RACK 1-116		
2018	2	18	1-RC-PT-1445	RC/PZR PRESSURE	11715-FM-093B1/22/C6	CONTMT	263'	10	S R	--	ON	ON	YES	11715-RC-108/5; 11715-FK-001C	RACK 1-117		
2010	2	18	1-RC-PT-1455	RC/PZR PRESSURE	11715-FM-093B1/22/C6	CONTMT	263'	9.2	S R	--	ON	ON	YES	11715-RC-069/10 ;11715-FK-001C	N/A		
2012	2	18	1-RC-PT-1456	RC/PZR PRESSURE	11715-FM-093B1/22/C6	CONTMT	263'	9.5	S R	--	ON	ON	YES	11715-RC-071/9; 11715-FK-001C	RACK 1-118		
2014	2	18	1-RC-PT-1457	RC/PZR PRESSURE	11715-FM-093B1/22/C4	CONTMT	263'	10	S R	--	ON	ON	YES	11715-RC-073/9; 11715-FK-001C	RACK 1-117		
2030	1, 2	18	1-RC-PT-1472	RC/PRT PRESSURE	11715-FM-093B2/23/C4	CONTMT	241'	8	S R	16	ON	ON	YES	11715-RC-041/3; 11715-FK-001A	RACK 1-103		
4258	1, 2	18	1-RH-E/P-HCV-1758	RH/RHR HX OUTLET E/P	11715-RH-005/4	CONTMT	218'	5.5	S R	--	ON	ON	YES	11715-FK-001A	RACK 1-100		
4260	1, 2	18	1-RH-FT-1605	RH/RHR HX OUTLET FLOW	11715-FM-094A2/15/C4	CONTMT	217'	5.5	S R	--	ON	ON	YES	11715-RH-004/6 11715-FK-01A/14	RACK 1-10X		
4252	1, 2	18	1-RH-PI-1602	RH/RHR PUMPS DISCHARGE PRESSURE	11715-FM-094A1/14/F7	CONTMT	234'	5	S R	--	ON	ON	YES	11715-RH-001/2 VIMS 27369 11715-FP-013A 11715-FM-9	N/A		
4243	1, 2	18	1-RH-PT-1403	RH/RHR PUMP INLET PRESSURE	11715-FM-094A1/14/B5	CONTMT	216' 11"	4.2	S R	--	ON	ON	YES	VIMS26381,25950 11715-FK-001B	N/A		
7036B	2	18	1-RS-LI-103A	RS/CASING COOLING TANK LEVEL INDICATOR	11715-FM-091B1/05/3D	SB	277'	7/C	S R	I	N/A	N/A	YES	11715-RS-029/6	1-RS-LT-103A		
7036F	2	18	1-RS-LI-103B	RS/CASING COOLING TANK LEVEL INDICATOR	11715-FM-091B1/05/3C	SB	277'	7/C	S R	I	N/A	N/A	YES	11715-RS-030/6	1-RS-LT-103B		



NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 SEISMIC REVIEW SSEL  
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 Sort Criteria: Class, ID Number  
 Filter Criteria: (Eval. Type CONTAINS 'S')  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAM CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING Dwg. NO./REV.	SYS. & SUPPORTING	REQ'D INTERCONNECTIONS	REG. ISSUE
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	
7036D	2	18	1-RS-LS-103A	RS/CASING COOLING TANK LEVEL SWITCH	11715-FM-091B1/05/3D	SB	252'	6.5/D	S R I, 36	N/A	N/A	NO	N/A		1-EI-CB-23B	
7036E	2	18	1-RS-LS-103B	RS/CASING COOLING TANK LEVEL SWITCH	11715-FM-091B1/05/3C	SB	252'	6.5/D	S R I, 36	N/A	N/A	NO	N/A		1-EI-CB-23D	
7036A	2	18	1-RS-LT-103A	RS/CASING COOLING TANK LEVEL XMTR	11715-FM-091B1/05/4D	YARD	270'	NOTE 1X	S R I	N/A	N/A	YES	11715-RS-029/6		1-EP-CB-04B	
7036E	2	18	1-RS-LT-103B	RS/CASING COOLING TANK LEVEL XMTR	11715-FM-091B1/05/4C	YARD	270'	NOTE 1X	S R I	N/A	N/A	YES	11715-RS-030/6		1-EP-CB-04D	
5239	1	18	1-SW-FS-102A	SW/CCP SEAL & GEAR BOX COOLER FLOW	11715-FM-078G1/12/D2	AUX	244'	8/K	S R --	ON	ON	YES	11715-SW-080/2		N/A	
5243	1	18	1-SW-FS-102B	SW/CCP SEAL & GEAR BOX COOLER FLOW	11715-FM-078G1/12/D7	AUX	244'	8.5/K	S R --	ON	ON	YES	11715-SW-081/2		N/A	
5247	1	18	1-SW-FS-102C	SW/CCP SEAL & GEAR BOX COOLER FLOW	11715-FM-078G1/12/D7	AUX	244'	9/K	S R --	ON	ON	YES	11715-SW-082/2		N/A	
5340	1	18	1-SW-FT-103	SW/SW RETURN HEADER FLOW	11715-SW-096/1	SWVH	325'	NOTE 1I	S R --	ON	ON	YES	11715-SW-011/8		N/A	
5346	1	18	1-SW-FT-104	SW/SW RETURN HEADER FLOW	11715-FM-078H/04/D7	SWVH	325'	IRR #1	S R --	ON	ON	YES	11715-SW-010/8		N/A	
5260	1	18	1-SW-FT-109A	SW/CCP SEAL & GEAR BOX COOLER FLOW	11715-FM-078G1/12/B2	AUX	244'	8/H	S --	N/A	N/A	NO	11715-SW-086/1		N/A	
5261	1	18	1-SW-FT-109B	SW/CCP SEAL & GEAR BOX COOLER FLOW	11715-FM-078G1/12/A2	AUX	244'	8.5/F	S --	N/A	N/A	NO	11715-SW-087/1		N/A	
5336	1	18	1-SW-FT-110	SW/SW HEADER TO VALVE HOUSE FLOW	11715-FM-078H/04/D5	SWVH	325'	NOTE 1H	S R --	ON	ON	YES	11715-SW-096/1	F-SW103;JB-5102;JB-1534		
5342	1	18	1-SW-FT-111	SW/SW HEADER TO VALVE HOUSE FLOW	11715-FM-078H/04/E8	SWVH	325'	NOTE 1H	S R --	ON	ON	YES	11715-SW-097/1	F-SW104;JB-5102;JB-1534		
5163	1	18	1-SW-PT-101A	SW/SW PUMP DISCHARGE PRESSURE	11715-FM-078A3/28/D6	SWPH	328'	--	S R --	ON	ON	YES	11715-SW-027/6		N/A	
5165	2	18	1-SW-PT-101B	SW/SW PUMP DISCHARGE PRESSURE	11715-FM-078A3/28/D5	SWPH	328'	--	S R --	OFF	ON	YES	11715-SW-028/6		N/A	
5288	1	18	1-SW-TIC-102A	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G1/12/D4	AUX	244'	8/K	S R --	ON	ON	YES	11715-SW-070/1		N/A	
5289	1	18	1-SW-TIC-102B	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G1/12/D6	AUX	244'	8.5/K	S R --	ON	ON	YES	11715-SW-071/1		N/A	
5290	1	18	1-SW-TIC-102C	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G1/12/D8	AUX	244'	9/K	S R --	ON	ON	YES	11715-SW-072/1		N/A	
5300	1	18	1-SW-TSH-103A	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G1/12/D4	SB	252'	6.5/D	S R 36	ON	ON	YES	N/A		1-EI-CB-44	
5301	1	18	1-SW-TSH-103B	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G1/12/D6	SB	252'	6.5/D	S R 36	ON	ON	YES	N/A		1-EI-CB-44	
5302	1	18	1-SW-TSH-103C	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G1/12/D8	SB	252'	6.5/D	S R 36	ON	ON	YES	N/A		1-EI-CB-44	
5297	1	18	1-SW-TT-103A	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G1/12/D4	AUX	246'	8.2/J	S R 36	ON	ON	YES	11715-SW-007/6		1-CH-P-1A	
5298	1	18	1-SW-TT-103B	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G1/12/D6	AUX	246'	8.5/J	S R 36	ON	ON	YES	11715-SW-008/6		1-CH-P-1B	
5299	1	18	1-SW-TT-103C	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G1/12/D8	AUX	246'	9/J	S R 36	ON	ON	YES	11715-SW-009/6		1-CH-P-1C	
5505	1	18	2-EG-LS-203-HA	EG/FUEL OIL DAY TANK LEVEL	11715-FB-035A2/21/B4	SB	270'	DG	S R --	OFF	ON	YES	N/A		N/A	
5506	2	18	2-EG-LS-203-HB	EG/FUEL OIL DAY TANK LEVEL	11715-FB-035A2/21/B4	SB	270'	DG	S R --	OFF	ON	YES	N/A		N/A	

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 SEISMIC REVIEW SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NAI\_SSEL.DBF / 05/21/97 / 09:02:36  
 Sort Criteria: Class, ID Number  
 Filter Criteria: (Eval. Type CONTAINS 'S')  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	OP. ST.	POWER SUPPORTING SYS	REQ'D INTERCONNECTIONS	REG. ISSUE					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
5509	1	18	2-EG-LS-203-JA	EG/FUEL OIL DAY TANK LEVEL	11715-FB-035A2/21/D4 SB	270'	DG	S R --	OFF	ON	YES	N/A	N/A			
5510	2	18	2-EG-LS-203-JB	EG/FUEL OIL DAY TANK LEVEL	11715-FB-035A2/21/D4 SB	270'	DG	S R --	OFF	ON	YES	N/A	N/A			
5503	1	18	2-EG-LS-2HA	EG/FUEL OIL DAY TANK LEVEL	11715-FB-035A2/21/C3 SB	270'	DG	S R --	OFF	ON	YES	N/A	N/A			
5504	2	18	2-EG-LS-2HB	EG/FUEL OIL DAY TANK LEVEL	11715-FB-035A2/21/C3 SB	270'	DG	S R --	OFF	ON	YES	N/A	N/A			
5507	1	18	2-EG-LS-2JA	EG/FUEL OIL DAY TANK LEVEL	11715-FB-035A2/21/D5 SB	270'	DG	S R --	OFF	ON	YES	N/A	N/A			
5508	2	18	2-EG-LS-2JB	EG/FUEL OIL DAY TANK LEVEL	11715-FB-035A2/21/D5 SB	270'	DG	S R --	OFF	ON	YES	N/A	N/A			
5251	1	18	2-SW-FS-202A	SW/CCP SEAL & GEAR BOX COOLER FLOW	11715-FM-078G2/10/D7 AUX	244'	9/K	S R --	ON	ON	YES	12050-SW-046/2	N/A			
5255	1	18	2-SW-FS-202B	SW/CCP SEAL & GEAR BOX COOLER FLOW	11715-FM-078G2/10/D7 AUX	244'	9/K	S R --	ON	ON	YES	12050-SW-047/2	N/A			
5259	1	18	2-SW-FS-202C	SW/CCP SEAL & GEAR BOX COOLER FLOW	11715-FM-078G2/10/D7 AUX	244'	9/K	S R --	ON	ON	YES	12050-SW-048/2	N/A			
5167	1	18	2-SW-PT-201A	SW/SW PUMP DISCHARGE PRESSURE	11715-FM-078A3/28/D4 SWPH	328'	--	S R --	ON	ON	YES	12050-SW-012/3	N/A			
5169	2	18	2-SW-PT-201B	SW/SW PUMP DISCHARGE PRESSURE	11715-FM-078A3/28/D3 SWPH	328'	--	S R --	OFF	ON	YES	12050-SW-013/3	N/A			
5312	1	18	2-SW-TIC-202A	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G2/10/D4 AUX	244'	9.2/K	S R --	ON	ON	YES	12050-SW-034/2	N/A			
5313	1	18	2-SW-TIC-202B	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G2/10/D6 AUX	244'	9.5/K	S R --	ON	ON	YES	12050-SW-035/2	N/A			
5314	1	18	2-SW-TIC-202C	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G2/10/D8 AUX	244'	10/K	S R --	ON	ON	YES	12050-SW-036/2	N/A			
5324	1	18	2-SW-TSH-203A	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G2/10/D4 SB	252'	11/D	S R 36	ON	ON	YES	N/A	2-EI-CB-23F			
5325	1	18	2-SW-TSH-203B	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G2/10/D6 SB	252'	11/D	S R 36	ON	ON	YES	N/A	2-EI-CB-23F			
5326	1	18	2-SW-TSH-203C	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G2/10/D8 SB	252'	6/D	S R 36	ON	ON	YES	N/A	2-EI-CB-23F			
5321	1	18	2-SW-TT-203A	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G2/10/D4 AUX	244'	9/J	S R --	ON	ON	YES	12050-SW-022/5	N/A			
5322	1	18	2-SW-TT-203B	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G2/10/D6 AUX	244'	9.5/J	S R --	ON	ON	YES	12050-SW-023/5	N/A			
5323	1	18	2-SW-TT-203C	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G2/10/D8 AUX	244'	10/J	S R --	ON	ON	YES	12050-SW-024/5	N/A			
5009	1	19	1-CC-TE-100	CC/CCW HX OUTLET TEMP	11715-FM-079A1/17/D3 AUX	244'	8.3/G	S R --	ON	ON	YES	11715-CC-106/3	N/A			
5086	1	19	1-CC-TE-101A	CC/CCW PUMPS SUCTION HEADER TEMP	11715-FM-079A1/17/C7 AUX	244'	8.5/H	S R --	ON	ON	YES	11715-CC-099/3	N/A			
5087A	1	19	1-CC-TE-101B	CC/CCW PUMPS SUCTION HEADER TEMP	11715-FM-079A1/17/C7 AUX	244'	8.5/H	S R --	ON	ON	YES	11715-CC-107/5	N/A			
5094	1	19	1-CC-TE-149A	CC/RHR HX COOLING WATER OUTLET TEMP	11715-FM-079B1/21/A8 AUX	244'	7/KL	S R --	ON	ON	YES	11715-CC-100/3	N/A			
5102	1	19	1-CC-TE-149B	CC/RHR HX COOLING WATER OUTLET TEMP	11715-FM-079B1/21/C7 AUX	244'	7/KL	S R --	ON	ON	YES	11715-CC-101/4	N/A			

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 SEISMIC REVIEW SSEL  
 (Sorted by Equipment Class and Mark Number)

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 Sort Criteria: Class, ID Number  
 Filter Criteria: (Eval. Type CONTAINS 'S')  
 Program File Name & Version: SSEM 2.2

LINE NO.	TRAIN	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr.Elv.	LOCATION Rm. or Row/Col.	SORT NOTES	OP. Normal	ST. Desired	POWER REQD?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10) (11)	(12)	(13)	(14)	(15)	(16)	(17)
5118	1	19	1-CC-TE-150A	CC/RHR PUMP SEAL COOLER OUTLET TEMP	11715-FM-07985/21/C4	CONTMT	231'	6	S R --	ON	ON	YES	11715-CC-023/3	N/A	
5119	1	19	1-CC-TE-150B	CC/RHR PUMP SEAL COOLER OUTLET TEMP	11715-FM-07985/21/B4	CONTMT	231'	6	S R --	ON	ON	YES	11715-CC-024/3	N/A	
1082	1	19	1-CH-TE-1123	CH/REGEN HX OUTLET CHARGING TEMP	11715-FM-095C1/14/E5	CONTMT	241'	11	S R --	N/A	N/A	YES	11715-CH-002/4 VIMS 27172 11715-CH-002	N/A	
5449E	1	19	1-HV-TC-1200A	HV/CHILLED WATER P. DISCH. TEMP.	11715-FB-040A1/13	SB	254'	CHILLER RM	S R --	ON	ON	YES	N/A	N/A	
5449K	2	19	1-HV-TC-1200B	HV/CHILLED WATER P. DISCH. TEMP.	11715-FB-040A1/13	SB	254'	CHILLER RM	S R --	ON	ON	YES	N/A	N/A	
5449Z4	2	19	1-HV-TC-1200C	HV/CHILLED WATER PUMP DISCH TEMP	11715-FB-040A1/13/D6	SB	254'	CHILLER RM	S R --	OFF	ON	YES	N/A	N/A	
3034	1, 2	19	1-RC-TE-1313	RC/RVLIS TEMP	13075-FM-093C1/06/F7	CONTMT	291'	4	S R --	ON	ON	YES	N/A	N/A	
3033	1, 2	19	1-RC-TE-1314	RC/RVLIS TEMP	13075-FM-093C1/06/F6	CONTMT	274'	5	S R --	ON	ON	YES	N/A	N/A	
3031	1, 2	19	1-RC-TE-1315	RC/RVLIS TEMP	13075-FM-093C1/06/E6	CONTMT	259'	9	S R --	ON	ON	YES	N/A	N/A	
3032	1, 2	19	1-RC-TE-1316	RC/RVLIS TEMP	13075-FM-093C1/06/F6	CONTMT	259'	5	S R --	ON	ON	YES	N/A	N/A	
3021	1, 2	19	1-RC-TE-1317	RC/RVLIS IN-CORE THIMBLE	13075-FM-093C1/06/C8	CONTMT	216'	4	S R --	ON	ON	YES	N/A	N/A	
3023	1, 2	19	1-RC-TE-1318	RC/RVLIS THIMBLE TO BELLOWS LINE	13075-FM-093C1/06/B7	CONTMT	244'	4	S R --	ON	ON	YES	N/A	N/A	
3035	1, 2	19	1-RC-TE-1323	RC/RVLIS TEMP	13075-FM-093C2/06/E3	CONTMT	291'	4	S R --	ON	ON	YES	N/A	N/A	
3036	1, 2	19	1-RC-TE-1324	RC/RVLIS TEMP	13075-FM-093C2/06/E4	CONTMT	284'	5	S R --	ON	ON	YES	N/A	N/A	
3037	1, 2	19	1-RC-TE-1325	RC/RVLIS TEMP	13075-FM-093C2/06/D4	CONTMT	259'	3	S R --	ON	ON	YES	N/A	N/A	
3022	1, 2	19	1-RC-TE-1327	RC/RVLIS IN-CORE THIMBLE	13075-FM-093C1/06/C8	CONTMT	244'	4	S R --	ON	ON	YES	N/A	N/A	
3024	1, 2	19	1-RC-TE-1328	RC/RVLIS IN-CORE THIMBLE	13075-FM-093C1/06/B8	CONTMT	244'	4	S R --	ON	ON	YES	N/A	N/A	
4281	1, 2	19	1-RC-TE-1410	RC/LOOP 1 COLD LEG TEMP (T-COLD)	11715-FM-093A1/19/C8	CONTMT	244'	18.7	S R --	ON	ON	YES	11715-RC-121/16	N/A	
4280	1, 2	19	1-RC-TE-1413	RC/LOOP 1 HOT LEG TEMP (T-HOT)	11715-FM-093A1/19/E6	CONTMT	244'	2	S R --	ON	ON	YES	11715-RC-124/17	N/A	
4285	1, 2	19	1-RC-TE-1420	RC/LOOP 2 COLD LEG TEMP (T-COLD)	11715-FM-093A2/19/C8	CONTMT	244'	13	S R --	ON	ON	YES	11715-RC-122/15	N/A	
4284	1, 2	19	1-RC-TE-1423	RC/LOOP 2 HOT LEG TEMP (T-HOT)	11715-FM-093A2/19/E6	CONTMT	244'	14	S R --	ON	ON	YES	11715-RC-125/14	N/A	
4289	1, 2	19	1-RC-TE-1430	RC/LOOP 3 COLD LEG TEMP (T-COLD)	11715-FM-093A3/22/D2	CONTMT	244'	7	S R --	ON	ON	YES	11715-RC-123/14	N/A	
4288	1, 2	19	1-RC-TE-1433	RC/LOOP 3 HOT LEG TEMP (T-HOT)	11715-FM-093A3/22/E5	CONTMT	257'	8	S R --	ON	ON	YES	11715-RC-126/18	N/A	
4280A	1, 2	19	1-RC-TR-1410	RC/LP1, CH1, HOT/COLD LEG TMP	11715-RC-121,124	SB	277'	CR	S R --	ON	ON	YES	11715-FE-9EX	1-EP-MC-20	
4284A	1, 2	19	1-RC-TR-1413	RC/LOOP 2 HOT LEG TEMP	11715-RC-125/14	SB	277'	CR	S R --	ON	ON	YES	11715-FE-9Y	1-EP-MC-20	

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 SEISMIC REVIEW SSEL  
 (Sorted by Equipment Class and Mark Number)

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 Sort Criteria: Class, ID Number  
 Filter Criteria: (Eval. Type CONTAINS 'S')  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elv.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. ST. Normal	Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
4285A	1, 2	19	1-RC-TR-1420	RC/LOOP 2 WIDE RANGE HOT/COLD LEG TEMP	11715-RC-122/15	SB	277'	CR	S R --	ON	ON	YES	11715-FE-9EY	1-EP-MC-20	
4289A	1, 2	19	1-RC-TR-1430	RC/LOOP 3 WIDE RANGE HOT/COLD LEG TEMP	11715-RC-123/14	SB	277'	CR	S R --	ON	ON	YES	11715-FE-9EY	1-EP-MC-20	
4288A	1, 2	19	1-RC-TR-1433	RC/LOOP 3 HOT LEG TEMP	11715-RC-126/18	SB	277'	CR	S R --	ON	ON	YES	11715-FE-9EX	1-EP-MC-20	
4254	1, 2	19	1-RH-TE-1604	RH/RHR HX INLET TEMPERATURE	11715-FM-094A2/15/C8	CONTMT	231'	5	S R --	ON	ON	YES	11715-RH-002/4 VIMS 27370 11715-RH-002	N/A	
4261	1, 2	19	1-RH-TE-1606	RH/RHR HX OUTLET TEMPERATURE	11715-FM-094A2/15/C4	CONTMT	216'	7	S R --	ON	ON	YES	11715-RH-003/4 VIMS30284-30287	N/A	
5294	1	19	1-SW-TE-103A	SW/CCP LUBE OIL COOLER CONTROL	11715-SW-007/6	AUX	246'	8.2/J	S R --	ON	ON	YES	N/A	N/A	
5295	1	19	1-SW-TE-103B	SW/CCP LUBE OIL COOLER CONTROL	11715-SW-008/6	AUX	246'	8.5/J	S R --	ON	ON	YES	N/A	N/A	
5296	1	19	1-SW-TE-103C	SW/CCP LUBE OIL COOLER CONTROL	11715-SW-009/6	AUX	246'	9/J	S R --	ON	ON	YES	N/A	N/A	
5330	1	19	1-SW-TE-106	SW/SW HEADER TO VALVE HOUSE TEMP	11715-FM-078H/04/E6	SWVH	321'	SWVH	S R --	ON	ON	YES	11715-SW-048/5	JB-5104; JB-5072	
5333	1	19	1-SW-TE-107	SW/SW HEADER TO VALVE HOUSE TEMP	11715-FM-078H/04/E7	SWVH	326'	SWVH	S R --	ON	ON	YES	11715-SW-047/5	JB-5102; JB-1534	
5318	1	19	2-SW-TE-203A	SW/CCP LUBE OIL COOLER CONTROL	12050-SW-022/5	AUX	246'	9/J	S R --	ON	ON	YES	N/A	N/A	
5319	1	19	2-SW-TE-203B	SW/CCP LUBE OIL COOLER CONTROL	12050-SW-023/5	AUX	246'	9.5/J	S R --	ON	ON	YES	N/A	N/A	
5320	1	19	2-SW-TE-203C	SW/CCP LUBE OIL COOLER CONTROL	12050-SW-024/5	AUX	246'	10/J	S R --	ON	ON	YES	N/A	N/A	
5004	1	20	1-CC-FI-100A	CC/CCW HX OUTLET FLOW	11715-FM-079A1/17/F4	SB	277'	CR	S R 36	ON	ON	YES	11715-CC-063/3	1-EI-CB-04	
5008	1	20	1-CC-FI-100B	CC/CCW HX OUTLET FLOW	11715-FM-079A1/17/D4	SB	277'	CR	S R 36	ON	ON	YES	11715-CC-063/3	1-EI-CB-04	
5089	1	20	1-CC-FI-132A-1	CC/CC HX FLOW TO RHR HX	11715-FM-079B1/21/F6	SB	277'	CR	S R 36	ON	ON	YES	11715-CC-110/5	1-EI-CB-04	
5097	1	20	1-CC-FI-132B-1	CC/CC HX FLOW TO RHR HX	11715-FM-079B1/21/F5	SB	277'	CR	S R 36	ON	ON	YES	11715-CC-111/6	1-EI-CB-04	
5050	1, 2	20	1-CC-LI-101-1	CC/CC SURGE TANK LEVEL	11715-FM-079A1/17/D7	SB	277'	CR	S R --	ON	ON	YES	11715-CC-057/8	N/A	
5051	1, 2	20	1-CC-LI-101-2	CC/CC SURGE TANK LEVEL	11715-FM-079A1/17/D7	SB	277'	CR	S R --	ON	ON	YES	11715-CC-057/8	N/A	
5052	1, 2	20	1-CC-LI-101-3	CC/CC SURGE TANK LEVEL	11715-FM-079A1/17/D7	SB	297.5'	CR	S R --	ON	ON	YES	11715-CC-057/8	N/A	
5012	1	20	1-CC-PI-100	CC/CCW HX OUTLET PRESSURE	11715-FM-079A1/17/D3	SB	277'	CR	S R 36	ON	ON	YES	11715-CC-059/6	1-EI-CB-04	
5010	1	20	1-CC-TI-100	CC/CCW HX OUTLET TEMP	11715-FM-079A1/17/D3	SB	277'	CR	S R 36	ON	ON	YES	11715-CC-106/3	1-EI-CB-04	
5087	1	20	1-CC-TI-101A	CC/CCW PUMPS SUCTION HEADER TEMP	11715-FM-079A1/17/C7	SB	277'	CR	S R 36	ON	ON	YES	11715-CC-099/3	1-EI-CB-04	
5087B	1	20	1-CC-TI-101B	CC/CCW PUMPS SUCTION HEADER TEMP	11715-FM-079A1/17/C7	SB	277'	CR	S R 36	ON	ON	YES	11715-CC-107/5	1-EI-CB-04	

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 SEISMIC REVIEW SSEL  
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 Sort Criteria: Class, ID Number  
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LINE NO.	EQUIP TRAIN	CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
5095	1	20	1-CC-TI-149A	CC/RHR HX COOLING WATER OUTLET TEMP	11715-FM-079B1/21/AB	SB	277'	CR	S R	36	ON	ON	YES	11715-CC-100/3	1-EI-CB-04	
5103	1	20	1-CC-TI-149B	CC/RHR HX COOLING WATER OUTLET TEMP	11715-FM-079B1/21/C7	SB	277'	CR	S R	36	ON	ON	YES	11715-CC-101/4	1-EI-CB-04	
5087C	1	20	1-CC-TI-201B	CC/CCW PUMPS SUCTION HEADER TEMP	11715-FM-079A1/17/C7	SB	277'	CR	S R	36	ON	ON	YES	11715-CC-107/5	2-EI-CB-04	
1079	1	20	1-CH-FC-1122C	CH/CHARGING FLOW TO REGEN HX	11715-CH-001/7	SB	277'	CR	S R	--	ON	ON	YES	N/A	N/A	
1178	1	20	1-CH-FI-1110	CH/BAST TO VCT FLOW	11715-CH-015/4	SB	277'	CR	S R	--	ON	ON	YES	N/A	N/A	
1078	1	20	1-CH-FI-1122A	CH/CHARGING FLOW TO REGEN HX	11715-CH-001/7	SB	277'	CR	S R	36	ON	ON	YES	N/A	1-EI-CB-03	
1100	1, 2	20	1-CH-FI-1124A	CH/RCP SEAL WATER INJECTION FLOW	11715-CH-058/4	SB	277'	CR	S R	20, 36	ON	ON	YES	N/A	1-EI-CB-03	
1102	1, 2	20	1-CH-FI-1127A	CH/RCP SEAL WATER INJECTION FLOW	11715-CH-059/4	SB	277'	CR	S R	20, 36	ON	ON	YES	N/A	1-EI-CB-03	
1104	1, 2	20	1-CH-FI-1130A	CH/RCP SEAL WATER INJECTION FLOW	11715-CH-060/5	SB	277'	CR	S R	20, 36	ON	ON	YES	N/A	1-EI-CB-03	
1158	1	20	1-CH-LI-1106	CH/BAST A LEVEL	11715-CH-046/3	SB	277'	CR	S R	--	ON	ON	YES	N/A	N/A	
1160	2	20	1-CH-LI-1108	CH/BAST B LEVEL	11715-CH-047/4	SB	277'	CR	S R	--	ON	ON	YES	N/A	N/A	
1052	1	20	1-CH-LI-1112	CH/VCT LEVEL	11715-CH-011/9	SB	277'	CR	S R	36	ON	ON	YES	N/A	1-EI-CB-03	
1050	1	20	1-CH-LI-1115	CH/VCT LEVEL	11715-CH-012/6	SB	277'	CR	S R	36	ON	ON	YES	N/A	1-EI-CB-03	
1159	1	20	1-CH-LI-1161	CH/BAST A LEVEL	11715-CH-042/3	SB	277'	CR	S R	--	ON	ON	YES	N/A	N/A	
1083	1	20	1-CH-TI-1123	CH/REGEN HX OUTLET CHARGING TEMP	11715-CH-002/4	SB	277'	CR	S R	36	N/A	N/A	YES	N/A	1-EI-CB-03	
4121	1	20	1-CN-LI-100B-1	CN/CONDENSATE STORAGE TANK LEVEL	11715-CN-001/10	SB	277'	CR	S R	36	ON	ON	YES	N/A	1-EI-CB-04	
4101A	1	20	1-CN-LI-104	CN/CONDENSATE STORAGE TANK LEVEL	11715-CN-002/4	SB	277'	CR	S R	--	ON	ON	YES	N/A	N/A	
5550I	1	20	1-EE-EG-01C	EG/CRE PANEL 1H	DWG NOT AVAILABLE	SB	272'	EDG	S R	6,41	N/A	N/A	YES	N/A	N/A	
5550K	1	20	1-EE-EG-02C	EG/CRE PANEL 2H	DWG NOT AVAILABLE	SB	272'	EDG	S R	6,41	N/A	N/A	YES	N/A	N/A	
5550J	1	20	1-EE-EG-03C	EG/CRE PANEL 1J	DWG NOT AVAILABLE	SB	272'	EDG	S R	6,41	N/A	N/A	YES	N/A	N/A	
5550L	1	20	1-EE-EG-04C	EG/CRE PANEL 2J	DWG NOT AVAILABLE	SB	272'	EDG	S R	6,41	N/A	N/A	YES	N/A	N/A	
5550E	1	20	1-EE-EG-1A	EG/EDG RM DIESEL GAGEBOARD 1H	11715-1.30-212C	SB	272'	EDG	S R	6,36	N/A	N/A	YES	N/A	EDG-1H	
5550A	1	20	1-EE-EG-1B	EG/EDG RM ENGINE CONTROL RELAY BOX 1H	11715-1.30-212C	SB	272'	EDG	S R	6,36, 41	N/A	N/A	YES	N/A	EDG-1H	
5550G	1	20	1-EE-EG-2A	EG/EDG RM DIESEL GAGEBOARD 2H	11715-1.30-212C	SB	272'	EDG	S R	6,36	N/A	N/A	YES	N/A	EDG-2H	
5550C	1	20	1-EE-EG-2B	EG/EDG RM ENGINE CONTROL RELAY BOX 2H	11715-1.30-212C	SB	272'	EDG	S R	6,36, 41	N/A	N/A	YES	N/A	EDG-2H	

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 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
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LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING DWG. NO./REV.	SYS. & SUPPORTING COMPONENTS	REQ'D INTERCONNECTIONS	REG. ISSUE
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	
5550F	1	20	1-EE-EG-3A	EG/EDG RM DIESEL GAGEBOARD 1J	11715-1 30-212C	SB	272'	EDG	S R 6,36	N/A	N/A	YES	N/A		EDG-1J	
5550B	1	20	1-EE-EG-3B	EG/EDG RM ENGINE CONTROL RELAY BOX 1J	11715-1 30-212C	SB	272'	EDG	S R 6,36, 41	N/A	N/A	YES	N/A		EDG-1J	
5550H	1	20	1-EE-EG-4A	EG/EDG RM DIESEL GAGEBOARD 2J	11715-1 30-212C	SB	272'	EDG	S R 6,36	N/A	N/A	YES	N/A		EDG-2J	
5550D	1	20	1-EE-EG-4B	EG/EDG RM ENGINE CONTROL RELAY BOX 2J	11715-1 30-212C	SB	272'	EDG	S R 6,36, 41	N/A	N/A	YES	N/A		EDG-2J	
610		20	1-EG-P-1H	EDG CONTROL PANEL		SB	270'	EDG	S --							
6.01		20	1-EG-P-1J	EDG CONTROL PANEL		SB	270'	EDG	S --							
5535	1	20	1-EG-PS-602HA	EG/AIR COMPRESSOR AIR RECEIVER PRESSURE	11715-FM-107A1/09/E5	SB	270'	EDG	S R	ON	ON	YES	N/A		1-EG-P-1H	
5536	2	20	1-EG-PS-602HB	EG/AIR COMPRESSOR AIR RECEIVER PRESSURE	11715-FM-107A2/09/E5	SB	270'	EDG	S R	ON	ON	YES	N/A		1-EG-P-1H	
5537	1	20	1-EG-PS-602JA	EG/AIR COMPRESSOR AIR RECEIVER PRESSURE	11715-FM-107A3/10/E5	SB	270'	EDG	S R	ON	ON	YES	N/A		1-EG-P-1J	
5538	2	20	1-EG-PS-602JB	EG/AIR COMPRESSOR AIR RECEIVER PRESSURE	11715-FM-107A4/10/E5	SB	270'	EDG	S R	ON	ON	YES	N/A		1-EG-P-1J	
5519	1	20	1-EG-PS-603H	EG/FUEL OIL DIFF PRESS	11715-1 30-212C	SB	270'	EDG	S R	OFF	ON	YES	N/A		1-EG-P-1H	
5520	2	20	1-EG-PS-603J	EG/FUEL OIL DIFF PRESS	11715-1 30-212C	SB	270'	EDG	S R	OFF	ON	YES	N/A		1-EG-P-1J	
5377	1	20	1-EI-CB-01	EI/BENCH BOARD 1-1	11715-FE-027B/33/4	SB	277'	CR	S R --	N/A	N/A	YES	N/A		N/A	
5378	1	20	1-EI-CB-02	EI/BENCH BOARD 1-2	11715-FE-027B/33/4	SB	277'	CR	S R --	N/A	N/A	YES	N/A		N/A	
5379	1	20	1-EI-CB-03	EI/VERTICAL BOARD 1-1	11715-FE-027B/33/4	SB	277'	CR	S R --	N/A	N/A	YES	N/A		N/A	
5380	1	20	1-EI-CB-04	EI/VERTICAL BOARD 1-2	11715-FE-027B/33/4	SB	277'	CR	S R --	N/A	N/A	YES	N/A		N/A	
5381	1	20	1-EI-CB-05	EI/VERTICAL BOARD 1-3	11715-FE-027B/33/4	SB	277'	CR	S R --	N/A	N/A	YES	N/A		N/A	
5382	1	20	1-EI-CB-06A	EI/AUXILIARY SHUTDOWN PANEL	11715-FE-027A/22/A3	SB	254'	8/CD	S R --	N/A	N/A	YES	N/A		N/A	
5383	1	20	1-EI-CB-06B	EI/AUXILIARY SHUTDOWN PANEL	11715-FE-027A/22/A3	SB	254'	8/CD	S R --	N/A	N/A	YES	N/A		N/A	
5479A	1	20	1-EI-CB-08A	EG/EMERG DG CONTROL PANEL (H-TRAIN)	11715-FE-027B/33/H2	SB	277'	CR	S R 6	N/A	N/A	YES	N/A		N/A	
5479B	1	20	1-EI-CB-08B	EG/EMERG DG CONTROL PANEL (H-TRAIN)	11715-FE-027B/33/H2	SB	277'	CR	S R 6,41	N/A	N/A	YES	N/A		N/A	
5418B	1	20	1-EI-CB-201	EI/DIESEL ISOL PANEL (H-TRAIN)	11715-FE-3KG/3	SB	272'	EDG	S R 6,41	N/A	N/A	YES	N/A		N/A	

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LINE NO.	EQUIP TRAIN	CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr./Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
5183A	1	20	1-EI-CB-202	EI/EMERG SWGR RM DG ISOL PANEL (H-TRAIN)	11715-FE-027A/22/E4	SB	254'	7/D	S R	6,41	N/A	N/A	YES	N/A	N/A	
5387	1	20	1-EI-CB-21	EI/CONTROL PANEL	11715-FE-027B/33/6	SB	277'	LOGIC	S R	--	N/A	N/A	YES	N/A	N/A	
5388	1	20	21A	EI/CONTROL PANEL	DWG NOT AVAILABLE	SB	277'	8.4/D	S R	--	N/A	N/A	YES	N/A	N/A	
5389	1	20	1-EI-CB-23A	EI/PROCESS CABINET A	11715-FE-004A/22	SB	252'	IRR #1	S R	41	N/A	N/A	YES	N/A	N/A	
5390	1	20	1-EI-CB-23B	EI/PROCESS CABINET B	11715-FE-004B/26	SB	252'	IRR #1	S R	41	N/A	N/A	YES	N/A	N/A	
5391	1	20	1-EI-CB-23C	EI/PROCESS CABINET C	11715-FE-004C/24	SB	252'	IRR #1	S R	41	N/A	N/A	YES	N/A	N/A	
5392	1	20	1-EI-CB-23D	EI/PROCESS CABINET D	11715-FE-004D/27	SB	252'	IRR #1	S R	41	N/A	N/A	YES	N/A	N/A	
5393	1	20	1-EI-CB-23E	EI/PROCESS CABINET E	11715-FE-004E/18	SB	252'	IRR #1	S R	41	N/A	N/A	YES	N/A	N/A	
5394	1	20	1-EI-CB-25	EI/CONTROL PANEL	11715-FE-027B/33/4	SB	277'	LOGIC	S R	--	N/A	N/A	YES	N/A	N/A	
5395	1	20	1-EI-CB-300	EI/CONTROL PANEL	DWG NOT AVAILABLE	SB	277'	8.8/D	S R	--	N/A	N/A	YES	N/A	N/A	
5396	1	20	1-EI-CB-301C	EI/CONTROL PANEL	11715-FE-027A/22	SB	252'	5.2/DE	S R	--	N/A	N/A	YES	N/A	N/A	
5397	1	20	1-EI-CB-34	EI/POST ACCIDENT MONITORING & CONTROL PANEL	11715-FE-027B/33/4	SB	277'	CR	S R	--	N/A	N/A	YES	N/A	N/A	
5398	1	20	1-EI-CB-44	EI/PROCESS CABINET F	11715-FE-004G/21	SB	252'	IRR #1	S R	41,42	N/A	N/A	YES	N/A	N/A	
5399	1	20	1-EI-CB-47A	EI/SOLID STATE PROTECTION INPUT CABINET (TRAIN A)	11715-1.31 SERIES	SB	252'	IRR #1	S R	41	N/A	N/A	YES	N/A	N/A	
5400	1	20	1-EI-CB-47B	EI/SOLID STATE PROTECTION INPUT CABINET (TRAIN B)	11715-1.31 SERIES	SB	252'	IRR #1	S R	41	N/A	N/A	YES	N/A	N/A	
5401	1	20	1-EI-CB-47C	EI/SOLID STATE PROTECTION LOGIC CABINET (TRAIN A)	11715-1.31 SERIES	SB	252'	IRR #1	S R		N/A	N/A	YES	N/A	N/A	
5402	1	20	1-EI-CB-47D	EI/SOLID STATE PROTECTION LOGIC CABINET (TRAIN B)	11715-1.31 SERIES	SB	252'	IRR #1	S R		N/A	N/A	YES	N/A	N/A	
5403	1	20	1-EI-CB-47E	EIP/SOLID STATE PROTECTION OUTPUT CABINET (TRAIN A)	11715-1.31 SERIES	SB	252'	IRR #1	S R	41	N/A	N/A	YES	N/A	N/A	
5404	1	20	1-EI-CB-47F	EI/SOLID STATE PROTECTION OUTPUT CABINET (TRAIN B)	11715-1.31 SERIES	SB	252'	IRR #1	S R	41	N/A	N/A	YES	N/A	N/A	
5405	1	20	1-EI-CB-48A	EI/AUXILIARY RELAY RACK 1	11715-FE-027A	SB	252'	IRR #1	S R	41	N/A	N/A	YES	N/A	N/A	
5406	1	20	1-EI-CB-51	EI/PRIMARY PLANT PROCESS CABINET 1	11715-FE-047Y/1	SB	252'	IRR #1	S R	--	N/A	N/A	YES	N/A	N/A	
5407	1	20	1-EI-CB-52	EI/PRIMARY PLANT PROCESS CABINET 2	11715-FE-047Y/1	SB	252'	IRR #1	S R	--	N/A	N/A	YES	N/A	N/A	
5408	1	20	1-EI-CB-53	EI/PRIMARY PLANT PROCESS CABINET 3	11715-FE-004S/19	SB	252'	IRR #1	S R	--	N/A	N/A	YES	N/A	N/A	

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LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elv.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
5409	1	20	1-EI-CB-54	EI/PRIMARY PLANT PROCESS CABINET 4	11715-FE-047Y/1	SB	252'	IRR #1	S R --	N/A	N/A	YES	N/A	N/A	
5410	1	20	1-EI-CB-55	EI/PRIMARY PLANT PROCESS CABINET 5	11715-FE-004U/11	SB	252'	IRR #1	S R --	N/A	N/A	YES	N/A	N/A	
5411	1	20	1-EI-CB-56	EI/PRIMARY PLANT PROCESS CABINET 6	11715-FE-004V/16	SB	252'	IRR #1	S R --	N/A	N/A	YES	N/A	N/A	
5412	1	20	1-EI-CB-57	EI/PRIMARY PLANT PROCESS CABINET 7	11715-FE-047Y/1	SB	252'	IRR #1	S R --	N/A	N/A	YES	N/A	N/A	
5413	1	20	1-EI-CB-58	EI/PRIMARY PLANT PROCESS CABINET 8	11715-FE-047Y/1	SB	252'	IRR #1	S R --	N/A	N/A	YES	N/A	N/A	
5414	1	20	1-EI-CB-62A	EI/SAFEGUARDS TEST CABINET A	11715-1.31 SERIES	SB	252'	IRR #1	S R --	N/A	N/A	YES	N/A	N/A	
5415	1	20	1-EI-CB-62B	EI/SAFEGUARDS TEST CABINET B	11715-1.31 SERIES	SB	252'	IRR #1	S R --	N/A	N/A	YES	N/A	N/A	
5416	1	20	1-EI-CB-64A	EI/SOLID STATE PROT SYS AUX RELAY RACK	11715/12050-1.28-458	SB	252'	IRR #1	S R 41	N/A	N/A	YES	N/A	N/A	
5417	1	20	1-EI-CB-64B	EI/SOLID STATE PROT SYS AUX RELAY RACK	11715/12050-1.28-458	SB	252'	IRR #1	S R 41	N/A	N/A	YES	N/A	N/A	
5418	1	20	1-EI-CP-04	EI/MICROPROCESSOR CABINET	11715-FE-027B/33	SB	277'	CR	S R --	N/A	N/A	YES	N/A	N/A	
5419	1	20	1-EP-CB-10C	EP/PZR DISTRIBUTION PANEL #2	DWG NOT AVAILABLE	AUX	280'	RCRM/12/JK	S R --	N/A	N/A	YES	12050-RC-108/8	N/A	
5420	1	20	1-EP-CB-10F	EP/RCS PZR CONTROL PANEL	DWG NOT AVAILABLE	AUX	280'	RCRM/12/	S R --	N/A	N/A	YES	12050-RC-108/8	N/A	
5425G	1	20	1-EP-CB-115B	EP/CONT ISOL TRIP VALVE RELAY PANEL A-1	11715-FE-188K1/5/F2	AUX	260'	ELEC TUNNEL #1	S R 6,41	N/A	N/A	YES	N/A	N/A	
5425H	1	20	1-EP-CB-115C	EP/CONT ISOL TRIP VALVE RELAY PANEL A-2	11715-FE-188K1/5/J2	AUX	260'	ELEC TUNNEL #1	S R 6,41	N/A	N/A	YES	N/A	N/A	
5425J	1	20	1-EP-CB-116A	EP/CONT ISOL TRIP VALVE RELAY PANEL B	11715-FE-188K1/5/F5	AUX	260'	ELEC TUNNEL #1	S R 6	N/A	N/A	YES	N/A	N/A	
5425F	1	20	1-EP-CB-116C	EI/CONT ISOL TRIP VALVE RELAY PANEL	11715-FE-188K1/5/C6	AUX	260'	ELEC TUNNEL #1	S R 6,41	N/A	N/A	NO	11715-RC-152/1	N/A	
5563	1	20	1-FP-CB-11AN	EP/HEAT TRACE DISTRIBUTION CABINET	11715-FE-1Q/27	AUX	259'	7.5/L	S R --	ON	ON	YES	N/A	N/A	
5575	2	20	1-EP-CB-11AR	EP/HEAT TRACE DISTRIBUTION CABINET	11715-FE-1Q/27	AUX	259'	8.5/L	S R --	ON	ON	YES	N/A	N/A	
5564	1	20	1-EP-CB-11BN	EP/HEAT TRACE DISTRIBUTION CABINET	11715-FE-1Q/27	AUX	259'	7.5/L	S R --	ON	ON	YES	N/A	N/A	
5576	2	20	1-EP-CB-11BR	EP/HEAT TRACE DISTRIBUTION CABINET	11715-FE-1Q/27	AUX	259'	7.9/L	S R --	ON	ON	YES	N/A	N/A	
5587	1	20	1-EP-CB-11N1	EP/HEAT TRACE CONTROL CABINET	11715-FE-63 SERIES	AUX	259'	7.5/L	S R 30	ON	ON	YES	N/A	N/A	
5588	2	20	1-EP-CB-11R1	EP/HEAT TRACE CONTROL CABINET	11715-FE-63 SERIES	AUX	259'	7.5/L	S R 30	ON	ON	YES	N/A	N/A	
5425I	1	20	1-EP-CB-121A	EP/CONT ISOL TRIP VALVE RELAY PANEL	13075-FE-3ME	SB	277'	LOGIC RM #1	S R 6,41	N/A	N/A	YES	11715-SS-008/3	1-EP-CB-19A	



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(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
5425K	1	20	1-EP-CB-121B	EP/CONT ISOL TRIP VALVE RELAY PANEL	13075-FE-3ME	SB	277'	LOGIC RM #1	S R 6,41	N/A	N/A	YES	11715-SS-008/3	1-EP-CB-198	
5577	2	20	1-EP-CB-12AR	EP/HEAT TRACE DISTRIBUTION CABINET	11715-FE-63 SERIES	AUX	259'	NOTE 1C	S R 30	ON	ON	YES	N/A	N/A	
5578	2	20	1-EP-CB-12BR	EP/HEAT TRACE DISTRIBUTION CABINET	11715-FE-63 SERIES	AUX	259'	NOTE 1C	S R 30	ON	ON	YES	N/A	N/A	
5589	1	20	1-EP-CB-12N1	EP/HEAT TRACE CONTROL CABINET	11715-FE-63 SERIES	AUX	259'	NOTE 1J	S R 30	ON	ON	YES	N/A	N/A	
5590	2	20	1-EP-CB-12R1	EP/HEAT TRACE CONTROL CABINET	11715-FE-63 SERIES	AUX	259'	NOTE 1J	S R 30	ON	ON	YES	N/A	N/A	
5567	1	20	1-EP-CB-13AN	EP/HEAT TRACE DISTRIBUTION CABINET	11715-FE-1Q/27	AUX	274'	8.7/H	S R --	ON	ON	YES	N/A	N/A	
5579	2	20	1-EP-CB-13AR	EP/HEAT TRACE DISTRIBUTION CABINET	11715-FE-63 SERIES	AUX	274'	NOTE 1D	S R 30	ON	ON	YES	N/A	N/A	
5568	1	20	1-EP-CB-13BN	EP/HEAT TRACE DISTRIBUTION CABINET	11715-FE-1Q/27	AUX	274'	8.7/H	S R --	ON	ON	YES	N/A	N/A	
5580	2	20	1-EP-CB-13BR	EP/HEAT TRACE DISTRIBUTION CABINET	11715-FE-63 SERIES	AUX	274'	NOTE 1D	S R 30	ON	ON	YES	N/A	N/A	
5591	1	20	1-EP-CB-13N1	EP/HEAT TRACE CONTROL CABINET	11715-FE-63 SERIES	AUX	274'	NOTE 1D	S R 30	ON	ON	YES	N/A	N/A	
5592	2	20	1-EP-CB-13R1	EP/HEAT TRACE CONTROL CABINET	11715-FE-63 SERIES	AUX	274'	8.7/H	S R 30	ON	ON	YES	N/A	N/A	
5569	1	20	1-EP-CB-14AN	EP/HEAT TRACE DISTRIBUTION CABINET	11715-FE-1Q/27	AUX	259'	9.5/L	S R --	ON	ON	YES	N/A	N/A	
5581	2	20	1-EP-CB-14AR	EP/HEAT TRACE DISTRIBUTION CABINET	11715-FE-63 SERIES	AUX	259'	8/L	S R 30	ON	ON	YES	N/A	N/A	
5570	1	20	1-EP-CB-14BN	EP/HEAT TRACE DISTRIBUTION CABINET	11715-FE-1Q/27	AUX	259'	9.5/L	S R --	ON	ON	YES	N/A	N/A	
5582	2	20	1-EP-CB-14BR	EP/HEAT TRACE DISTRIBUTION CABINET	11715-FE-63 SERIES	AUX	259'	8/L	S R 30	ON	ON	YES	N/A	N/A	
5593	1	20	1-EP-CB-14N1	EP/HEAT TRACE CONTROL CABINET	11715-FE-63 SERIES	AUX	259'	9.5/L	S R 30	ON	ON	YES	N/A	N/A	
5594	2	20	1-EP-CB-14R1	EP/HEAT TRACE CONTROL CABINET	11715-FE-63 SERIES	AUX	259'	8/L	S R 30	ON	ON	YES	N/A	N/A	
5599	1, 2	20	1-EP-CB-15A	/ANNUNCIATOR CABINET - 15	DWG NOT AVAILABLE	AUX	259'		S R --	ON	ON	YES	N/A	N/A	
5600	1, 2	20	1-EP-CB-16A1	/ANNUNCIATOR CABINET - 16	DWG NOT AVAILABLE	AUX	259'		S R --	ON	ON	YES	N/A	N/A	
5601	1, 2	20	1-EP-CB-17A	/ANNUNCIATOR CABINET - 17	DWG NOT AVAILABLE	AUX	274'		S R --	ON	ON	YES	N/A	N/A	
5421	1	20	1-EP-CB-20A	EP/APPENDIX R ISOL PANEL	11715-FE-027A/22/A2	SB	254'	8/C	S R --	N/A	N/A	YES	N/A	N/A	
5422	1	20	1-EP-CB-28A	EP/AUXILIARY RELAY RACK A	11715-FE-30C/29	SB	252'	IRR #1	S R 41	N/A	N/A	YES	N/A	N/A	
5423	1	20	1-EP-CB-28B	EP/AUXILIARY RELAY RACK B	11715-FE-30D/28	SB	252'	IRR #1	S R 41	N/A	N/A	YES	N/A	N/A	
5424	1	20	1-EP-CB-28C	EP/AUXILIARY RELAY RACK C	11715-FE-30E/26	SB	252'	IRR #1	S R	N/A	N/A	YES	N/A	N/A	
5424A	1	20	1-EP-CB-28E	EP/AUXILIARY RELAY RACK E	11715-FE-30G/8	SB	252'	IRR #1	S R 6,41	N/A	N/A	YES	N/A	N/A	
5424B	1	20	1-EP-CB-28F	EP/AUXILIARY RELAY RACK F	11715-FE-30H/9	SB	252'	IRR #1	S R 6,41	N/A	N/A	YES	N/A	N/A	

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 SEISMIC REVIEW SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NAI SSEL.DBF / 05/21/97 / 09:02:36  
 Sort Criteria: Class, ID Number  
 Filter Criteria: (Eval. Type CONTAINS 'S')  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN	CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Norma?	ST. Desired	POWER REQ'D?	SUPPORTING DWG. NO./REV.	SYS. & SUPPORTING COMPONENTS	REQ'D INTERCONNECTIONS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	
5424C	1	20	1-EP-CB-28G	EP/AUXILIARY RELAY RACK G	11715-FE-3DJ/15	SB	252'	IRR #1	S R	6,41	N/A	N/A	YES	N/A		N/A	
5425	1	20	1-EP-CB-28H	EP/SW LOGIC CABINET 1A	11715-FE-3DK/22	SB	252'	IRR #1	S R	41	N/A	N/A	YES	N/A		N/A	
5425A	1	20	1-EP-CB-28HX	EP/SW LOGIC CABINET 1AX	11715-FE-3LA/11	SB	252'	IRR #1	S R	6,41	N/A	N/A	YES	N/A		N/A	
5425B	1	20	1-EP-CB-28J	EP/SW LOGIC CABINET 1B	11715-FE-3DL/26	SB	252'	IRR #1	S R	6,41	N/A	N/A	YES	N/A		N/A	
5425C	1	20	1-EP-CB-28JX	EP/SW LOGIC CABINET 1BX	11715-FE-3LB/11	SB	252'	IRR #1	S R	6,41	N/A	N/A	YES	N/A		N/A	
5595	1	20	1-EP-CB-41W1	EP/HEAT TRACE CONTROL CABINET	11715-FE-63 SERIES	AFPH	271'	1.1/LA	S R	30	ON	ON	YES	N/A		N/A	
5596	2	20	1-EP-CB-41R1	EP/HEAT TRACE CONTROL CABINET	11715-FE-63 SERIES	AFPH	271'	1.1/LA	S R	30	ON	ON	YES	N/A		N/A	
5602	1, 2	20	1-EP-CB-45A	/ANNUNCIATOR CABINET - 45	DWG. NOT AVAILABLE	AFPH	271'	--	S R	--	ON	ON	YES	N/A		N/A	
5425D	1	20	1-EP-CB-63A	EP/LOOP STOP VALVE LOGIC CABINET RACK A	11715-1.32 SERIES	SB	252'	IRR #1	S R	6	N/A	N/A	YES	N/A		N/A	
5425E	1	20	1-EP-CB-63B	EP/LOOP STOP VALVE LOGIC CABINET RACK B	11715-1.32 SERIES	SB	252'	IRR #1	S R	6	N/A	N/A	YES	N/A		N/A	
6036	1	20	1-EP-DB-16A	EP/120V SEMI-VITAL AC BUS DISTRIBUTION PANEL	11715-FE-001AJ/00/F5	SB	252'	EMER SWGR 5/D	S R	--	N/A	N/A	YES	N/A		TRANS-118	
6038	2	20	1-EP-DB-16B	EP/120V SEMI-VITAL AC BUS DISTRIBUTION PANEL	11715-FE-001AJ/00/D5	SB	252'	EMER SWGR 5/D	S R	--	N/A	N/A	YES	N/A		TRANS-119	
4175	1	20	1-FW-FI-100A	FW/AFWP TO SG A FLOW	11715-FM-074A1/32/D6	SB	277'	CR	S R	36	ON	ON	YES	11715-FW-050/6		1-EI-CB-04	
4160	2	20	1-FW-FI-100B	FW/AFWP TO SG B FLOW	11715-FM-074A1/32/C6	SB	277'	CR	S R	36	ON	ON	YES	11715-FW-051/6		1-EI-CB-04	
4164	2	20	1-FW-FI-100C	FW/AFWP TO SG C FLOW	11715-FM-074A1/32/B7	SB	277'	CR	S R	36	ON	ON	YES	11715-FW-052/7		1-EI-CB-04	
4183	1	20	1-FW-LI-1474	FW/SG A LEVEL	11715-FM-074A1/32/E7	SB	277'	CR	S R	36	ON	ON	YES	11715-FW-094/9		1-EI-CB-04	
4185	1	20	1-FW-LI-1475	FW/SG A LEVEL	11715-FM-074A1/32/E6	SB	277'	CR	S R	36	ON	ON	YES	11715-FW-100/9		1-EI-CB-04	
4187	1	20	1-FW-LI-1476	FW/SG A LEVEL	11715-FM-074A1/32/E6	SB	277'	CR	S R	36	ON	ON	YES	11715-FW-106/8		1-EI-CB-04	
4195	2	20	1-FW-LI-1484	FW/SG B LEVEL	11715-FM-074A1/32/D7	SB	277'	CR	S R	36	ON	ON	YES	11715-FW-096/9		1-EI-CB-04	
4197	2	20	1-FW-LI-1485	FW/SG B LEVEL	11715-FM-074A1/32/D6	SB	277'	CR	S R	36	ON	ON	YES	11715-FW-102/9		1-EI-CB-04	
4199	2	20	1-FW-LI-1486	FW/SG B LEVEL	11715-FM-074A1/32/D6	SB	277'	CR	S R	36	ON	ON	YES	11715-FW-108/9		1-EI-CB-04	
4205	3	20	1-FW-LI-1494	FW/SG C LEVEL	11715-FM-074A1/32/C7	SB	277'	CR	S R	36	ON	ON	YES	11715-FW-098/9		1-EI-CB-04	
4207	3	20	1-FW-LI-1495	FW/SG C LEVEL	11715-FM-074A1/32/C7	SB	277'	CR	S R	36	ON	ON	YES	11715-FW-104/9		1-EI-CB-04	
4209	3	20	1-FW-LI-1496	FW/SG C LEVEL	11715-FM-074A1/32/C6	SB	277'	CR	S R	36	ON	ON	YES	11715-FW-110/8		1-EI-CB-04	
4176	1, 2	20	1-FW-LR-1477	FW/SG 1A, B, C WIDE RANGE LVL	11715-FM-074A1/32/E8	SB	277'	CR	S R	--	ON	ON	YES	N/A		1-EI-CB-04	

NORTH ANNA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
SEISMIC REVIEW SSEL  
(Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA1\_SSEL.DBF / 05/21/97 / 09:02:36  
Sort Criteria: Class, ID Number  
Filter Criteria: (Eval. Type CONTAINS 'S')  
Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN	CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
4146	2	20	1-FW-PI-101A-1	FW/AFWP TO SG B PRESSURE	11715-FM-074A3/29/F8 SB		277'	CR	S R	36	ON	ON	YES	11715-FW-016/5	1-EI-CB-04	
4147	2	20	1-FW-PI-101A-2	FW/AFWP TO SG B PRESSURE	11715-FM-074A3/29/F8 SB		254'	SMGR RM	S R	--	ON	ON	YES	N/A	N/A	
4151	2	20	1-FW-PI-101B-1	FW/AFWP TO SG C PRESSURE	11715-FM-074A3/29/E8 SB		277'	CR	S R	36	ON	ON	YES	11715-FW-017/5	1-EI-CB-04	
4152	2	20	1-FW-PI-101B-2	FW/AFWP TO SG C PRESSURE	11715-FM-074A3/29/E8 SB		254'	SMGR RM	S R	--	ON	ON	YES	N/A	N/A	
4154	1	20	1-FW-PI-101C-1	FW/AFWP TO SG A PRESSURE	11715-FM-074A3/29/E8 SB		277'	CR	S R	--	ON	ON	YES	N/A	N/A	
4155	1	20	1-FW-PI-101C-2	FW/AFWP TO SG A PRESSURE	11715-FM-074A3/29/E8 SB		254'	SMGR RM	S R	--	ON	ON	YES	N/A	N/A	
4136	1	20	1-FW-PI-103A	FW/TDAFWP SUCTION PRESSURE	11715-FM-074A3/29/C7 SB		277'	CR	S R	36	ON	ON	YES	11715-FW-003/3	1-EI-CB-04	
4130	2	20	1-FW-PI-103B	FW/MDAFWP SUCTION PRESSURE	11715-FM-074A3/29/C6 SB		277'	CR	S R	36	ON	ON	YES	N/A	1-EI-CB-04	
4124	2	20	1-FW-PI-103C	FW/MDAFWP SUCTION PRESSURE	11715-FM-074A3/29/C5 SB		277'	CR	S R	36	ON	ON	YES	11715-FW-002/5	1-EI-CB-04	
2041	1	20	1-GN-PI-134A	GN/N2 RESERVE PRESSURE	11715-GN-007/3 SB		277'	CR	S R	--	ON	ON	YES	N/A	N/A	
2043	2	20	1-GN-PI-134B	GN/N2 RESERVE PRESSURE	11715-GN-008/3 SB		277'	CR	S R	--	ON	ON	YES	N/A	N/A	
4004	1	20	1-MS-PI-1474	MS/SG A STEAM PRESSURE	11715-FM-070B1/19/E7 SB		277'	CR	S R	9, 36	ON	ON	YES	11715-MS-144/6	1-EI-CB-04	
4006	2	20	1-MS-PI-1476	MS/SG A STEAM PRESSURE	11715-FM-070B1/19/C6 SB		277'	CR	S R	9, 36	ON	ON	YES	11715-MS-156/5	1-EI-CB-04	
4030	1	20	1-MS-PI-1485	MS/SG B STEAM PRESSURE	11715-FM-070B2/19/B7 SB		277'	CR	S R	9, 36	ON	ON	YES	11715-MS-146/5	1-EI-CB-04	
4032	2	20	1-MS-PI-1486	MS/SG B STEAM PRESSURE	11715-FM-070B2/19/B6 SB		277'	CR	S R	9, 36	ON	ON	YES	11715-MS-158/4	1-EI-CB-04	
4056	2	20	1-MS-PI-1494	MS/SG C STEAM PRESSURE	11715-FM-070B3/23/B7 SB		277'	CR	S R	9, 36	ON	ON	YES	11715-MS-148/6	1-EI-CB-04	
4058	1	20	1-MS-PI-1496	MS/SG C STEAM PRESSURE	11715-FM-070B3/23/B6 SB		277'	CR	S R	9, 36	ON	ON	YES	11715-MS-160/5	1-EI-CB-04	
4008	1	20	1-MS-PI-C-101A	MS/SG A STEAM PRESSURE	11715-FM-070B1/19/C6 SB		277'	CR	S R	--	ON	ON	YES	N/A	N/A	
4034	2	20	1-MS-PI-C-101B	MS/SG B STEAM PRESSURE	11715-FM-070B2/19/C5 SB		277'	CR	S R	--	ON	ON	YES	N/A	N/A	
4060	3	20	1-MS-PI-C-101C	MS/SG C STEAM PRESSURE	11715-FM-070B3/23/B6 SB		277'	CR	S R	--	ON	ON	YES	11715-MS-014/8	N/A	
3051	1, 2	20	1-QS-LI-100A	QS/RWST LEVEL	11715-FM-091A1/20/D8 SB		277'	CR	S R	36	ON	ON	YES	11715-QS-003/9	1-EI-CB-05	
3052	1, 2	20	1-QS-LI-100B	QS/RWST LEVEL	11715-FM-091A1/20/D6 SB		277'	CR	S R	36	ON	ON	YES	11715-QS-004/10	1-EI-CB-05	
3053	1, 2	20	1-QS-LI-100C	QS/RWST LEVEL	11715-FM-091A1/20/D8 SB		277'	CR	S R	36	ON	ON	YES	11715-QS-016/8	1-EI-CB-05	
3054	1, 2	20	1-QS-LI-100D	QS/RWST LEVEL	11715-FM-091A1/20/D6 SB		277'	CR	S R	36	ON	ON	YES	11715-QS-017/9	1-EI-CB-05	
2008	2	20	1-RC-HC1*	RC/PZR HEATER CONTROL #1	11715-FM-093B1/22/B4 SB		274'	CRD RM #1	S R	--	ON	ON	YES	N/A	N/A	
2009	2	20	1-RC-HC2*	RC/PZR HEATER CONTROL #2	11715-FM-093B1/22/B4 SB		274'	CRD RM #1	S R	--	ON	ON	YES	N/A	N/A	
3005A	1, 2	20	1-RC-LI-1459A	RC/PZR LEVEL IND CH 1	11715-RC-061/13 SB		277'	CR	S R	--	ON	ON	YES	11715-FE-11A	1-EI-CB-03	

NORTH ANNA UNIT 3  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
SEISMIC REVIEW SSEL  
(Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NAI\_SSEL.DBF / 05/21/97 / 09:02:36  
Sort Criteria: Class, ID Number  
Filter Criteria: (Eval) Type CONTAINS 'S'  
Program File Name & Version: SSEM 2.2

LINE NO.	TRAIN	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elv.	LOCATION Pn. or Row/Col.	SORT NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING DWG. NO./REV.	SYS. & SUPPORTING COMPONENTS	REQ'D INTERCONNECTIONS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10) (11)	(12)	(13)	(14)	(15)	(16)	(17)	
3005B	1, 2	20	1-RC-LI-1459B	RC/PZR LEVEL IND CH I	11715-RC-061/13	SB	254'	EM SWGR #1	S R --	ON	ON	YES	11715-FE-11A	1-EI-CB-06A		
3006A	1, 2	20	1-RC-LI-1460	RC/PZR LEVEL IND CH II	11715-RC-062/9	SB	277'	CR	S R --	ON	ON	YES	11715-FE-11A	1-EI-CB-03		
3007A	1, 2	20	1-RC-LI-1461	RC/PZR LEVEL IND CH III	11715-RC-063/10	SB	277'	CR	S R --	ON	ON	YES	11715-FE-11B	1-EI-CB-03		
3008A	2	20	1-RC-LI-1462	RC/PZR LEVEL - COLD CAL (STUP)	11715-RC-064/4	SB	277'	CR	S R --	ON	ON	YES	11715-RC-064	1-EI-CB-03		
2033	1, 2	20	1-RC-LI-1470	RC/PRT LEVEL	11715-RC-035/5	SB	277'	CR	S R 36	ON	ON	YES	N/A	1-EI-CB-03		
2003	1	20	1-RC-PI-1402A	RC/REACTOR COOLANT WR PRESSURE	11715-RC-131/6	SB	277'	CR	S R 36	ON	ON	YES	N/A	1-EI-CB-03		
2004	1	20	1-RC-PI-1402B	RC/REACTOR COOLANT WR PRESSURE	11715-RC-131/6	SB	277'	CR	S R 36	ON	ON	YES	N/A	1-EI-CB-03		
2019	2	20	1-RC-PI-1445	RC/PZR PRESSURE	11715-RC-108/5	SB	277'	CR	S R --	ON	ON	YES	N/A	N/A		
2011	2	20	1-RC-PI-1455	RC/PZR PRESSURE	11715-RC-069/10	SB	277'	CR	S R 36	ON	ON	YES	N/A	1-EI-CB-03		
2013	2	20	1-RC-PI-1456	RC/PZR PRESSURE	11715-RC-071/9	SB	277'	CR	S R 36	ON	ON	YES	N/A	1-EI-CB-03		
2015	2	20	1-RC-PI-1457	RC/PZR PRESSURE	11715-RC-073/9	SB	277'	CR	S R 36	ON	ON	YES	N/A	1-EI-CB-03		
2031	1, 2	20	1-RC-PI-1472	RC/PRT PRESSURE	11715-RC-041/3	SB	277'	CR	S R 36	ON	ON	YES	N/A	1-EI-CB-03		
3020	1, 2	20	1-RC-TI-1463	RC/PZR PORV OUTLET TEMP	11715-RC-056/4	SB	277'	CR	S R 36	ON	ON	YES	N/A	1-EI-CB-03		
4260A	1, 2	20	1-RH-FI-1605	RH/RHR HX OUTLET FLOW	11715-RH-004/6	SB	277'	CR	S R --	ON	ON	YES	N/A	N/A		
4254A	1, 2	20	1-RH-TR-1604	RH/RHR HX INLET TEMPERATURE	11715-RH-002/4	SB	277'	CR	S R --	ON	ON	YES	N/A	N/A		
5340A	1	20	1-SW-FI-103A	SW/SW RETURN HEADER FLOW	11715-FM-078H/04/D6	SB	277'	CR	S R --	ON	ON	YES	N/A	N/A		
5340B	1	20	1-SW-FI-103B	SW/SW RETURN HEADER FLOW	11715-FM-078H/04/D6	SB	277'	CR	S R --	ON	ON	YES	N/A	N/A		
5346A	1	20	1-SW-FI-104A	SW/SW RETURN HEADER FLOW	11715-FM-078H/04/D7	SB	277'	CR	S R --	ON	ON	YES	N/A	N/A		
5346B	1	20	1-SW-FI-104B	SW/SW RETURN HEADER FLOW	11715-FM-078H/04/D7	SB	277'	CR	S R --	ON	ON	YES	N/A	N/A		
5338	1	20	1-SW-FI-110A	SW/SW HEADER TO VALVE HOUSE FLOW	11715-FM-078H/04/D5	SB	277'	CR	S R 36	ON	ON	YES	11715-SW-096/1	1-EI-CB-05		
5339	1	20	1-SW-FI-110B	SW/SW HEADER TO VALVE HOUSE FLOW	11715-FM-078H/04/D5	SB	277'	CR	S R 36	ON	ON	YES	11715-SW-096/1	2-EI-CB-05		
5344	1	20	1-SW-FI-111A	SW/SW HEADER TO VALVE HOUSE FLOW	11715-FM-078H/04/E8	SB	277'	CR	S R 36	ON	ON	YES	11715-SW-097/1	1-EI-CB-05		
5345	1	20	1-SW-FI-111B	SW/SW HEADER TO VALVE HOUSE FLOW	11715-FM-078H/04/E8	SB	277'	CR	S R 36	ON	ON	YES	11715-SW-097/1	2-EI-CB-05		
5164	1	20	1-SW-PI-101A	SW/SW PUMP DISCHARGE PRESSURE	11715-FM-078A3/28/D5	SB	277'	CR	S R 36	ON	ON	YES	11715-SW-027/6	1-EI-CB-05		
5166	2	20	1-SW-PI-101B	SW/SW PUMP DISCHARGE PRESSURE	11715-FM-078A3/28/D5	SB	277'	CR	S R 36	OFF	ON	YES	11715-SW-028/6	1-EI-CB-05		
5303	1	20	1-SW-TI-103A	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G1/12/D4	SB	277'	CR	S R 36	ON	ON	YES	11715-SW-007/6	1-EI-CB-05		
5304	1	20	1-SW-TI-103B	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G1/12/D6	SB	277'	CR	S R 36	ON	ON	YES	11715-SW-008/6	1-EI-CB-05		

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 SEISMIC REVIEW SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NAI SSEL.DBF / 05/21/97 / 09:02:36  
 Sort Criteria: Class, ID Number  
 Filter Criteria: (Eval. Type CONTAINS 'S')  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Fir. Elev.	LOCATION Rm. or Row/Col.	SORT NOTES	OP. Normal	ST. Desired	POWER REQD?	SUPPORTING Dwg. NO./REV.	SYS. & SUPPORTING COMPONENTS	REQ'D INTERCONNECTIONS	REG. ISSUE
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10) (11)	(12)	(13)	(14)	(15)	(16)	(17)	
5305	1	20	1-SW-TI-103C	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G1/12/D8	SB	277'	CR	S R 36	ON	ON	YES	11715-SW-009/6	1-EI-CB-05	
5370	1	20	1-SW-TI-105A	SW/CC HX INLET TEMP	11715-FM-078C1/32/E5	AUX	244'	9.7/G	S R --	ON	ON	YES	N/A	N/A	
5369	1	20	1-SW-TI-105B	SW/CC HX INLET TEMP	11715-FM-078C1/32/E6	AUX	244'	9.7/G	S R --	ON	ON	YES	N/A	JB-5102; JB-5134	
5331	1	20	1-SW-TI-106A	SW/SW HEADER TO VALVE HOUSE TEMP	11715-FM-078H/04/E6	SB	277'	CR	S R 36	ON	ON	YES	11715-SW-048/5	1-EI-CB-05	
5332	1	20	1-SW-TI-106B	SW/SW HEADER TO VALVE HOUSE TEMP	11715-FM-078H/04/E6	SB	277'	CR	S R 36	ON	ON	YES	11715-SW-048/5	2-EI-CB-05	
5334	1	20	1-SW-TI-107A	SW/SW HEADER TO VALVE HOUSE TEMP	11715-FM-078H/04/E7	SB	277'	CR	S R 36	ON	ON	YES	11715-SW-047/5	1-EI-CB-05	
5335	1	20	1-SW-TI-107B	SW/SW HEADER TO VALVE HOUSE TEMP	11715-FM-078H/04/E7	SB	277'	CR	S R 36	ON	ON	YES	11715-SW-047/5	2-EI-CB-05	
5374	1	20	1-SW-TI-114A	SW/CC HX OUTLET TEMP	11715-FM-078C1/32/E5	AUX	244'	9.7/G	S R --	ON	ON	YES	N/A	N/A	
5373	1	20	1-SW-TI-114B	SW/CC HX OUTLET TEMP	11715-FM-078C1/32/E6	AUX	244'	9.7/G	S R --	ON	ON	YES	N/A	N/A	
6102		20	2-EG-P-2H	EDG CONTROL PANEL		SB	270'	EDG	S --						
6103		20	2-EG-P-2J	EDG CONTROL PANEL		SB	270'	EDG	S --						
5539	1	20	2-EG-PS-702HA	EG/AIR COMPRESSOR AIR RECEIVER PRESSURE	DWG NOT AVAILABLE	SB	270'	EDG	S R 36	ON	ON	YES	N/A	2-EG-P-2H	
5540	2	20	2-EG-PS-702HB	EG/AIR COMPRESSOR AIR RECEIVER PRESSURE	DWG NOT AVAILABLE	SB	270'	EDG	S R 36	ON	ON	YES	N/A	2-EG-P-2H	
5541	1	20	2-EG-PS-702JA	EG/AIR COMPRESSOR AIR RECEIVER PRESSURE	DWG NOT AVAILABLE	SB	270'	EDG	S R 36	ON	ON	YES	N/A	2-EG-P-2J	
5542	2	20	2-EG-PS-702JB	EG/AIR COMPRESSOR AIR RECEIVER PRESSURE	DWG NOT AVAILABLE	SB	270'	EDG	S R 36	ON	ON	YES	N/A	2-EG-P-2J	
5521	1	20	2-EG-PS-703H	EG/FUEL OIL DIFF PRESS	11715-1.30-212C	SB	270'	EDG	S R 36,29	OFF	ON	YES	N/A	2-EG-P-2H	
5522	2	20	2-EG-PS-703J	EG/FUEL OIL DIFF PRESS	11715-1.30-212C	SB	270'	EDG	S R 36,29	OFF	ON	YES	N/A	2-EG-P-2J	
5479C	1	20	2-EI-CB-08A	EG/EMERG DG CONTROL PANEL (H-TRAIN)	11715-FE-027B/33/H2	SB	277'	CR	S R 6	N/A	N/A	YES	N/A	N/A	
5479D	1	20	2-EI-CB-08B	EG/EMERG DG CONTROL PANEL (H-TRAIN)	11715-FE-027B/33/H2	SB	277'	CR	S R 6,41	N/A	N/A	YES	N/A	N/A	
5418C	1	20	2-EI-CB-201	EI/DIESEL ISOL PANEL (H-TRAIN)	12050-FE-055F/17	SB	272'	EDG	S R 6,41	N/A	N/A	YES	N/A	N/A	
5168	1	20	2-SW-PI-201A	SW/SW PUMP DISCHARGE PRESSURE	11715-FM-078A3/28/D4	SB	277'	CR	S R 36	ON	ON	YES	12050-SW-012/3	1-EI-CB-05	
5170	2	20	2-SW-PI-201B	SW/SW PUMP DISCHARGE PRESSURE	11715-FM-078A3/28/D3	SB	277'	CR	S R 36	OFF	ON	YES	12050-SW-013/3	1-EI-CB-05	
5327	1	20	2-SW-TI-203A	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G2/10/D4	SB	277'	CR	S R --	ON	ON	YES	12050-SW-022/5	N/A	
5328	1	20	2-SW-TI-203B	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G2/10/D6	SB	277'	CR	S R --	ON	ON	YES	12050-SW-023/5	N/A	

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 SEISMIC REVIEW SSEL  
 (Sorted by Equipment Class and Mark Number)

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 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQD?	SUPPORTING SYS. DWG. NO./REV.	REQ'D & SUPPORTING COMPONENTS	INTERCONNECTIONS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
5329	1	20	2-SW-TI-203C	SW/CCP LUBE OIL COOLER CONTROL	11715-FM-078G2/10/D8 SB	277'	CR	S	R --	ON	ON	YES	12050-SW-024/5	N/A		
5368	1	20	2-SW-TI-205A	SW/CC HX INLET TEMP	11715-FM-078C1/32/E7 AUX	244'	9.7/G	S	R --	ON	ON	YES	N/A	N/A		
5367	1	20	2-SW-TI-205B	SW/CC HX INLET TEMP	11715-FM-078C1/32/E8 AUX	244'	9.7/G	S	R --	ON	ON	YES	N/A	N/A		
5372	1	20	2-SW-TI-207A	SW/CC HX OUTLET TEMP	11715-FM-078C1/32/E6 AUX	244'	9.7/G	S	R --	ON	ON	YES	N/A	N/A		
5371	1	20	2-SW-TI-207B	SW/CC HX OUTLET TEMP	11715-FM-078C1/32/E7 AUX	244'	9.7/G	S	R --	ON	ON	YES	N/A	N/A		
5002	1	21	1-CC-E-1A	CC/COMPONENT COOLING WATER HX	11715-FM-079A1/17/E5 AUX	259'	8.5/F	S	--	N/A	N/A	NO	N/A	N/A		
5006	1	21	1-CC-E-1B	CC/COMPONENT COOLING WATER HX	11715-FM-079A1/17/D5 AUX	259'	8.5/F	S	--	N/A	N/A	NO	N/A	N/A		
5047	1, 2	21	1-CC-TK-1	CC/CC SURGE TANK	11715-FM-079A1/17/E6 AUX	291'	9/F	S	--	N/A	N/A	NO	N/A	N/A		
1073	1, 2	21	1-CH-E-1	CH/SEAL WATER HEAT EXCHANGER	11715-FM-095B1/21/B6 AUX	245'	12/H	S	--	N/A	N/A	NO	11715-CH-001/7	COMPONENT COOLING WATER		
1005	1	21	1-CH-E-3	CH/REGENERATIVE HEAT EXCHANGER	11715-FM-095C1/14/E5 CONTMT	241'	11	S	---	N/A	N/A	NO	VIMS27221-27223 N/A 27227-27230 11715-FM-001C	N/A		
1199	2	21	1-CH-E-4	CH/EXCESS LETDOWN HEAT EXCHANGER	11715-FM-095C1/14/C7 CONTMT	234'	5	S	23	N/A	N/A	NO	11715-FM-10	N/A		
5282	1	21	1-CH-E-5A	CH/CCP LUBE OIL COOLER	11715-FM-078G1/12/D4 AUX	244'	8/K	S	--	N/A	N/A	NO	11715-SW-070/1	OIL		
5283	1	21	1-CH-E-5B	CH/CCP LUBE OIL COOLER	11715-FM-078G1/12/D6 AUX	244'	8.5/K	S	--	N/A	N/A	NO	11715-SW-071/1	OIL		
5284	1	21	1-CH-E-5C	CH/CCP LUBE OIL COOLER	11715-FM-078G1/12/D8 AUX	244'	9/K	S	--	N/A	N/A	NO	11715-SW-072/1	OIL		
1140	1	21	1-CH-TK-1A	CH/BORIC ACID STORAGE TANK A (BAST)	11715-FM-095A1/22/E3 AUX	244'	8.5/G	S	--	N/A	N/A	NO	N/A	1-CH-LT-1106/1161;1-CH-TIC-1107/1162		
1141	2	21	1-CH-TK-1B	CH/BORIC ACID STORAGE TANK B (BAST)	11715-FM-095A1/22/E5 AUX	274'	9/G	S	--	N/A	N/A	NO	N/A	1-CH-LT-1108/1163;1-CH-TIC-1109/1164		
1048	1	21	1-CH-TK-2	CH/VOLUME CONTROL TANK (VCT)	11715-FM-095B1/21/C6 AUX	274'	9.5/J	S	--	N/A	N/A	NO	N/A	1-CH-LT-1115;1-CH-LT-1112		
4118	1	21	1-CN-TK-1	CN/CONDENSATE STORAGE TANK	11715-FM-074A3/29/D3 YARD	-	NOTE 1E	S	--	N/A	N/A	NO	N/A	N/A		
5111	1	21	1-DG-E-1	DG/PRIMARY DRAIN TRANSFER COOLER	11715-FM-079B5/21/A6 CONTMT	226'	5	S	23	N/A	N/A	NO	11715-FM-001D	N/A		
5490	1	21	1-EG-TK-1H	EG/FUEL OIL DAY TANK	11715-FB-035A2/21/C3 SB	270'	DG	S	--	N/A	N/A	NO	N/A	N/A		
5527	1	21	1-EG-TK-1HA	EG/AIR COMPRESSOR AIR RECEIVER	11715-FM-107A1/09/D3 SB	270'	DG	S	--	N/A	N/A	NO	N/A	N/A		
5528	2	21	1-EG-TK-1HB	EG/AIR COMPRESSOR AIR RECEIVER	11715-FM-107A2/09/D3 SB	270'	DG	S	--	N/A	N/A	NO	N/A	N/A		
5491	2	21	1-EG-TK-1J	EG/FUEL OIL DAY TANK	11715-FB-035A2/21/B5 SB	270'	DG	S	--	N/A	N/A	NO	N/A	N/A		
5529	1	21	1-EG-TK-1JA	EG/AIR COMPRESSOR AIR RECEIVER	11715-FM-107A3/10/D3 SB	270'	DG	S	--	N/A	N/A	NO	N/A	N/A		

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 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
5530	2	21	1-EG-TK-1JB	EG/AIR COMPRESSOR AIR RECEIVER	11715-FM-107A4/10/D3	SB	270'	DG	S	--	N/A	N/A	NO	N/A	N/A
5480	1, 2	21	1-EG-TK-2A	EG/UNDERGROUND FO STORAGE TANK	11715-FB-035A1/19/C7	YARD	--	--	S	--	N/A	N/A	NO	N/A	N/A
5481	1, 2	21	1-EG-TK-2B	EG/UNDERGROUND FO STORAGE TANK	11715-FB-035A1/19/B7	YARD	--	--	S	--	N/A	N/A	NO	N/A	N/A
4143	1	21	1-FW-E-10	FW/TDAFWP OIL COOLER	11715-FM-074A3/29/D7	AFPH	--	--	S	36	N/A	N/A	NO	N/A	1-FW-P-2
4142	2	21	1-FW-E-9A	FW/MDAFWP OIL COOLER	11715-FM-074A3/29/D6	AFPH	--	--	S	36	N/A	N/A	NO	N/A	1-FW-P-3A
4141	2	21	1-FW-E-9B	FW/MDAFWP OIL COOLER	11715-FM-074A3/29/D4	AFPH	--	--	S	36	N/A	N/A	NO	N/A	1-FW-P-3B
2045	2	21	1-GN-TK-1A	GN/N2 RESERVE TANK	11715-FM-105A1/20/D3	CONTMT	292'	9.5	S	--	N/A	N/A	NO	N/A	N/A
2044	1	21	1-GN-TK-1B	GN/N2 RESERVE TANK	11715-FM-105A1/20/D7	CONTMT	292'	9.5	S	--	N/A	N/A	NO	N/A	N/A
5053	3	21	1-HV-E-6A	HV/SHROUD COOLING COILS	11715-FM-079B2/21/F5	CONTMT	276'	1	S	23	N/A	N/A	NO	11715-HV-272/2 VIMS 24648; 11715-FM-1B	N/A
5065	3	21	1-HV-E-6B	HV/SHROUD COOLING COILS	11715-FM-079B3/20/F5	CONTMT	275'	13	S	23	N/A	N/A	NO	VIMS 25135 11715-FM-1B	N/A
5077	3	21	1-HV-E-6C	HV/SHROUD COOLING COILS	11715-FM-079B4/21/F5	CONTMT	277'	8	S	23	N/A	N/A	NO	VIMS25688-25690 11715-FM-1B	N/A
5449A	1	21	1-HV-TK-6A	HV/CHILLED WATER EXPANSION TANK	11715-FB-040A1/13	SB	254'	CHILLER RM	S	--	N/A	N/A	NO	N/A	N/A
5449B	2	21	1-HV-TK-6B	HV/CHILLED WATER EXPANSION TANK	11715-FB-040A1/13	SB	254'	CHILLER RM	S	--	N/A	N/A	NO	N/A	N/A
5116	1	21	1-NS-E-1A	NS/NEUTRON SHIELD TANK COOLER	11715-FM-079B5/21/A7	CONTMT	262'	15	S	23	N/A	N/A	NO	N/A	N/A
5117	1	21	1-NS-E-1B	NS/NEUTRON SHIELD TANK COOLER	11715-FM-079B5/21/E5	CONTMT	262'	15	S	23	N/A	N/A	NO	N/A	N/A
3046	1, 2	21	1-QS-TK-1	QS/REFUELING WATER STORAGE TANK (RWST)	11715-FM-091A1/20/D7	YARD	271'	--	S	--	N/A	N/A	NO	N/A	1-QS-L-100A/B/C/D
7001	1, 2	21	1-QS-TK-2	QS/REFUELING WATER CHEM ADD TANK	11715-FM-091A1/20/D6	YARD/TUNL	272'	1.5/L	S	1	N/A	N/A	NO	N/A	N/A
2029	1, 2	21	1-RC-TK-2	RC/PRESSURE RELIEF TANK (PRT)	11715-FM-093B2/23/C5	CONTMT	241'	PC 10	S	16	N/A	N/A	NO	11715-FK-01A/14 11715-FK-001D	N/A
4253	1	21	1-RH-E-1A	RH/RHR HX A	11715-FM-094A2/15/E8	CONTMT	236'	4.5	S	--	N/A	N/A	NO	11715-FK-001E	N/A
4255	2	21	1-RH-E-1B	RH/RHR HX B	11715-FM-094A2/15/E6	CONTMT	236'	3.5	S	--	N/A	N/A	NO	11715-FK-001E	N/A
4247	1	21	1-RH-E-2A	RH/RHR PUMP A SEAL COOLER	11715-FM-094A1/14/D7	CONTMT	233'	5	S	--	N/A	N/A	NO	N/A	1-RH-P-1A
4250	2	21	1-RH-E-2B	RH/RHR PUMP B SEAL COOLER	11715-FM-094A1/14/D4	CONTMT	233'	5	S	--	N/A	N/A	NO	N/A	1-RH-P-1B
5604	1	21	1-RS-E-1A	RS/INSIDE RECIRC SPRAY COOLER A	11715-FM-091A3/20/C7	CONTMT	216'	9	S	26	N/A	N/A	NO	11715-FM-078B2	SERVICE WATER
5604	1	21	1-RS-E-1B	RS/INSIDE RECIRC SPRAY COOLER B	11715-FM-091A3/20/C5	CONTMT	216'	10	S	26	N/A	N/A	NO	11715-FM-078B2	SERVICE WATER

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LINE NO.	EQUIP TRAIN	CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Fir. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D & SUPPORTING COMPONENTS	INTERCONNECTIONS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	
5606	2	21	1-RS-E-1C	RS/INSIDE RECIRC SPRAY COOLER C	11715-FM-091A4/24/D8	CONTMT	216'	9	S	26	N/A	N/A	NO	11715-FM-078B2	SERVICE WATER		
5607	2	21	1-RS-E-1D	RS/INSIDE RECIRC SPRAY COOLER D	11715-FM-091A4/24/D7	CONTMT	216'	9	S	26	N/A	N/A	NO	11715-FM-078B2	SERVICE WATER		
7034	2	21	1-RS-E-2A*	RS/OUTSIDE RECIRC SPRAY PUMP A SEAL HX	11715-FM-091A4/24/C4	SFGD	267'	3.2/LM	S	1	N/A	N/A	NO	N/A	N/A		
7035	2	21	1-RS-E-2B*	RS/OUTSIDE RECIRC SPRAY PUMP B SEAL HX	11715-FM-091A4/24/C3	SFGD	267'	3.5/JK	S	1	N/A	N/A	NO	N/A	N/A		
7036	2	21	1-RS-TK-1	RS/CASING COOLING TANK	11715-FM-091B1/05/C4	YARD/TUNL	270'	2.5/R	S	1	N/A	N/A	NO	N/A	N/A		
7032	2	21	1-RS-TK-1A*	RS/OUTSIDE RECIRC SPRAY PUMP A SEAL TANK	11715-FM-091A4/24/C4	SFGD	267'	3.2/LM	S	1	N/A	N/A	NO	N/A	N/A		
7033	2	21	1-RS-TK-1B*	RS/OUTSIDE RECIRC SPRAY PUMP B SEAL TANK	11715-FM-091A4/24/C3	SFGD	267'	3.5/JK	S	1	N/A	N/A	NO	N/A	N/A		
1087A	1	21	1-S1-TK-2	S1/BORON INJECTION TANK (BIT)	11715-FM-095A3/22/D5	AUX	244'	NOTE 1Q	S	23	N/A	N/A	NO	N/A	N/A		
1212	1, 2	21	1-SS-E-10	SS/PZR LIQUID SPACE SAMPLE COOLER	11715-FM-089D1/16/E4	AUX	274'	8/B	S	23	N/A	N/A	NO	N/A	N/A	COMPONENT COOLING WATER	
1242	1, 2	21	1-SS-E-12	SS/RC COLD LEG SAMPLE COOLER	11715-FM-089D1/16/E4	AUX	274'	9/K	S	--	N/A	N/A	NO	N/A	N/A	COMPONENT COOLING WATER	
5029	1, 2	21	1-SS-E-14	SS/SG SURFACE HX	11715-FM-079C2/13/C4	AUX	274'	9/K	S	23	N/A	N/A	NO	N/A	N/A		
5104	1	21	1-SS-E-34	SS/SAMPLE COOLER	11715-FM-079B1/21/E8	AUX	244'	9/K	S	23	N/A	N/A	NO	N/A	N/A		
5105	1	21	1-SS-E-35	SS/SAMPLE COOLER	11715-FM-079B1/21/E8	AUX	244'	9/K	S	23	N/A	N/A	NO	N/A	N/A		
5106	1	21	1-SS-E-36	SS/SAMPLE COOLER	11715-FM-079B1/21/E8	AUX	244'	9/K	S	23	N/A	N/A	NO	N/A	N/A		
5028	1, 2	21	1-SS-E-3A	SS/LOOP 1 SGBD HX	11715-FM-079C2/13/C4	AUX	274'	9/K	S	23	N/A	N/A	NO	N/A	N/A		
5026	1, 2	21	1-SS-E-3B	SS/LOOP 2 SGBD HX	11715-FM-079C2/13/D4	AUX	274'	9/K	S	23	N/A	N/A	NO	N/A	N/A		
5024	1, 2	21	1-SS-E-3C	SS/LOOP 3 SGBD HX	11715-FM-079C2/13/E4	AUX	274'	9/K	S	23	N/A	N/A	NO	N/A	N/A		
1230	1, 2	21	1-SS-E-4	HRS/HOT LEG SAMPLE COOLER	11715-FM-089D1/16/D5	AUX	274'	9/K	S	--	N/A	N/A	NO	N/A	N/A	COMPONENT COOLING WATER	
5019	1, 2	21	1-SS-E-5A	SS/GAS STRIPPER LIQUID EFFLUENT HX	11715-FM-079C2/13/E7	AUX	274'	9/K	S	23	N/A	N/A	NO	N/A	N/A		
5020	1, 2	21	1-SS-E-5B	SS/GAS STRIPPER LIQUID EFFLUENT HX	11715-FM-079C2/13/D7	AUX	274'	9/K	S	23	N/A	N/A	NO	N/A	N/A		
4270	1, 2	21	1-SS-E-9	SS/RHR SAMPLE COOLER	11715-FM-089D1/16/E3	AUX	274'	9/K	S	--	N/A	N/A	NO	N/A	N/A	COMPONENT COOLING WATER	
5306	1	21	2-CH-E-5A	CH/CCP LUBE OIL COOLER	11715-FM-078G2/10/D4	AUX	244'	9.2/K	S	--	N/A	N/A	NO	12050-SW-034/2	OIL		
5307	1	21	2-CH-E-5B	CH/CCP LUBE OIL COOLER	11715-FM-078G2/10/D6	AUX	244'	9.5/K	S	--	N/A	N/A	NO	12050-SW-035/2	OIL		
5308	1	21	2-CH-E-5C	CH/CCP LUBE OIL COOLER	11715-FM-078G2/10/D8	AUX	244'	10/K	S	--	N/A	N/A	NO	12050-SW-036/2	OIL		
5492	1	21	2-EG-TK-2H	EG/FUEL OIL DAY TANK	11715-FB-035A2/21/B3	SB	270'	DG	S	--	N/A	N/A	NO	N/A	N/A		



117TH ANNA UNIT 1  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
SEISMIC REVIEW SSEL  
(Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NAI\_SSEL.DBF / 05/21/97 / 09:02:36  
Sort Criteria: Class, ID Number  
Filter Criteria: (Eval. Type CONTAINS 'S')  
Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN	CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION P.A. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DMG. NO./REV.	SYS. REQ'D	INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	
5531	1	21	2-EG-TK-2HA	EG/AIR COMPRESSOR AIR RECEIVER	11715-FM-107A1/09	SB	270'	DG	S	--	N/A	N/A	NO	N/A		N/A	
5532	2	21	2-EG-TK-2HB	EG/AIR COMPRESSOR AIR RECEIVER	11715-FM-107A2/09	SB	270'	DG	S	--	N/A	N/A	NO	N/A		N/A	
5493	2	21	2-EG-TK-2J	EG/FUEL OIL DAY TANK	11715-FB-035A2/21/C5	SB	270'	DG	S	--	N/A	N/A	NO	N/A		N/A	
5533	1	21	2-EG-TK-2JA	EG/AIR COMPRESSOR AIR RECEIVER	11715-FM-107A3/10	SB	270'	DG	S	--	N/A	N/A	NO	N/A		N/A	
5534	2	21	2-EG-TK-2JB	EG/AIR COMPRESSOR AIR RECEIVER	11715-FM-107A4/10	SB	270'	DG	S	--	N/A	N/A	NO	N/A		N/A	
5030	1, 2	21	2-SS-E-14	SS/SG SURFACE HX	11715-FM-079C2/13/B4	AUX	274'	9/K	S	23	N/A	N/A	NO	N/A		N/A	
5027	1, 2	21	2-SS-E-3A	SS/LOOP 1 SGBD HX	11715-FM-079C2/13/C4	AUX	274'	9/K	S	23	N/A	N/A	NO	N/A		N/A	
5025	1, 2	21	2-SS-E-3B	SS/LOOP 2 SGBD HX	11715-FM-079C2/13/E4	AUX	274'	9/K	S	23	N/A	N/A	NO	N/A		N/A	
5023	1, 2	21	2-SS-E-3C	SS/LOOP 3 SGBD HX	11715-FM-079C2/13/F4	AUX	274'	9/K	S	23	N/A	N/A	NO	N/A		N/A	
1264	1, 2	23	1-CR-CRD*	CR*/CONTROL ROD DRIVE MECHANISMS	WESTING 618J795 & 618J796	CONTMT	271'	--	S	1,14,10	N/A	N/A	NO	N/A		N/A	
1280	1, 2	23	1-ND-I10U*	ND*/INCORE INST. DRIVE UNIT	11715-1.26 SERIES	CONTMT	263'	4	S	1,14,44	N/A	N/A	NO	N/A		N/A	
1284	1, 2	23	1-ND-I1G7*	ND*/INCORE INST GUIDE TUBES	11715-1.26 SERIES	CONTMT	217'	4	S	1,14,44	N/A	N/A	NO	N/A		N/A	
1283	1, 2	23	1-ND-I1ST*	ND*/INCORE INST SEAL TABLE	11715-1.26 SERIES	CONTMT	263'	4	S	1,14,44	N/A	N/A	NO	N/A		N/A	
1281	1, 2	23	1-ND-I1T05*	ND*/INCORE INST 5-PATH TRANSFER	11715-1.26 SERIES	CONTMT	263'	4	S	1,14,44	N/A	N/A	NO	N/A		N/A	
1282	1, 2	23	1-ND-I1T10*	ND*/INCORE INST 10-PATH TRANSFER	11715-1.26 SERIES	CONTMT	263'	4	S	1,14,44	N/A	N/A	NO	N/A		N/A	
4002	1	23	1-RC-E-1A	MS/STEAM GENERATOR A	11715-FM-001A/16/C5	CONTMT	291'	2	S	1,14	N/A	N/A	NO	N/A		N/A	
4028	2	23	1-RC-E-1B	MS/STEAM GENERATOR B	11715-FM-001A/16/D4	CONTMT	291'	14	S	1,14	N/A	N/A	NO	N/A		N/A	
4054	3	23	1-RC-E-1C	MS/STEAM GENERATOR C	11715-FM-001A/16/D5	CONTMT	291'	8	S	1,14	N/A	N/A	NO	N/A		N/A	
2007A	1, 2	23	1-RC-E-2	RC/PRESSURIZER	11715-FM-001C/12/D5	CONTMT	283'	9.5	S	1,14	N/A	N/A	NO	N/A		N/A	
1268	1, 2	23	1-RC-ES-1	RC/NEUTRON SHIELD TANK	11715-FM-079B5/11	CONTMT	242'	--	S	1,14	N/A	N/A	NO	N/A		N/A	
1261	1, 2	23	1-RC-FA*	RC/FUEL ASSEMBLIES	11715-5.13 SERIES	CONTMT	242'	--	S	1,14	N/A	N/A	NO	N/A		N/A	
1262	1, 2	23	1-RC-LRI*	RC/LOWER REACTOR INTERNALS	11715-5.11 SERIES	CONTMT	231'	--	S	1,14	N/A	N/A	NO	N/A		N/A	
1269	1, 2	23	1-RC-ND1*	RC/NEUTRON DETECTOR	11715-FM-079B5/11	CONTMT	242'	--	S	1,14,13	N/A	N/A	YES	N/A		N/A	

NORTH ANNA UNIT 1  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 SEISMIC REVIEW SSEL  
 (Sorted by Equipment Class and Mark Number)

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 Sort Criteria: Class, ID Number  
 Filter Criteria: (Eval. Type CONTAINS 'S')  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQD?	SUPPORTING DWG. NO./REV.	SYS. & SUPPORTING COMPONENTS	REQ'D INTERCONNECTIONS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1270	1, 2	23	1-RC-ND2*	RC/NEUTRON DETECTOR	11715-FM-07985/11	CONTMT	242'	--	S	1,14,13	N/A	N/A	YES	N/A	N/A	
1271	1, 2	23	1-RC-ND3*	RC/NEUTRON DETECTOR	11715-FM-07985/11	CONTMT	242'	--	S	1,14,13	N/A	N/A	YES	N/A	N/A	
1272	1, 2	23	1-RC-ND4*	RC/NEUTRON DETECTOR	11715-FM-07985/11	CONTMT	242'	--	S	1,14,13	N/A	N/A	YES	N/A	N/A	
1273	1, 2	23	1-RC-ND5*	RC/NEUTRON DETECTOR	11715-FM-07985/11	CONTMT	242'	--	S	1,14,13	N/A	N/A	YES	N/A	N/A	
1274	1, 2	23	1-RC-ND6*	RC/NEUTRON DETECTOR	11715-FM-07985/11	CONTMT	242'	--	S	1,14,13	N/A	N/A	YES	N/A	N/A	
1275	1, 2	23	1-RC-ND7*	RC/NEUTRON DETECTOR	11715-FM-07985/11	CONTMT	242'	--	S	1,14,13	N/A	N/A	YES	N/A	N/A	
1276	1, 2	23	1-RC-ND8*	RC/NEUTRON DETECTOR	11715-FM-07985/11	CONTMT	242'	--	S	1,14,13	N/A	N/A	YES	N/A	N/A	
3020A	1, 2	23	1-RC-P-1A	RC/REACTOR COOLANT PUMP A	11715-FM-09383/19/E4	CONTMT	262'	1	S R	1,14	ON	OFF	NO	N/A	N/A	
3020B	1, 2	23	1-RC-P-1B	RC/REACTOR COOLANT PUMP B	11715-FM-09383/19/C4	CONTMT	262'	12.5	S R	1,14	ON	OFF	NO	N/A	N/A	
3020C	1, 2	23	1-RC-P-1C	RC/REACTOR COOLANT PUMP C	11715-FM-09383/19/A4	CONTMT	262'	7	S R	1,14	ON	OFF	NO	N/A	N/A	
1260	1, 2	23	1-RC-R-1	RC/REACTOR VESSEL	11715-FM-001G/12/C3	CONTMT	256'	--	S	1,14	N/A	N/A	NO	N/A	N/A	
1263	1, 2	23	1-RC-URI*	RC/UPPER REACTOR INTERNALS	11715-5.11 SERIES	CONTMT	262'	--	S	1,14	N/A	N/A	NO	N/A	N/A	

NORTH ANNA UNIT 2  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
SEISMIC REVIEW SSEL  
(Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA2\_SSEL\_DBF / 05/20/97 / 13:04:12  
Sort Criteria: Class, ID Number  
Filter Criteria: (Eval. Type CONTAINS 'S')  
Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. ST. Normal	OP. ST. Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1152	1	0	1-CH-H-8A	CH/BAST C STRIP HEATER	11715-FM-095A1/22/EB	AUX 260'	11.2/J	S R	--	ON	ON	YES	11715-CH-037/5	N/A	
1153	1	0	1-CH-H-8B	CH/BAST C STRIP HEATER	11715-FM-095A1/22/EB	AUX 260'	11.2/J	S R	--	ON	ON	YES	11715-CH-038/2	N/A	
5261	1	0	1-HV-MOD-135	HV/AIR COND. FAN DISCH. DAMPER	11715-FB-044C3/07/EB	SB 277'	10/D	S		ON	ON	YES	N/A	1-HV-AC-1	
5271	2	0	1-HV-MOD-136	HV/AIR COND. FAN DISCH. DAMPER	11715-FB-044C3/07/EB	SB 277'	10/D	S		ON	ON	YES	N/A	1-HV-AC-2	
5240	1	0	1-HV-MOD-137	HV/AIR COND. FAN DISCH. DAMPER	11715-FB-044C3/07/B7	SB 252'	12/D	S		ON	ON	YES	N/A	1-HV-AC-6	
5250	2	0	1-HV-MOD-138	HV/AIR COND. FAN DISCH. DAMPER	11715-FB-044C3/07/B7	SB 252'	12/D	S		ON	ON	YES	N/A	1-HV-AC-7	
4211A3	0	2-FW-FY-2479	ELECTRO-PNEUMATIC CONTROLLER		MER#2	286'	D/12	S							
4211B3	0	2-FW-FY-2489	ELECTRO-PNEUMATIC CONTROLLER		MER#2	286'	D/12	S							
4211C3	0	2-FW-FY-2499	ELECTRO-PNEUMATIC CONTROLLER		MER#2	286'	D/12	S							
5262	1	0	2-HV-MOD-235	HV/AIR COND. FAN DISCH. DAMPER	11715-FB-044C3/07/EB	SB 277'	10/D	S	36	ON	ON	YES	N/A	2-HV-AC-8	
5272	2	0	2-HV-MOD-236	HV/AIR COND. FAN DISCH. DAMPER	11715-FB-044C3/07/EB	SB 277'	10/D	S	36	ON	ON	YES	N/A	2-HV-AC-9	
5241	1	0	2-HV-MOD-237	HV/AIR COND. FAN DISCH. DAMPER	11715-FB-044C3/07/B7	SB 252'	12/D	S	36	ON	ON	YES	N/A	2-HV-AC-6	
5251	2	0	2-HV-MOD-238	HV/AIR COND. FAN DISCH. DAMPER	11715-FB-044C3/07/B7	SB 252'	12/D	S	36	ON	ON	YES	N/A	2-HV-AC-7	
6015	1	01	2-EP-MC-10	EP/EMERGENCY MCC 2H1-1	12050-FE-001Q1/12/A,	SB 254'	9/C	S R	41	N/A	N/A	YES	N/A	2-EE-SS-01	
6022	2	01	2-EP-MC-11	EP/EMERGENCY MCC 2J1-1	12050-FE-001Q1/12/A,	SB 254'	9/C	S R	41	N/A	N/A	YES	N/A	2-EE-SS-02	
6021	1	01	2-EP-MC-12	EP/EMERGENCY MCC 2H1-1A	12050-FE-001R1/11/A,	EDG 274'	--	S R	--	N/A	N/A	YES	N/A	2-EP-MC-10	
6027	2	01	2-EP-MC-13	EP/EMERGENCY MCC 2J1-1A	12050-FE-001R1/11/G,	2J-EDG 271'	--	S R	--	N/A	N/A	YES	N/A	2-EP-MC-11	
6020	1	01	2-EP-MC-19	EP/EMERGENCY MCC 2H1-2N	12050-FE-001N1/16/E,	AUX 259' 6"	11/J	S R	41	N/A	N/A	YES	N/A	2-EE-SS-03	
6017	1	01	2-EP-MC-20	EP/EMERGENCY MCC 2H1-2S	12050-FE-001N1/16/B,	AUX 259' 6"	11/J	S R	41	N/A	N/A	YES	N/A	2-EE-SS-01	
6024	2	01	2-EP-MC-21	EP/EMERGENCY MCC 2J1-2N	12050-FE-001P1/16/E,	AUX 259' 6"	CABLE TUNNEL	S R	41	N/A	N/A	YES	N/A	2-EP-MC-22	
6023	2	01	2-EP-MC-22	EP/EMERGENCY MCC 2J1-2S	12050-FE-001P1/16/B,	AUX 259' 6"	CABLE TUNNEL	S R	41	N/A	N/A	YES	N/A	2-EE-SS-02	
6018	1	01	2-EP-MC-32	EP/EMERGENCY MCC 2H1-3	12050-FE-001R1/11/A,	SWPH 328'	SWPH	S R	--	N/A	N/A	YES	N/A	2-EE-SS-01	

NORTH ANNA UNIT 2  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
SEISMIC REVIEW SSEL  
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Sort Criteria: Class, ID Number  
Filter Criteria: (Eval. Type CONTAINS 'S')  
Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Fir. Elv.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal?	ST. Desired?	POWER REQD?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10) (11)	(12)	(13)	(14)	(15)	(16)	(17)
6025	2 01	2-EP-MC-33	EP/EMERGENCY MCC 2J1-3	12050-FE-001R1/11/G, SWPH I-1		327'	SWPH	S R	--	N/A	N/A	YES	N/A	2-EE-SS-02	
6016	1 01	2-EP-MC-41	EP/EMERGENCY MCC 2H1-4	12050-FE-001Q1/12/A, SB H-3		254'	9/C	S R	41	N/A	N/A	YES	N/A	2-EE-SS-01	
6019	1 01	2-EP-MC-50	EP/EMERGENCY MCC 2H1-3A	12050-FE-001R1/11/A, SWVH D-7		326'	SWVH	S R	41	N/A	N/A	YES	N/A	2-EP-MC-32	
6026	2 01	2-EP-MC-51	EP/EMERGENCY MCC 2J1-3A	12050-FE-001R1/11/E, SWVH I-7		326'	--	S R	41	N/A	N/A	YES	N/A	2-EP-MC-31	
1252	1 02	2-EE-BKR-BYA	CR*/REACTOR TRIP BREAKER BYPASS A	12050-1.27-402A	AUX	280'	RCD	S R	--	CLOSED	OPEN	YES	N/A	N/A	
1253	2 02	2-EE-BKR-BYB	CR*/REACTOR TRIP BREAKER BYPASS B	12050-1.27-402A	AUX	280'	RCD	S R	--	CLOSED	OPEN	YES	N/A	N/A	
1250	1 02	2-EE-BKR-RTA	CR*/REACTOR TRIP BREAKER A	12050-1.27-402A	AUX	280'	RCD	S R	--	CLOSED	OPEN	YES	N/A	N/A	
1251	2 02	2-EE-BKR-RTB	CR*/REACTOR TRIP BREAKER B	12050-1.27-402A	AUX	280'	RCD	S R	--	CLOSED	OPEN	YES	N/A	N/A	
6011	1 02	2-EE-SS-01	EE/480V EMERGENCY BUS 2H	12050-FE-001A1/10/D7 SB		254'	9/C	S R	41	N/A	N/A	YES	N/A	2-BY-B-01,02;2-EE-ST-2H	
6013	2 02	2-EE-SS-02	EE/480V EMERGENCY BUS 2J	12050-FE-001A1/10/A7 SB		252'	8/C	S R	41	N/A	N/A	YES	N/A	2-BY-B-03,04;2-EE-ST-2J	
6012	1 02	2-EE-SS-03	EE/480V EMERGENCY BUS 2H1	12050-FE-001A1/10/C7 AUX		280'	RCD	S R	--	N/A	N/A	YES	N/A	2-BY-B-01,02;2-EE-ST-03	
6014	2 02	2-EE-SS-04	EE/480V EMERGENCY BUS 2J1	12050-FE-001A1/10/B7 AUX		280'	11/K	S R	--	N/A	N/A	YES	N/A	2-BY-B-03,04;2-EE-ST-02	
6005	1 03	2-EE-SW-01	EE/4KV EMERGENCY BUS 2H (ORANGE)	12050-FE-001A1/10/D5 SB		252'	9/D	S R	41	N/A	N/A	YES	N/A	EDG 2H;2-BY-B-01,-02	
6006	2 03	2-EE-SW-02	EE/4KV EMERGENCY BUS 2J (PURPLE)	12050-FE-001A1/10/A5 SB		252'	8/D	S R	41	N/A	N/A	YES	N/A	EDG 2J;2-BY-B-01,-02	
6007	1 04	2-EE-ST-2H	EE/4160/480 TRANSFORMER 2H	12050-FE-001A1/10/D7 SB		254'	9/D	S R	--	N/A	N/A	YES	N/A	2-EE-SW-01;EDG 2H	
6008	1 04	2-EE-ST-2H1	EE/4160/480 TRANSFORMER 2H1	12050-FE-001A1/10/C7 AUX		280'	RCD	S R	--	N/A	N/A	YES	N/A	2-EE-SW-01;EDG 2H	
6009	2 04	2-EE-ST-2J	EE/4160/480 TRANSFORMER 2J	12050-FE-001A1/10/A7 SB		252'	8/D	S R	--	N/A	N/A	YES	N/A	2-EE-SW-02;EDG 2J	
6010	2 04	2-EE-ST-2J1	EE/4160/480 TRANSFORMER 2J1	12050-FE-001A1/10/B7 AUX		274'	11/D	S R	--	N/A	N/A	YES	N/A	2-EE-SW-02;EDG 2J	
5561*	1 04	2-EE-TRANS-42N-2	/HEAT TRACE TRANSFORMER	11715-FE-001N/16 AFPH		271'	--	S R	--	ON	ON	YES	N/A	N/A	
5562*	2 04	2-EE-TRANS-42R-2	/HEAT TRACE TRANSFORMER	11715-FE-001B/16 AFPH		271'	--	S R	--	ON	ON	YES	N/A	N/A	
6030	2 04	2-EP-TRANS-80-2*	EP/480/120 VOLT. REG. TRANSFORMER (80-2)	12050-FE-001AE1/10/B SB 5		252'	9/D	S R	--	N/A	N/A	YES	N/A	2-EP-MC-11	
6028	1 04	2-TRANS-79A	EP/480/120 VOLT. REG. TRANSFORMER (79A-2)	12050-FE-001AE1/10/L SB 5		254'	9/D	S R	--	N/A	N/A	YES	N/A	2-EP-MC-10	
6029	1 04	2-TRANS-79B	EP/480/120 VOLT. REG. TRANSFORMER (79B-2)	12050-FE-001AE1/10/M SB 5		254'	9/D	S R	--	N/A	N/A	YES	N/A	2-EP-MC-10	

NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 SEISMIC REVIEW SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA2\_SSEL.DBF / 05/20/97 / 13:04:12  
 Sort Criteria: Class, ID Number  
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 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN	CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Fir. Elv.	LOCATION Rm. or Row/Col.	SORT NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING DMG. NO./REV.	SYS. & SUPPORTING COMPONENTS	REQ'D INTERCONNECTIONS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10) (11)	(12)	(13)	(14)	(15)	(16)	(17)	
6031	1	04	TRANS-118-2*	EP/480/120 SEMI-VITAL TRANSFORMER (118-2)	12050-FE-001AE1/10/I SB 3		254'	EMER SWGR	S R --	N/A	N/A	YES	N/A		2-EP-MC-41	
6033	2	04	TRANS-119-2*	EP/480/120 SEMI-VITAL TRANSFORMER (119-2)	12050-FE-001AE1/10/E SB 3		254'	EMER SWGR	S R --	N/A	N/A	YES	N/A		2-EP-MC-22	
6032	1	04	TRANS-70-2*	EP/480/120 SEMI-VITAL TRANSFORMER (70-2)	12050-FE-001AE1/10/I SB ,J-4		284'	CR	S R --	N/A	N/A	YES	N/A		2-EP-MC-10	
6034	2	04	TRANS-71-2*	EP/480/120 SEMI-VITAL TRANSFORMER (71-2)	12050-FE-001AE1/10/E SB 4		284'	CR	S R --	N/A	N/A	YES	N/A		2-EP-MC-11	
1160	2	05	1-CH-P-2C	CH/BORIC ACID TRANSFER PUMP (BATP)	11715-FM-095A1/22/B6 AUX		261'	9.5/HJ	S R --	ON	ON	YES	N/A		N/A	
1161	1	05	1-CH-P-2D	CH/BORIC ACID TRANSFER PUMP (BATP)	11715-FM-095A1/22/B6 AUX		261'	9.5/HJ	S R --	ON	ON	YES	N/A		N/A	
5001	1	05	2-CC-P-1A	CC/COMPONENT COOLING WATER PUMP	11715-FM-079A2/18/E7 AUX		245'	9/H	S R 1	ON	ON	YES	N/A		N/A	
5005	1	05	2-CC-P-1B	CC/COMPONENT COOLING WATER PUMP	11715-FM-079A2/18/D7 AUX		245'	10/H	S R 1	ON	ON	YES	N/A		N/A	
1064	1	05	2-CH-P-1A	CH/CENTRIFUGAL CHARGING PUMP A; (CCP A)	12050-FM-095B2/25/C4 AUX		244'	9/J	S R --	ON	ON	YES	N/A		N/A	
1065	2	05	2-CH-P-1B	CH/CENTRIFUGAL CHARGING PUMP B; (CCP B)	12050-FM-095B2/25/C6 AUX		244'	9.5/J	S R --	ON	ON	YES	N/A		N/A	
1066	3	05	2-CH-P-1C	CH/CENTRIFUGAL CHARGING PUMP C; (CCP C)	12050-FM-095B2/25/C8 AUX		244'	10/J	S R --	ON	ON	YES	N/A		N/A	
4142	1	05	2-FW-P-2	FW/TURBINE-DRIVEN AUXILIARY FEEDWATER PUMP (TDAFWP)	12050-FM-074A3/29/B8 AFPH		274'	--	S --	OFF	RUNNING	YES	12050-FP-2J 12050-FP-2K		N/A	
4135	2	05	2-FW-P-3A	FW/MOTOR-DRIVEN AUXILIARY FEEDWATER PUMP (MDAFWP)	12050-FM-074A3/29/B6 AFPH		275'	--	S R --	OFF	RUNNING	YES	12050-FP-2J 12050-FP-2K		N/A	
4129	2	05	2-FW-P-3B	FW/MOTOR-DRIVEN AUXILIARY FEEDWATER PUMP (MDAFWP)	12050-FM-074A3/29/B5 AFPH		275'	--	S R --	OFF	RUNNING	YES	12050-FP-2J		N/A	
7003	1	05	2-QS-P-1A	QS/QS PUMP A	12050-FM-091A2/19/B5 QSPH		274'	--	S R 1	OFF	ON	YES	N/A		2-EE-SS-03	
7006	2	05	2-QS-P-1B	QS/QS PUMP B	12050-FM-091A2/19/B4 QSPH		274'	--	S R 1	OFF	ON	YES	N/A		2-EE-SS-04	
7037	2	05	2-RS-P-3A	RS/CASING COOLING PUMP A	12050-FM-091B1/10/B7 CSCPH		271'	--	S R 1	OFF	ON	YES	N/A		2-EP-MC-20	
7040	2	05	2-RS-P-3B	RS/CASING COOLING PUMP B	12050-FM-091B1/10/B6 CSCPH		271'	--	S R 1	OFF	ON	YES	N/A		2-EP-MC-22	
7035E	1	05	2-SW-P-5	SW/RADIATION MONITORING PUMP	11715-FM-078B3/21/C8 QSPH		265'	--	S 1	OFF	OFF	NO	N/A		N/A	
7035F	1	05	2-SW-P-6	SW/RADIATION MONITORING PUMP	11715-FM-078B3/21/C6 QSPH		265'	--	S 1	OFF	OFF	NO	N/A		N/A	
7035G	2	05	2-SW-P-7	SW/RADIATION MONITORING PUMP	11715-FM-078B3/21/C5 QSPH		265'	--	S 1	OFF	OFF	NO	N/A		N/A	
7035H	2	05	2-SW-P-8	SW/RADIATION MONITORING PUMP	11715-FM-078B3/21/C4 QSPH		265'	--	S 1	OFF	OFF	NO	N/A		N/A	

NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 SEISMIC REVIEW SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA2 SSEL.DBF / 05/20/97 / 13:04:12  
 Sort Criteria: Class, ID Number  
 Filter Criteria: (Eval. Type CONTAINS 'S')  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elv.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. ST. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
5194	1	06	2-HV-P-20A	HV/CHILLED WATER PUMP	11715-FB-040A2/13	SB	254'	CHILLER RM	S R --	RUNNING	RUNNING	YES	N/A	N/A	
5201	2	06	2-HV-P-20B	HV/CHILLED WATER PUMP	11715-FB-040A2/13	SB	254'	CHILLER RM	S R --	RUNNING	RUNNING	YES	N/A	N/A	
5221	2	06	2-HV-P-20C	HV/CHILLED WATER PUMP	11715-FB-040A2/13/D5	SB	254'	CHILLER RM	S R --	OFF	RUNNING	YES	N/A	N/A	
5226C	1	06	2-HV-P-22A	HV/CR & RELAY ROOM WATER SYSTEM BOOSTER PUMP	11715-FB-040D2/13/E6	SB	254'	CHILLER RM 11/C	S R --	ON	ON	YES	N/A	N/A	
5226D	1	06	2-HV-P-22B	HV/CR & RELAY ROOM WATER SYSTEM BOOSTER PUMP	11715-FB-040D2/13/B6	SB	254'	CHILLER RM 12/C	S R --	ON	ON	YES	N/A	N/A	
5226E	2	06	2-HV-P-22C	HV/CR & RELAY ROOM WATER SYSTEM BOOSTER PUMP	11715-FB-040D2/13/D6	SB	254'	CHILLER RM 11/C	S R --	OFF	ON	YES	N/A	N/A	
4249	1	06	2-RH-P-1A	RH/RHR PUMP A	12050-FM-094A1/15/D7	CONTMT	231'	17.5	S R --	OFF	RUNNING	YES	N/A	N/A	
4252	2	06	2-RH-P-1B	RH/RHR PUMP B	12050-FM-094A1/15/D4	CONTMT	231'	2	S R --	OFF	RUNNING	YES	N/A	N/A	
7012	1	06	2-RS-P-1A	RS/INSIDE RECIRC SPRAY PUMP A	12050-FM-091A3/17/B7	CONTMT	217'	5	S R I	OFF	ON	YES	N/A	2-EE-SS-03	
7017	1	06	2-RS-P-1B	RS/INSIDE RECIRC SPRAY PUMP B	12050-FM-091A3/17/B4	CONTMT	217'	4	S R I	OFF	ON	YES	N/A	2-EE-SS-04	
7023	2	06	2-RS-P-2A	RS/OUTSIDE RECIRC SPRAY PUMP A	12050-FM-091A4/18/B4	SFGD	267'	PUMP CUBICLE	S R I	OFF	ON	YES	N/A	2-EE-SS-01	
7028	2	06	2-RS-P-2B	RS/OUTSIDE RECIRC SPRAY PUMP B	12050-FM-091A4/18/B3	SFGD	267'	PUMP CUBICLE	S R I	OFF	ON	YES	N/A	2-EE-SS-02	
7009	1	06	2-SI-P-1A	SI/LHSI PUMP A	12050-FM-096A1/20/C6	SFGD	255'	--	S R I	OFF	ON	YES	N/A	2-EE-SW-01	
7011	2	06	2-SI-P-1B	SI/LHSI PUMP B	12050-FM-096A1/20/C4	SFGD	255'	--	S R I	OFF	ON	YES	N/A	2-EE-SW-02	
5263	1	07	1-HV-TCV-155	HV/CHILLED WATER CONTROL VALVE	11715-FB-044C3/07/E8	SB	277'	10/D	S R --	OPEN	OPEN	NO	N/A	N/A	
5273	2	07	1-HV-TCV-164	HV/CHILLED WATER CONTROL VALVE	11715-FB-044C3/07/E8	SB	277'	10/D	S R --	OPEN	OPEN	NO	N/A	N/A	
5242	1	07	1-HV-TCV-166	HV/CHILLED WATER CONTROL VALVE	11715-FB-044C3/07/B7	SB	252'	12/D	S R --	OPEN	OPEN	NO	N/A	N/A	
5253	2	07	1-HV-TCV-167	HV/CHILLED WATER CONTROL VALVE	11715-FB-044C3/07/B7	SB	252'	12/D	S R --	OPEN	OPEN	NO	N/A	N/A	
7159	1	07	2-AS-FCV-200A	AS/AIR EJECTOR STM INLET CONTMT ISOL	12050-FM-072A2/19/E5	TB	279'	15/Z	S I	OPEN	CLOSED	NO	12050-AS-003	2-AS-SOV-200A	
7161	1	07	2-AS-FCV-200B	AS/AIR EJECTOR STM INLET CONTMT ISOL	12050-FM-072A2/19/E5	TB	279'	16/C	S I	OPEN	CLOSED	NO	12050-AS-004	2-AS-SOV-200B	
7107	1	07	2-BD-TV-200A	BD/SG BLOWDOWN CONTMT ISOL	12050-FM-098A2/16/C6	AUX	244'	11.5/K	S I	OPEN	CLOSED	NO	12050-BD-001/6	2-BD-SOV-200A	
7109	2	07	2-BD-TV-200B	BD/SG BLOWDOWN CONTMT ISOL	12050-FM-098A2/16/C5	CONTMT	241'	10	S I	OPEN	CLOSED	NO	12050-BD-002/8	2-BD-SOV-200B	
7111	1	07	2-BD-TV-200C	BD/SG BLOWDOWN CONTMT ISOL	12050-FM-098A3/18/C6	AUX	244'	12/J	S I	OPEN	CLOSED	NO	12050-BD-003/6	2-BD-SOV-200C	
7113	2	07	2-BD-TV-200D	BD/SG 1B BLOWDOWN CONTMT ISOL	12050-FM-098A3/18/C5	CONTMT	241'	10	S I	OPEN	CLOSED	NO	12050-BD-004/7	2-BD-SOV-200D	

NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 SEISMIC REVIEW SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA2\_SSEL.DBF / 05/20/97 / 13:04:12  
 Sort Criteria: Class, ID Number  
 Filter Criteria: (Eval. Type CONTAINS 'S')  
 Program File Name & Version: SSEM 2.2

LINE NO.	TRAIN	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr Elv	LOCATION Rm. or Row/Col.	SORT	NOTES	OP Normal	ST Desired	POWER REQD?	SUPPORTING SYS. DMG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
7115	1	07	2-BD-TV-200E	BD/SG IC BLOWDOWN CONTMT ISOL	12050-FM-098A4/18/C6 AUX		244'	12/J	S	I	OPEN	CLOSED	NO	12050-BD-005/6	2-BD-SOV-200E	
7117	2	07	2-BD-TV-200F	BD/SG IC BLOWDOWN CONTMT ISOL	12050-FM-098A4/18/C5 CONTMT		241'	9	S	I	OPEN	CLOSED	NO	12050-BD-006/8	2-BD-SOV-200F	
7211	2	07	2-CC-TV-200A	CC/CC RETURN FROM COOLING COIL CONTMT ISOL	12050-FM-079B3/14/E3 AUX		244'	12/J	S	1,35	OPEN	CLOSED	NO	12050-CC-050	2-CC-SOV-200A	
7213	2	07	2-CC-TV-200B	CC/CC RETURN FROM COOLING COIL CONTMT ISOL	12050-FM-079B3/14/D4 AUX		244'	12/J	S	I	OPEN	CLOSED	NO	12050-CC-051/5	2-CC-SOV-200B	
7215	2	07	2-CC-TV-200C	CC/CC RETURN FROM COOLING COIL CONTMT ISOL	12050-FM-079B3/14/C4 AUX		244'	11.3/L	S	I	OPEN	CLOSED	NO	12050-CC-052/5	2-CC-SOV-200C	
7217	1	07	2-CC-TV-201A	CC/THERMAL BARRIER DISCH CONTMT ISOL	12050-FM-079A1/19/D7 AUX		244'	11.4/K	S	I	OPEN	CLOSED	NO	12050-CC-053/5	2-CC-SOV-201A	
7219	2	07	2-CC-TV-201B	CC/THERMAL BARRIER DISCH CONTMT ISOL	12050-FM-079A1/19/D6 CONTMT		249'	10.5	S	I	OPEN	CLOSED	NO	12050-CC-054/6	2-CC-SOV-201B	
7221	1	07	2-CC-TV-202A	CC/RCP CC RETURN CONTMT ISOL	12050-FM-079A4/16/A5 AUX		244'	11.3/K	S	I	OPEN	CLOSED	NO	12050-CC-055/5	2-CC-SOV-202A	
7223	2	07	2-CC-TV-202B	CC/RCP CC RETURN CONTMT ISOL	12050-FM-079A4/16/A3 CONTMT		250'	10.3	S	I	OPEN	CLOSED	NO	12050-CC-058/6	2-CC-SOV-202B	
7225	1	07	2-CC-TV-202C	CC/RCP CC RETURN CONTMT ISOL	12050-FM-079A3/17/A5 AUX		244'	11.7/K	S	I	OPEN	CLOSED	NO	12050-CC-056/5	2-CC-SOV-202C	
7227	2	07	2-CC-TV-202D	CC/RCP CC RETURN CONTMT ISOL	12050-FM-079A3/17/A3 CONTMT		249'	10.3	S	I	OPEN	CLOSED	NO	12050-CC-059/5	2-CC-SOV-202D	
7229	1	07	2-CC-TV-202E	CC/RCP CC RETURN CONTMT ISOL	12050-FM-079A2/16/A5 AUX		251'	11.8/JK	S	I	OPEN	CLOSED	NO	12050-CC-057/5	2-CC-SOV-202E	
7231	2	07	2-CC-TV-202F	CC/RCP CC RETURN CONTMT ISOL	12050-FM-079A2/16/A3 CONTMT		249'	10.1	S	I	OPEN	CLOSED	NO	12050-CC-060/6	2-CC-SOV-202F	
5058	1	07	2-CC-TV-203A	CC/RHR HX OUTLET CONTMT ISOL	12050-FM-079B1/17/A7 AUX		252'	11/L	S	1,27	OPEN	CLOSED	NO	12050-CC-061/5	2-CC-SOV-203A	
5066	2	07	2-CC-TV-203B	CC/RHR HX OUTLET CONTMT ISOL	12050-FM-079B1/17/B7 AUX		252'	11/L	S	1,27	OPEN	CLOSED	NO	12050-CC-062/5	2-CC-SOV-203B	
7237	1, 2	07	2-CC-TV-204A	CC/RCP CC CONTMT ISOL	12050-FM-079A2/16/E8 AUX		254'	12/J	S	I	OPEN	CLOSED	NO	12050-CC-063/4	2-CC-SOV-204A1 2-CC-SOV-204A2	
7241	1, 2	07	2-CC-TV-204B	CC/RCP CC CONTMT ISOL	12050-FM-079A3/17/E8 AUX		244'	12/J	S	I	OPEN	CLOSED	NO	12050-CC-064/4	2-CC-SOV-204B1 2-CC-SOV-204B2	
7245	1, 2	07	2-CC-TV-204C	CC/RCP CC CONTMT ISOL	12050-FM-079A4/16/E8 AUX		244'	11.5/J	S	I	OPEN	CLOSED	NO	12050-CC-065/4	2-CC-SOV-204C1 2-CC-SOV-204C2	
7249	1	07	2-CC-TV-205A	CC/CC RETURN FROM COOLING COIL CONTMT ISOL	12050-FM-079B3/14/E4 CONTMT		253'	10.5	S	I	OPEN	CLOSED	NO	12050-CC-066/7	2-CC-SOV-205A	
7251	1	07	2-CC-TV-205B	CC/CC RETURN FROM COOLING COIL CONTMT ISOL	12050-FM-079B3/14/D4 CONTMT		250'	9.8	S	I	OPEN	CLOSED	NO	12050-CC-067/6	2-CC-SOV-205B	
7253	1	07	2-CC-TV-205C	CC/CC RETURN FROM COOLING COIL CONTMT ISOL	12050-FM-079B3/14/C4 CONTMT		251'	10.5	S	I	OPEN	CLOSED	NO	12050-CC-068/4	2-CC-SOV-205C	

NORTH ANNA UNIT 2  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
SEISMIC REVIEW SSEL  
(Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA2\_SSEL.DBF / 05/20/97 / 13:04:12  
Sort Criteria: Class, ID Number  
Filter Criteria: (Eval. Type CONTAINS 'S')  
Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1168	2 07	2-CH-FCV-2113A	CH/EAST TO VCT CONTROL	12050-FM-095B1/21/C3	AUX	278'	9.6/J	S	1,3	OPEN	CLOSED	NO	12050-CH-017/9	2-CH-SOV-2113A1 2-CH-SOV-2113A2	
7132	2 07	2-CH-TV-2204B	CH/LETDOWN LINE CONTMT ISOL	12050-FM-095A2/12/B3	AUX	245'	12/J	S	1	OPEN	CLOSED	NO	12050-CH-070/6	2-CH-SOV-2204B	
7139	1 07	2-CV-TV-250A	CV/ATMOS CLEANUP CONTMT ISOL	12050-FM-092A2/14/B4	AUX	244'	12/J	S	1	OPEN	CLOSED	NO	12050-CV-002/5	2-CV-SOV-250A	
7141	2 07	2-CV-TV-250B	CV/ATMOS CLEANUP CONTMT ISOL	12050-FM-092A2/14/B5	AUX	244'	12/J	S	1	OPEN	CLOSED	NO	12050-CV-003/6	2-CV-SOV-250B	
7143	1 07	2-CV-TV-250C	CV/ATMOS CLEANUP CONTMT ISOL	12050-FM-092A2/14/B4	AUX	244'	12/J	S	1	OPEN	CLOSED	NO	12050-CV-004/5	2-CV-SOV-250C	
7145	2 07	2-CV-TV-250D	CV/ATMOS CLEANUP CONTMT ISOL	12050-FM-092A2/14/C5	AUX	244	12/J	S	1	OPEN	CLOSED	NO	12050-CV-005/5	2-CV-SOV-250D	
4210A	07	2-FW-FCV-2478	A MAIN FEED REG VALVE		SB	286'	12/D	S	R	OPEN	CLOSED				
4211A	07	2-FW-FCV-2479	A MAIN FEED REG BYPASS VALVE		SB	286'	12/D	S	R 45	CLOSED	CLOSED				
4210B	07	2-FW-FCV-2488	B MAIN FEED REG VALVE		SB	286'	12/D	S	R	OPEN	CLOSED				
4211B	07	2-FW-FCV-2489	B MAIN FEED REG BYPASS VALVE		SB	286'	12/D	S	R 45	CLOSED	CLOSED				
4210C	07	2-FW-FCV-2498	C MAIN FEED REG VALVE		SB	286'	12/D	S	R	OPEN	CLOSED				
4211C	07	2-FW-FCV-2499	C MAIN FEED REG BYPASS VALVE		SB	286'	12/D	S	R 45	CLOSED	CLOSED				
4172	1 07	2-FW-HCV-200A	FW/AFWP HEADER TO SG A	12050-FM-074A1/27/A5	AFPH	275'	--	S	--	CLOSED	OPEN	NO	12050-FW-055/4	N/A	
4169	2 07	2-FW-HCV-200B	FW/AFWP HEADER TO SG B	12050-FM-074A1/27/A6	AFPH	275'	--	S	--	CLOSED	OPEN	NO	12050-FW-056/4	N/A	
4147	2 07	2-FW-PCV-259A	FW/AFWP TO SG B CONTROL VALVE	12050-FM-074A3/29/FB	AFPH	274'	--	S	--	OPEN	OPEN	NO	12050-FW-053/5	N/A	
4152	2 07	2-FW-PCV-259B	FW/AFWP TO SG C CONTROL VALVE	12050-FM-074A3/29/E8	AFPH	274'	--	S	--	OPEN	OPEN	NO	12050-FW-054/5	N/A	
2038	2 07	2-GN-PCV-225A-1	GN/PZR PORV N2 SUPPLY PRESSURE REDUCING VALVE	11715-FM-105A1/20/B4	CONTMT	308'	5.1	S	--	OPEN	OPEN	NO	N/A	N/A	
2039	2 07	2-GN-PCV-225A-2	GN/PZR PORV N2 SUPPLY PRESSURE REDUCING VALVE	11715-FM-105A1/20/B4	CONTMT	308'	5.1	S	--	OPEN	OPEN	NO	N/A	N/A	
2035	2 07	2-GN-PCV-225A-3	GN/PZR PORV N2 SUPPLY PRESSURE REDUCING VALVE	11715-FM-105A1/20/C4	CONTMT	308'	5	S	--	OPEN	OPEN	NO	N/A	N/A	
2036	1 07	2-GN-PCV-225B-1	GN/PZR PORV N2 SUPPLY PRESSURE REDUCING VALVE	11715-FM-105A1/20/B6	CONTMT	308'	5	S	--	OPEN	OPEN	NO	N/A	N/A	
2037	1 07	2-GN-PCV-225B-2	GN/PZR PORV N2 SUPPLY PRESSURE REDUCING VALVE	11715-FM-105A1/20/B6	CONTMT	308'	5	S	--	OPEN	OPEN	NO	N/A	N/A	
2034	1 07	2-GN-PCV-225B-3	GN/PZR PORV N2 SUPPLY PRESSURE REDUCING VALVE	11715-FM-105A1/20/C6	CONTMT	308'	5	S	--	OPEN	OPEN	NO	N/A	N/A	
1239	1, 2 07	2-HRS-TV-1617	HRS/RC COLD LEG SAMPLE COOLER ISOL	12050-FM-089B1/17/D4	AUX	259'	10.5/L	S	24	CLOSED	OPEN	NO	12050-HRS-005/3	2-HRS-SOV-1617	



NORTH ABMA UNIT 2  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
SEISMIC REVIEW SSEL  
(Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: M2 SSEL DBF / 05/20/97 / 13:04:12  
Sort Criteria: Class, ID Number  
Filter Criteria: (Eval Type CONTAINS 'S')  
Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	DEQ. NO./REV./ZONE	BUILDING	FLR. ELV.	LOCATION	RM. OR ROW/COL.	SORT NOTES	OP ST	DES. REQ'D	DWG. NO./REV.	SUPPORTING COMPONENTS	REG. ISSUE		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1225	1, 2	07	2-HRS-TV-1619	HRS/HOT LEG SAMPLE COOLER INLET ISOL	12050-FM-08981/17/E6 AUX	259'	10.5/JK	S	24	CLOSED	OPEN	NO	12050-HRS-007/3	2-HRS-SOV-1619		
4271	1, 2	07	2-HRS-TV-1621	HRS/SAMPLING SYSTEM ISOL	12050-FM-08981/17/F4 AUX	259'	10.5/L	S	24	CLOSED	OPEN	NO	N/A	2-HRS-SOV-1621		
5264	1	07	2-HV-TCV-255	HV/CHILLED WATER CONTROL VALVE	11715-FB-044C3/07/E8 SB	277'	10/D	S R	--	OPEN	OPEN	NO	N/A	N/A		
5274	2	07	2-HV-TCV-264	HV/CHILLED WATER CONTROL VALVE	11715-FB-044C3/07/E8 SB	277'	10/D	S R	--	OPEN	OPEN	NO	N/A	N/A		
5243	1	07	2-HV-TCV-266	HV/CHILLED WATER CONTROL VALVE	11715-FB-044C3/07/B7 SB	252'	12/D	S R	--	OPEN	OPEN	NO	N/A	N/A		
5254	2	07	2-HV-TCV-267	HV/CHILLED WATER CONTROL VALVE	11715-FB-044C3/07/B7 SB	252'	12/D	S R	--	OPEN	OPEN	NO	N/A	N/A		
7163	1	07	2-LM-TV-200A	LM/LEAKAGE MONITORING CONTMNT ISOL	12050-FM-092A1/15/E7 AUX	259'	11.5/J	S	1	OPEN	CLOSED	NO	12050-LM-001/6	2-LM-SOV-200A		
7165	2	07	2-LM-TV-200B	LM/LEAKAGE MONITORING CONTMNT ISOL	12050-FM-092A1/15/E6 AUX	259'	11.5/J	S	1	OPEN	CLOSED	NO	12050-LM-002/6	2-LM-SOV-200B		
7167	1	07	2-LM-TV-200C	LM/LEAKAGE MONITORING CONTMNT ISOL	12050-FM-092A1/15/E6 AUX	259'	12/JK	S	1	OPEN	CLOSED	NO	12050-LM-003/6	2-LM-SOV-200C		
7169	2	07	2-LM-TV-200D	LM/LEAKAGE MONITORING CONTMNT ISOL	12050-FM-092A1/15/E6 AUX	259'	11.5/K	S	1	OPEN	CLOSED	NO	12050-LM-004/6	2-LM-SOV-200D		
7171	1	07	2-LM-TV-200E	LM/LEAKAGE MONITORING CONTMNT ISOL	12050-FM-092A1/15/F6 AUX	259'	11.5/J	S	1	OPEN	CLOSED	NO	12050-LM-005/6	2-LM-SOV-200E		
7173	2	07	2-LM-TV-200F	LM/LEAKAGE MONITORING CONTMNT ISOL	12050-FM-092A1/15/F5 AUX	259'	11.5/J	S	1	OPEN	CLOSED	NO	12050-LM-006/6	2-LM-SOV-200F		
7175	1	07	2-LM-TV-200G	LM/LEAKAGE MONITORING CONTMNT ISOL	12050-FM-092A1/15/E7 AUX	259'	12/J	S	1	OPEN	CLOSED	NO	12050-LM-007/6	2-LM-SOV-200G		
7177	2	07	2-LM-TV-200H	LM/LEAKAGE MONITORING CONTMNT ISOL	12050-FM-092A1/15/E6 AUX	259'	12/J	S	1	OPEN	CLOSED	NO	12050-LM-008/6	2-LM-SOV-200H		
7179	1	07	2-LK-TV-201A	LM/PRESS SENSOR CONTMNT ISOL	12050-FM-092A1/15/D5 AUX	244'	11/J	S	1	OPEN	CLOSED	NO	12050-LM-017/7	2-LM-SOV-201A		
7181	2	07	2-LM-TV-201B	LM/PRESS SENSOR CONTMNT ISOL	12050-FM-092A1/15/D5 AUX	246'	11/J	S	1	OPEN	CLOSED	NO	12050-LM-018/7	2-LM-SOV-201B		
7183	1	07	2-LM-TV-201C	LM/PRESS SENSOR CONTMNT ISOL	12050-FM-092A1/15/D5 AUX	244'	11/J	S	1	OPEN	CLOSED	NO	12050-LM-017/7	2-LM-SOV-201C		
7185	2	07	2-LM-TV-201D	LM/PRESS SENSOR CONTMNT ISOL	12050-FM-092A1/15/D4 AUX	246'	11/J	S	1	OPEN	CLOSED	NO	12050-LM-018/7	2-LM-SOV-201D		
4014	1	07	2-MS-PCV-201A	MS/SG A ATMOSPHERIC STEAM DUMP VALVE	12050-FM-07081/18/E5 MSVH	309'	--	S R	25	CLOSED	OPEN	NO	12050-MS-231/2; 12050-MS-053/7	INST AIR		
4042	2	07	2-MS-PCV-201B	MS/SG B ATMOSPHERIC STEAM DUMP VALVE	12050-FM-07082/20/E6 MSVH	309'	13/GB	S R	25	CLOSED	OPEN	NO	12050-MS-232/2; 12050-MS-054/7	INST AIR		
4070	3	07	2-MS-PCV-201C	MS/SG C ATMOSPHERIC STEAM DUMP VALVE	12050-FM-07083/19/E5 MSVH	309'	13.3/GA	S R	25	CLOSED	OPEN	NO	12050-MS-233/2	INST AIR		
4009	1	07	2-MS-SV-201A	MS/SG A SAFETY VALVE	12050-FM-07081/18/E6 MSVH	321.5'	12	S	1,8	CLOSED	CLOSED	NO	12050-MS-219/2	N/A		
4037	2	07	2-MS-SV-201B	MS/SG B SAFETY VALVE	12050-FM-07082/20/D6 MSVH	321.5'	13	S	1,8	CLOSED	CLOSED	NO	12050-MS-220/2	N/A		
4065	3	07	2-MS-SV-201C	MS/SG C SAFETY VALVE	12050-FM-07083/19/D6 MSVH	307'	13/GB	S	1,8	CLOSED	CLOSED	NO	12050-MS-221/2	N/A		
4010	1	07	2-MS-SV-202A	MS/SG A SAFETY VALVE	12050-FM-07081/18/E5 MSVH	321.5'	12	S	1,8	CLOSED	CLOSED	NO	12050-MS-222/2	N/A		

NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 SEISMIC REVIEW SSEL  
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 Filter Criteria: (Eval. Type CONTAINS 'S')  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
4038	2	07	2-MS-SV-202B	MS/SG B SAFETY VALVE	12050-FM-070B2/20/D5	MSVH	321.5'	13	S	1,8	CLOSED	CLOSED	NO	12050-MS-223/2	N/A	
4066	3	07	2-MS-SV-202C	MS/SG C SAFETY VALVE	12050-FM-070B3/19/D6	MSVH	307'	13/GB	S	1,8	CLOSED	CLOSED	NO	12050-MS-224/2	N/A	
4011	1	07	2-MS-SV-203A	MS/SG A SAFETY VALVE	12050-FM-070B1/18/E6	MSVH	321.5'	12	S	1,8	CLOSED	CLOSED	NO	N/A	N/A	
4039	2	07	2-MS-SV-203B	MS/SG B SAFETY VALVE	12050-FM-070B2/20/D6	MSVH	321.5'	13	S	1,8	CLOSED	CLOSED	NO	N/A	N/A	
4067	3	07	2-MS-SV-203C	MS/SG C SAFETY VALVE	12050-FM-070B3/19/D6	MSVH	321.5'	13	S	1,8	CLOSED	CLOSED	NO	N/A	N/A	
4012	1	07	2-MS-SV-204A	MS/SG A SAFETY VALVE	12050-FM-070B1/18/E6	MSVH	321.5'	12/GB	S	1,8	CLOSED	CLOSED	NO	12050-MS-225/2	N/A	
4040	2	07	2-MS-SV-204B	MS/SG B SAFETY VALVE	12050-FM-070B2/20/D6	MSVH	321.5'	13	S	1,8	CLOSED	CLOSED	NO	12050-MS-226/2	N/A	
4068	3	07	2-MS-SV-204C	MS/SG C SAFETY VALVE	12050-FM-070B3/19/D6	MSVH	321.5'	13	S	1,8	CLOSED	CLOSED	NO	12050-MS-227/2	N/A	
4013	1	07	2-MS-SV-205A	MS/SG A SAFETY VALVE	12050-FM-070B1/18/E5	MSVH	321.5'	12	S	1,8	CLOSED	CLOSED	NO	12050-MS-228/2	N/A	
4041	2	07	2-MS-SV-205B	MS/SG B SAFETY VALVE	12050-FM-070B2/20/D5	MSVH	321.5'	13	S	1,8	CLOSED	CLOSED	NO	12050-MS-229/2	N/A	
4069	3	07	2-MS-SV-205C	MS/SG C SAFETY VALVE	12050-FM-070B3/19/D5	MSVH	321.5'	13	S	1,8	CLOSED	CLOSED	NO	12050-MS-230/2	N/A	
4017	1, 2	07	2-MS-TV-201A	MS/SG A MSIV	12050-FM-070B1/18/C4	MSVH	285'	--	S	--	OPEN	CLOSED	YES	12050-MS-206/6	2-MS-SOV-201A1,2,3,4,5,6,7	
4045	1, 2	07	2-MS-TV-201B	MS/SG B MSIV	12050-FM-070B2/20/C4	MSVH	285'	13.3/GB	S	--	OPEN	CLOSED	YES	12050-MS-207/6	2-MS-SOV-201B1,2,3,4,5,6,7	
4073	1, 2	07	2-MS-TV-201C	MS/SG C MSIV	12050-FM-070B3/19/C4	MSVH	285'	13.5/GB	S	--	OPEN	CLOSED	YES	12050-MS-208/6	2-MS-SOV-201C1,2,3,4,5,6,7	
7101	1	07	2-MS-TV-209	MS/STEAM DRAIN CONTMT ISOL	12050-FM-070A3/20/D3	MSVH	273'	13/GB	S	1	OPEN	CLOSED	NO	12050-MS-209/6	2-MS-SOV-209A 2-MS-SOV-209B	
7104	1	07	2-MS-TV-210	MS/SG BLOWDOWN CONTMT ISOL	12050-FM-070B3/19/A4	MSVH	271'	12.7/HA	S	1	OPEN	CLOSED	NO	12050-MS-210/2	2-MS-SOV-210A 2-MS-SOV-210B	
4086	1	07	2-MS-TV-211A	MS/TDAFW STEAM ADMISSION	12050-FM-070A3/22/E5	MSVH	274'	13.3/GA	S	--	CLOSED	OPEN	NO	12050-MS-211/8	N/A	
4088	2	07	2-MS-TV-211B	MS/TDAFW STEAM ADMISSION	12050-FM-070A3/22/E4	MSVH	274'	13.3/GA	S	--	CLOSED	OPEN	NO	12050-MS-212/8	N/A	
4102	1, 2	07	2-MS-TV-215	MS/TDAFW TRIP VALVE	12050-FM-070A3/22/C4	AFWPH	274'	13.2/GA	S	--	OPEN	OPEN	NO	12050-MS-213/5	N/A	
2020	2	07	2-RC-PCV-2455C	RC/PZR PORV	12050-FM-093B1/25/D3	CONTMT	308'	5	S	--	CLOSED	OP/CL	NO	12050-RC-108/8	2-GN-SOV-2455C-1/2/3	
2029	2	07	2-RC-PCV-2456	RC/PZR PORV	12050-FM-093B1/25/E3	CONTMT	308'	5.1	S	--	CLOSED	OP/CL	NO	12050-RC-106/6	2-GN-SOV-2456-1/2/3	
2007B	1, 2	07	2-RC-SV-2551A	RC/PRESSURIZER SAFETY VALVE A	12050-FM-093B1/25/E5	CONTMT	316'	9.5	S	1,5	CLOSED	CLOSED	NO	N/A	N/A	
2007C	1, 2	07	2-RC-SV-2551B	RC/PRESSURIZER SAFETY VALVE B	12050-FM-093B1/25/E5	CONTMT	316'	9.5	S	1,5	CLOSED	CLOSED	NO	N/A	N/A	
2007D	1, 2	07	2-RC-SV-2551C	RC/PRESSURIZER SAFETY VALVE C	12050-FM-093B1/25/E6	CONTMT	316'	9.5	S	1,5	CLOSED	CLOSED	NO	N/A	N/A	

NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 SEISMIC REVIEW SSEL  
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 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm or Row/Col	SORT	NOTES	OP. Normal	ST. Desired	POWER REQD?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
4262	2	07	2-RH-FCV-2605	RH/RHR HX BYPASS	12050-FM-094A2/14/C7	CONTMT	217'	1.5	S --	CLOSED	CLOSED	NO	N/A	RACK 2-102	
4260	1, 2	07	2-RH-HCV-2758	RH/RHR HX OUTLET	12050-FM-094A2/14/C5	CONTMT	227'	2	S R --	OPEN	OP/CL	YES	N/A	N/A	
7187	1	07	2-RM-TV-200A	RM/RADIATION MONITORING RETURN CONTMT ISOL	12050-FM-082B2/09/C7	AUX	244'	11.5/JK	S I	OPEN	CLOSED	NO	12050-RM-018/5	2-RM-SOV-200A	
7189	1	07	2-RM-TV-200B	RM/RADIATION MONITORING CONTMT ISOL	12050-FM-082B2/09/D7	AUX	244'	12/J	S I	OPEN	CLOSED	NO	12050-RM-019/5	2-RM-SOV-200B	
7191	2	07	2-RM-TV-200C	RM/RADIATION MONITORING CONTMT ISOL	12050-FM-082B2/09/D8	CONTMT	259'	6	S I	OPEN	CLOSED	NO	12050-RM-020/6	2-RM-SOV-200C	
7192	2	07	2-RM-TV-200D	RM/RADIATION MONITORING RETURN CONTMT ISOL	12050-FM-082B2/09/C7	AUX	245'	11.5/J	S I	OPEN	CLOSED	NO	12050-RM-021/5	2-RM-SOV-200D	
7119	1	07	2-SI-TV-200	SI/NITROGEN HEADER CONTMT ISOL	12050-FM-096B1/17/F3	AUX	246'	11/K	S I	OPEN	CLOSED	NO	12050-SI-034/4	2-SI-SOV-200A 2-SI-SOV-200B	
7122	1	07	2-SI-TV-201	SI/WASTE GAS FILTER CONTMT ISOL	12050-FM-096B1/17/E4	AUX	244'	11/K	S I	OPEN	CLOSED	NO	12050-SI-013/3	2-SI-SOV-201	
7155	1	07	2-VG-TV-200A	VG/PRIMARY VENT HDR CONTMT ISOL	12050-FM-090C1/17/F3	AUX	244'	12/J	S I	OPEN	CLOSED	NO	12050-VG-001/4	2-VG-SOV-200A	
7157	2	07	2-VG-TV-200B	VG/PRIMARY VENT HDR CONTMT ISOL	12050-FM-090C1/17/D3	CONTMT	251'	10	S I	OPEN	CLOSED	NO	12050-VG-002/6	2-VG-SOV-200B	
5057	1	08A	2-CC-MOV-200A	CC/RHR HX OUTLET CONTROL VALVE	12050-FM-079A1/19/B3	CONTMT	234'	14.2	S R 17	CLOSED	OPEN	YES	N/A	N/A	
5065	1	08A	2-CC-MOV-200B	CC/RHR HX OUTLET CONTROL VALVE	12050-FM-079A1/19/A3	CONTMT	230'	14.2	S R 17	CLOSED	OPEN	YES	N/A	N/A	
3049	2	08A	2-CH-MOV-2115B	CH/RWST TO CCP INLET ISOL	12050-FM-095B2/25/B8	AUX	244'	10.6/JK	S R --	CLOSED	OPEN	YES	11715-FP-11P	N/A	
3048	1	08A	2-CH-MOV-2115D	CH/RWST TO CCP INLET ISOL	12050-FM-095B2/25/B8	AUX	244'	10.6/JK	S R --	CLOSED	OPEN	YES	N/A	N/A	
1178	1	08A	2-CH-MOV-2350	CH/EMERGENCY BORATE VALVE	12050-FM-095B1/22/B5	AUX	274'	9.7/JK	S R --	CLOSED	OPEN	YES	11715-FP-11F	N/A	
1124	1	08A	2-CH-MOV-2380	CH/RCP SEALWATER RETURN CONTMT ISOL	12050-FM-095C2/14/F4	CONTMT	248'	9	S R I	OPEN	CLOSED	YES	N/A	2-EP-MC-20	
1137	2	08A	2-CH-MOV-2381	CH/RCP SEAL RETURN CONTMT ISOL	12050-FM-095B1/21/C8	AUX	244'	12/H	S R I	OPEN	CLOSED	YES	N/A	2-EP-MC-22	
4175	2	08A	2-FW-MOV-200A	FW/AFWP HEADER TO SG A	12050-FM-074A1/27/A5	AFPH	275'	--	S R 7	CLOSED	OPEN	YES	12050-FP-2J	N/A	
4167	2	08A	2-FW-MOV-200C	FW/AFWP HEADER TO SG C	12050-FM-074A1/27/A7	AFPH	275'	--	S R 7	CLOSED	OPEN	YES	12050-FP-2J 12050-FP-2K	N/A	
7002	1	08A	2-QS-MOV-200A	QS/QS PUMP INLET ISOL	12050-FM-091A2/19/A3	QSPH	271'	--	S R I	CLOSED	OPEN	YES	12050-FE-1Q1/21	2-EP-MC-20	
3076	1	08A	2-QS-MOV-201A	QS/QUENCH SPRAY PUMP A OUTLET ISOL	12050-FM-091A2/19/D5	QSPH	256'	--	S R I	CLOSED	OPEN	YES	12050-FP-4C	2-EP-MC-19	
3077	2	08A	2-QS-MOV-201B	QS/QUENCH SPRAY PUMP B OUTLET ISOL	12050-FM-091A2/19/E5	QSPH	268'	--	S R I	CLOSED	OPEN	YES	12050-FP-4C	2-EP-MC-21	
3059	1	08A	2-QS-MOV-202A	QS/REFUELING WATER CHEM ADD TANK ISOL	12050-FM-091A1/20/C5	YARD/TUHL	270'	2 FT N OF AFPH	S R I,21	CLOSED	OPEN	YES	12050-FP-7A	2-EP-MC-20	

NORTH ANWA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 SEISMIC REVIEW SSEL  
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LINE NO.	EQUIP TRAIN	CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING DMG. NO./REV.	SYS. & SUPPORTING	REQ'D INTERCONNECTIONS & COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	
3060	2	OBA	2-QS-MOV-202B	QS/REFUELING WATER CHEM ADD TANK ISOL	12050-FM-091A1/20/C6	YARD/TUNL	272'	--	S R	1,21	CLOSED	OPEN	YES	12050-FP-7A		2-EP-MC-22	
3020	1	OBA	2-RC-MOV-2535	RC/PZR PORV BLOCK VALVE	12050-FM-093B1/25/E4	CONTMT	308'	5.1	S R	12	OPEN	OP/CL	YES	N/A		N/A	
3021	1	OBA	2-RC-MOV-2536	RC/PZR PORV BLOCK VALVE	12050-FM-093B1/25/D4	CONTMT	308'	5	S R	12	OPEN	OP/CL	YES	N/A		N/A	
4247	1, 2	OBA	2-RH-MOV-2700	RH/RHR PUMP SUCTION ISOL	12050-FM-094A1/15/A5	CONTMT	241'	16	S R	2	CLOSED	OPEN	YES	N/A		2-RC-PT-2402	
4248	1, 2	OBA	2-RH-MOV-2701	RH/RHR PUMP SUCTION ISOL	12050-FM-094A1/15/A4	CONTMT	231'	16	S R	2	CLOSED	OPEN	YES	N/A		2-RH-PT-2403	
4274	1, 2	OBA	2-RH-MOV-2720A	RH/RHR RETURN ISOL LOOP 2	12050-FM-094A2/14/C3	CONTMT	216'	4.3	S R	--	CLOSED	OPEN	YES	N/A		N/A	
4275	1, 2	OBA	2-RH-MOV-2720B	RH/RHR RETURN ISOL LOOP 3	12050-FM-094A2/14/B3	CONTMT	216'	4	S R	--	CLOSED	OPEN	YES	N/A		N/A	
7039	2	OBA	2-RS-MOV-200A	RS/CASING COOLING PUMP A DISCH ISOL	12050-FM-091B1/10/E7	SFGD	256'	--	S R	1	CLOSED	OPEN	YES	N/A		2-EP-MC-20	
7042	2	OBA	2-RS-MOV-200B	RS/CASING COOLING PUMP B DISCH ISOL	12050-FM-091B1/10/F7	SFGD	256'	--	S R	1	CLOSED	OPEN	YES	N/A		2-EP-MC-21	
1140	1	OBA	2-SI-MOV-2836	SI/CCP TO COLD LEGS 1, 2, 3	12050-FM-096A3/21/C8	AUX	244'	12/J	S R	1,21	CLOSED	OPEN	YES	N/A		2-EP-MC-22	
7009A	1	OBA	2-SI-MOV-2860A	SI/LHSI PUMP A SUMP ISOL	12050-FM-096A1/20/B7	QSPH	267'	3/K	S R	1	CLOSED	OPEN	YES	N/A		2-EP-MC-19	
7011A	2	OBA	2-SI-MOV-2860B	SI/LHSI PUMP B SUMP ISOL	12050-FM-096A1/20/B5	QSPH	244'	--	S R	1	CLOSED	OPEN	YES	N/A		2-EP-MC-21	
1063	1	OBA	2-SI-MOV-2863A	SI/LHSI HDR TO CCPs	12050-FM-096A2/24/C5	AUX	244'	7.6/J	S R	1	CLOSED	OPEN	YES	N/A		2-EP-MC-19	
1063A	2	OBA	2-SI-MOV-2863B	SI/LHSI TO CHARGING PUMP A SUCTION X CONN	12050-FM-095B2/25/B8	AUX	244'	9/J	S R	1	CLOSED	OPEN	YES	N/A		2-EP-MC-21	
2048	1, 2	OBA	2-SI-MOV-2865A	SI/ACCUM OUTLET ISOL	12050-FM-096B1/19/C7	CONTMT	216'	14.8	S R	2,19	OPEN	CLOSED	YES	N/A		2H12N	
4278	1, 2	OBA	2-SI-MOV-2865B	SI/ACCUM OUTLET ISOL	12050-FM-096B2/16/C6	CONTMT	216'	9	S R	2,22	OPEN	CLOSED	YES	N/A		2H12N	
4281	1, 2	OBA	2-SI-MOV-2865C	SI/ACCUM OUTLET ISOL	12050-FM-095B3/17/C6	CONTMT	216'	4.3	S R	2,22	OPEN	CLOSED	YES	N/A		2J12N	
1141	1	OBA	2-SI-MOV-2869A	SI/CCP TO HOT LEGS 1, 2, 3	12050-FM-096A3/21/C8	AUX	244'	12/J	S R	1,21	CLOSED	OPEN	YES	N/A		2-EP-MC-19	
1093	1	OBA	2-SI-MOV-2869B	SI/CCP TO HOT LEGS 1, 2, 3	12050-FM-096A3/21/A8	AUX	244'	12/J	S R	1	CLOSED	OPEN	YES	N/A		2-EP-MC-21	
7014	1	OBA	2-SW-MOV-204A	SW/RECIRC SPRAY COOLER A DISCH ISOL	11715-FM-078B1/20/C4	QSPH	265'	--	S R	1	CLOSED	OPEN	YES	N/A		2-EP-MC-19	
7019	1	OBA	2-SW-MOV-204B	SW/RECIRC SPRAY COOLER B DISCH ISOL	11715-FM-078B1/20/C5	QSPH	265'	--	S R	1	CLOSED	OPEN	YES	N/A		2-EP-MC-21	
7031	2	OBA	2-SW-MOV-204C	SW/RECIRC SPRAY COOLER C DISCH ISOL	11715-FM-078B1/20/C6	QSPH	265'	--	S R	1	CLOSED	OPEN	YES	N/A		2-EP-MC-21	
7026	2	OBA	2-SW-MOV-204D	SW/RECIRC SPRAY COOLER D DISCH ISOL	11715-FM-078B1/20/C7	QSPH	265'	--	S R	1	CLOSED	OPEN	YES	N/A		2-EP-MC-19	

NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 SEISMIC REVIEW SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA2\_SSEL.DBF / 05/20/97 / 13:04:12  
 Sort Criteria: Class, ID Number  
 Filter Criteria: (Eval. Type CONTAINS 'S')  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	EQUIPMENT Fir. Elev.	LOCATION Rm. or Row/Col.	SORT NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
7160	1	08B	2-AS-SOV-200A	AS/AIR EJECTOR STM INLET CONTMT ISOL PILOT	12050-FM-072A2/19/E5 TB	279'	15/Z	S	R	I	AIR	VENT	NO	12050-AS-003	N/A	
7162	1	08B	2-AS-SOV-200B	AS/AIR EJECTOR STM INLET CONTMT ISOL PILOT	12050-FM-072A2/19/E5 TB	279'	16/C	S	R	I	AIR	VENT	NO	12050-AS-004	N/A	
7108	1	08B	2-BD-SOV-200A	BD/SG 1A BLOWDOWN CONTMT ISOL PILOT	12050-FM-098A2/16/D6 AUX	244'	11.5/K	S	R	I	AIR	VENT	NO	12050-BD-001/6	N/A	
7110	2	08B	2-BD-SOV-200B	BD/SG BLOWDOWN CONTMT ISOL PILOT	12050-FM-098A2/16/D5 CONTMT	248'	10	S	R	I	AIR	VENT	NO	12050-BD-002/8	N/A	
7112	1	08B	2-BD-SOV-200C	BD/SG 1B BLOWDOWN CONTMT ISOL PILOT	12050-FM-098A3/18/D6 AUX	244'	12/J	S	R	I	AIR	VENT	NO	12050-BD-003/6	N/A	
7114	2	08B	2-BD-SOV-200D	BD/SG 1B BLOWDOWN CONTMT ISOL PILOT	12050-FM-098A3/18/D5 CONTMT	241'	10	S	R	I	AIR	VENT	NO	12050-BD-004/7	N/A	
7116	1	08B	2-BD-SOV-200E	BD/SG 1C BLOWDOWN CONTMT ISOL PILOT	12050-FM-098A4/18/D6 AUX	244'	12/J	S	R	I	AIR	VENT	NO	12050-BD-005/6	N/A	
7118	2	08B	2-BD-SOV-200F	BD/SG 1C BLOWDOWN CONTMT ISOL PILOT	12050-FM-098A4/18/D5 CONTMT	241'	9	S	R	I	AIR	VENT	NO	12050-BD-006/8	N/A	
7212	2	08B	2-CC-SOV-200A	CC/CC RETURN FROM COOLING CONTMT ISOL PILOT	12050-FM-079B3/14/E3 AUX	244'	12/J	S	R	I,35	AIR	VENT	NO	12050-CC-050	N/A	
7214	2	08B	2-CC-SOV-200B	CC/CC RETURN FROM COOLING COIL CONTMT ISOL PILOT	12050-FM-079B3/14/D4 AUX	244'	12/J	S	R	I	AIR	VENT	NO	12050-CC-051/5	N/A	
7216	2	08B	2-CC-SOV-200C	CC/CC RETURN FROM COOLING COIL CONTMT ISOL PILOT	12050-FM-079B3/14/C4 AUX	244'	11.3/L	S	R	I	AIR	VENT	NO	12050-CC-052/5	N/A	
7218	1	08B	2-CC-SOV-201A	CC/THERMAL BARRIER DISCH CONTMT ISOL PILOT	12050-FM-079A1/19/D7 AUX	244'	11.4/K	S	R	I	AIR	VENT	NO	12050-CC-053/5	N/A	
7220	2	08B	2-CC-SOV-201B	CC/THERMAL BARRIER DISCH CONTMT ISOL PILOT	12050-FM-079A1/19/D6 CONTMT	249'	10.5	S	R	I	AIR	VENT	NO	12050-CC-054/6	N/A	
7222	1	08B	2-CC-SOV-202A	CC/RCP CC RETURN CONTMT ISOL PILOT	12050-FM-079A4/16/B6 AUX	244'	11.3/K	S	R	I	AIR	VENT	NO	12050-CC-055/5	N/A	
7224	2	08B	2-CC-SOV-202B	CC/RCP CC RETURN CONTMT ISOL PILOT	12050-FM-079A4/16/A3 CONTMT	250'	10.3	S	R	I	AIR	VENT	NO	12050-CC-058/6	N/A	
7226	1	08B	2-CC-SOV-202C	CC/RCP CC RETURN CONTMT ISOL PILOT	12050-FM-079A3/17/B6 AUX	244'	11.7/K	S	R	I	AIR	VENT	NO	12050-CC-056/5	N/A	
7228	2	08B	2-CC-SOV-202D	CC/RCP CC RETURN CONTMT ISOL PILOT	12050-FM-079A3/17/A3 CONTMT	249'	10.3	S	R	I	AIR	VENT	NO	12050-CC-059/5	N/A	
7230	1	08B	2-CC-SOV-202E	CC/RCP CC RETURN CONTMT ISOL PILOT	12050-FM-079A2/16/B6 AUX	251'	11.8/JK	S	R	I	AIR	VENT	NO	12050-CC-057/5	N/A	
7232	2	08B	2-CC-SOV-202F	CC/RCP CC RETURN CONTMT ISOL PILOT	12050-FM-079A2/16/A3 CONTMT	249'	10.1	S	R	I	AIR	VENT	NO	12050-CC-060/6	N/A	
5059	1	08B	2-CC-SOV-203A	CC/RHR HX OUTLET CONTMT ISOL PILOT	12050-FM-079B1/17/B7 AUX	252'	11/L	S	R	I,27	AIR	VENT	NO	12050-CC-061/5	N/A	
5067	2	08B	2-CC-SOV-203B	CC/RHR HX OUTLET CONTMT ISOL PILOT	12050-FM-079B1/17/C7 AUX	252'	11/L	S	R	I,27	AIR	VENT	NO	12050-CC-062/5	N/A	

NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 SEISMIC REVIEW SSEL  
 (Sorted by Equipment Class and Mark Number)

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 Sort Criteria: Class, ID Number  
 Filter Criteria: (Eval. Type CONTAINS 'S')  
 Program File Name & Version: SSEM 2.2

LINE NO.	TRAIN	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elv.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQD?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
7238	1	08B	2-CC-SOV-204A1	CC/RCP CC CONTMT ISOL PILOT	12050-FM-079A2/16/E8	AUX	254'	12/J	S	R I	AIR	VENT	NO	12050-CC-063/4	N/A	
7239	2	08B	2-CC-SOV-204A2	CC/RCP CC CONTMT ISOL PILOT	12050-FM-079A2/16/E8	AUX	254'	12/J	S	R I	AIR	VENT	NO	12050-CC-063/4	N/A	
7242	1	08B	2-CC-SOV-204B1	CC/RCP CC CONTMT ISOL PILOT	12050-FM-079A3/17/E8	AUX	244'	12/J	S	R I	AIR	VENT	NO	12050-CC-064/4	N/A	
7243	2	08B	2-CC-SOV-204B2	CC/RCP CC CONTMT ISOL PILOT	12050-FM-079A3/17/E8	AUX	244'	12/J	S	R I	AIR	VENT	NO	12050-CC-064/4	N/A	
7246	1	08B	2-CC-SOV-204C1	CC/RCP CC CONTMT ISOL PILOT	12050-FM-079A4/16/E8	AUX	244'	11.5/J	S	R I	AIR	VENT	NO	12050-CC-065/4	N/A	
7247	2	08B	2-CC-SOV-204C2	CC/RCP CC CONTMT ISOL PILOT	12050-FM-079A4/16/E8	AUX	244'	11.5/J	S	R I	AIR	VENT	NO	12050-CC-065/4	N/A	
7250	1	08B	2-CC-SOV-205A	CC/CC RETURN FROM COOLING COIL CONTMT ISOL PILOT	12050-FM-079B3/14/E4	CONTMT	253'	10.5	S	R I	AIR	VENT	NO	12050-CC-066/7	N/A	
7252	1	08B	2-CC-SOV-205B	CC/CC RETURN FROM COOLING COIL CONTMT ISOL PILOT	12050-FM-079B3/14/D4	CONTMT	250'	9.8	S	R I	AIR	VENT	NO	12050-CC-067/6	N/A	
7254	1	08B	2-CC-SOV-205C	CC/CC RETURN FROM COOLING COIL CONTMT ISOL PILOT	12050-FM-079B3/14/C4	CONTMT	251'	10.5	S	R I	AIR	VENT	NO	12050-CC-068/4	N/A	
1170	2	08B	2-CH-SOV-2113A1	CH/BAST TO VCT CONTROL PILOT	12050-CH-017/9	AUX	278'	9.6/J	S	R I	AIR	VENT	NO	12050-CH-017/9	2-EP-CB-26A	
1171	2	08B	2-CH-SOV-2113A2	CH/BAST TO VCT CONTROL PILOT	12050-CH-017/9	AUX	278'	9.6/J	S	R I	AIR	VENT	NO	12050-CH-017/9	2-EP-CB-26A	
7132A	2	08B	2-CH-SOV-2204B	CH/LETDOWN LINE CONTMT ISOL PILOT	12050-CH-070/6	AUX	245'	12/F	S	R I	AIR	VENT	NO	12050-CH-070/6	N/A	
7140	1	08B	2-CV-SOV-250A	CV/ATMOS CLEANUP CONTMT ISOL PILOT	12050-FM-092A2/14/B4	AUX	244'	12/J	S	R I	AIR	VENT	NO	12050-CV-002/5	N/A	
7142	2	08B	2-CV-SOV-250B	CV/ATMOS CLEANUP CONTMT ISOL PILOT	12050-FM-092A2/14/B5	AUX	244'	12/J	S	R I	AIR	VENT	NO	12050-CV-003/6	N/A	
7144	1	08B	2-CV-SOV-250C	CV/ATMOS CLEANUP CONTMT ISOL PILOT	12050-FM-092A2/14/C4	AUX	244'	12/J	S	R I	AIR	VENT	NO	12050-CV-004/5	N/A	
7146	2	08B	2-CV-SOV-250D	CV/ATMOS CLEANUP CONTMT ISOL PILOT	12050-FM-092A2/14/C5	AUX	244'	12/J	S	R I	AIR	VENT	NO	12050-CV-005/5	N/A	
4210A1		08B	2-FW-SOV-2478-1	SOLENOID OPERATED VALVE		SB	286'	12/D	S	R						
4210A2		08B	2-FW-SOV-2478-2	SOLENOID OPERATED VALVE		SB	286'	12/D	S	R						
4211A1		08B	2-FW-SOV-2479-1	SOLENOID OPERATED VALVE		SB	286'	12/D	S	R						
4211A2		08B	2-FW-SOV-2479-2	SOLENOID OPERATED VALVE		SB	286'	12/D	S	R						
4210B1		08B	2-FW-SOV-2488-1	SOLENOID OPERATED VALVE		SB	286'	12/D	S	R						
4210B2		08B	2-FW-SOV-2488-2	SOLENOID OPERATED VALVE		SB	286'	12/D	S	R						
4211B1		08B	2-FW-SOV-2489-1	SOLENOID OPERATED VALVE		SB	286'	12/D	S	R						
4211B2		08B	2-FW-SOV-2489-2	SOLENOID OPERATED VALVE		SB	286'	12/D	S	R						
4210C1		08B	2-FW-SOV-2498-1	SOLENOID OPERATED VALVE		SB	286'	12/D	S	R						

NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 SEISMIC REVIEW SSEL  
 (Sorted by Equipment Class and Mark Number)

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 Sort Criteria: Class, ID Number  
 Filter Criteria: (Eval. Type CONTAINS 'S')  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. Dwg. No./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10) (11)	(12)	(13)	(14)	(15)	(16)	(17)
4210C2	08B	2-FW-SOV-2498-2	SOLENOID OPERATED VALVE		SB	286'	12/D	S R						
4211C1	08B	2-FW-SOV-2499-1	SOLENOID OPERATED VALVE		SB	286'	12/D	S R						
4211C2	08B	2-FW-SOV-2499-2	SOLENOID OPERATED VALVE		SB	286'	12/D	S R						
1240	1, 2	08B	2-HRS-SOV-1617	HRS/RC COLD LEG SAMPLE COOLER ISOL PILOT	12050-FM-08981/17/D5 AUX	259'	10.5/L	S R 24	VENT	AIR	YES	12050-HRS-005/3	INST AIR	
1226	1, 2	08B	2-HRS-SOV-1619	HRS/HOT LEG SAMPLE COOLER INLET ISOL PILOT	12050-FM-08981/17/E6 AUX	259'	10.5/JK	S R 24	VENT	AIR	YES	12050-HRS-007/3	INST AIR	
4272	1, 2	08B	2-HRS-SOV-1621	HRS/SAMPLING SYSTEM ISOL PILOT	12050-FM-08981/17/F4 AUX	259'	10.5/L	S R 24	VENT	AIR	YES	N/A	INST AIR	
5235	1	08B	2-HV-SOV-2200A	HV/CND WTR PUMP SEAL FLOW CONTROL	11715-FB-04002/13	SB	256'	CHILLER RM	S R --	OP/CL	OPEN	YES	N/A	N/A
5236	1	08B	2-HV-SOV-2200B	HV/CND WTR PUMP SEAL FLOW CONTROL	11715-FB-04002/13	SB	256'	CHILLER RM	S R --	OP/CL	OPEN	YES	N/A	N/A
5237	2	08B	2-HV-SOV-2200C	HV/CND WTR PUMP SEAL FLOW CONTROL	11715-FB-04002/13	SB	256'	CHILLER RM	S R --	OP/CL	OPEN	YES	N/A	N/A
7164	1	08B	2-LM-SOV-200A	LM/LEAKAGE MONITORING CONTMT ISOL PILOT	12050-FM-092A1/15/F7 AUX	259'	11.5/J	S R I	AIR	VENT	NO	12050-LM-001/6	N/A	
7166	2	08B	2-LM-SOV-200B	LM/LEAKAGE MONITORING CONTMT ISOL PILOT	12050-FM-092A1/15/F6 AUX	259'	11.5/J	S R I	AIR	VENT	NO	12050-LM-002/6	N/A	
7168	1	08B	2-LM-SOV-200C	LM/LEAKAGE MONITORING CONTMT ISOL PILOT	12050-FM-092A1/15/F6 AUX	259'	12/JK	S R I	AIR	VENT	NO	12050-LM-003/6	N/A	
7170	2	08B	2-LM-SOV-200D	LM/LEAKAGE MONITORING CONTMT ISOL PILOT	12050-FM-092A1/15/F5 AUX	259'	11.5/K	S R I	AIR	VENT	NO	12050-LM-004/6	N/A	
7172	1	08B	2-LM-SOV-200E	LM/LEAKAGE MONITORING CONTMT ISOL PILOT	12050-FM-092A1/15/F6 AUX	259'	11.5/J	S R I	AIR	VENT	NO	12050-LM-005/6	N/A	
7174	2	08B	2-LM-SOV-200F	LM/LEAKAGE MONITORING CONTMT ISOL PILOT	12050-FM-092A1/15/F5 AUX	259'	11.5/J	S R I	AIR	VENT	NO	12050-LM-006/6	N/A	
7176	1	08B	2-LM-SOV-200G	LM/LEAKAGE MONITORING CONTMT ISOL PILOT	12050-FM-092A1/15/F6 AUX	259'	12/J	S R I	AIR	VENT	NO	12050-LM-007/6	N/A	
7178	2	08B	2-LM-SOV-200H	LM/LEAKAGE MONITORING CONTMT ISOL PILOT	12050-FM-092A1/15/F6 AUX	259'	12/J	S R I	AIR	VENT	NO	12050-LM-008/6	N/A	
7180	1	08B	2-LM-SOV-201A	LM/PRESS SENSOR CONTMT ISOL PILOT	12050-FM-092A1/15/D5 AUX	244'	11/J	S R I	AIR	VENT	NO	12050-LM-017/7	N/A	
7182	2	08B	2-LM-SOV-201B	LM/PRESS SENSOR CONTMT ISOL PILOT	12050-FM-092A1/15/D5 AUX	246'	11/J	S R I	AIR	VENT	NO	12050-LM-018/7	N/A	
7184	1	08B	2-LM-SOV-201C	LM/PRESS SENSOR CONTMT ISOL PILOT	12050-FM-092A1/15/D5 AUX	244'	11/J	S R I	AIR	VENT	NO	12050-LM-017/7	N/A	
7186	2	08B	2-LM-SOV-201D	LM/PRESS SENSOR CONTMT ISOL PILOT	12050-FM-092A1/15/D5 AUX	246'	11/J	S R I	AIR	VENT	NO	12050-LM-018/7	N/A	
4018	1, 2	08B	2-MS-SOV-201A1	MS/SG A MSIV PILOT VALVE	12050-FM-07081/18/E4 QSPH	281'	13/GB	S R --	AIR	VENT	YES	12050-MS-206/6	N/A	

NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 SEISMIC REVIEW SSEL  
 (Sorted by Equipment Class and Mark Number)

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 Program File Name & Version: SSEM 2.2

LINE NO.	TRAIN	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elv.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQD?	SUPPORTING DWG. NO./REV.	REQ'D INTERCONNECTING SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
4019	1, 2	08B	2-MS-SOV-201A2	MS/SG A MSIV PILOT VALVE	12050-FM-070B1/18/E4	QSPH	281'	13/GB	S R	--	AIR	VENT	YES	12050-MS-206/6	N/A	
4020	1, 2	08B	2-MS-SOV-201A4	MS/SG A MSIV PILOT VALVE	12050-FM-070B1/18/E3	QSPH	281'	13/GB	S R	--	AIR	VENT	YES	12050-MS-206/6	N/A	
4021	1, 2	08B	2-MS-SOV-201A5	MS/SG A MSIV PILOT VALVE	12050-FM-070B1/18/E3	QSPH	281'	13/GB	S R	--	AIR	VENT	YES	12050-MS-206/6	N/A	
4022	1, 2	08B	2-MS-SOV-201A6	MS/SG A MSIV PILOT VALVE	12050-FM-070B1/18/F4	QSPH	281'	13.6/GA	S R	--	AIR	VENT	YES	12050-MS-206/6	N/A	
4023	1, 2	08B	2-MS-SOV-201A7	MS/SG A MSIV PILOT VALVE	12050-FM-070B1/18/D3	QSPH	281'	13.6/GA	S R	--	AIR	VENT	YES	12050-MS-206/6	N/A	
4046	1, 2	08B	2-MS-SOV-201B1	MS/SG B MSIV PILOT VALVE	12050-FM-070B2/20/E4	QSPH	281'	13.6/GB	S R	--	AIR	VENT	YES	12050-MS-207/6	N/A	
4047	1, 2	08B	2-MS-SOV-201B2	MS/SG B MSIV PILOT VALVE	12050-FM-070B2/20/E4	QSPH	281'	13.6/GB	S R	--	AIR	VENT	YES	12050-MS-207/6	N/A	
4048	1, 2	08B	2-MS-SOV-201B4	MS/SG B MSIV PILOT VALVE	12050-FM-070B2/20/E3	QSPH	281'	13.6/GB	S R	--	AIR	VENT	YES	12050-MS-207/6	N/A	
4049	1, 2	08B	2-MS-SOV-201B5	MS/SG B MSIV PILOT VALVE	12050-FM-070B2/20/E3	QSPH	281'	13.6/GB	S R	--	AIR	VENT	YES	12050-MS-207/6	N/A	
4050	1, 2	08B	2-MS-SOV-201B6	MS/SG B MSIV PILOT VALVE	12050-FM-070B2/20/E4	QSPH	281'	13.6/GB	S R	--	AIR	VENT	YES	12050-MS-207/6	N/A	
4051	1, 2	08B	2-MS-SOV-201B7	MS/SG B MSIV PILOT VALVE	12050-FM-070B2/20/F4	QSPH	281'	13.6/GB	S R	--	AIR	VENT	YES	12050-MS-207/6	N/A	
4074	1, 2	08B	2-MS-SOV-201C1	MS/SG C MSIV PILOT VALVE	12050-FM-070B3/19/D4	QSPH	281'	13.6/GB	S R	--	AIR	VENT	YES	12050-MS-208/6	N/A	
4075	1, 2	08B	2-MS-SOV-201C2	MS/SG C MSIV PILOT VALVE	12050-FM-070B3/19/D4	QSPH	281'	13.6/GB	S R	--	AIR	VENT	YES	12050-MS-208/6	N/A	
4076	1, 2	08B	2-MS-SOV-201C4	MS/SG C MSIV PILOT VALVE	12050-FM-070B3/19/D4	QSPH	276'	13.6/GB	S R	--	AIR	VENT	YES	12050-MS-208/6	N/A	
4077	1, 2	08B	2-MS-SOV-201C5	MS/SG C MSIV PILOT VALVE	12050-FM-070B3/19/D4	QSPH	276'	13.6/GB	S R	--	AIR	VENT	YES	12050-MS-208/6	N/A	
4078	1, 2	08B	2-MS-SOV-201C6	MS/SG C MSIV PILOT VALVE	12050-FM-070B3/19/D4	QSPH	276'	13.6/GB	S R	--	AIR	VENT	YES	12050-MS-208/6	N/A	
4079	1, 2	08B	2-MS-SOV-201C7	MS/SG C MSIV PILOT VALVE	12050-FM-070B3/19/D4	QSPH	276'	13.6/GB	S R	--	AIR	VENT	YES	12050-MS-208/6	N/A	
7102	1	08B	2-MS-SOV-209A	MS/STEAM DRAIN CONTMT ISOL PILOT	12050-FM-070A3/20/D4	MSVH	273'	13/GB	S R	I,5,36	AIR	VENT	NO	12050-MS-209/6	N/A	
7103	1	08B	2-MS-SOV-209B	MS/STEAM DRAIN CONTMT ISOL PILOT	12050-FM-070A3/20/D3	MSVH	273'	13/GB	S R	I,5,36	AIR	VENT	NO	12050-MS-209/6	N/A	
7105	1	08B	2-MS-SOV-210A	MS/SG BLOWDOWN CONTMT ISOL PILOT	12050-FM-070B3/19/A4	MSVH	271'	12.8/HA	S R	I	AIR	VENT	NO	12050-MS-210/2	N/A	
7106	1	08B	2-MS-SOV-210B	MS/SG BLOWDOWN CONTMT ISOL PILOT	12050-FM-070B3/19/A4	MSVH	271'	12.8/HA	S R	I	AIR	VENT	NO	12050-MS-210/2	N/A	
4087	1	08B	2-MS-SOV-211A	MS/TDAFW STEAM ADMISSION PILOT	12050-FM-070A3/22/E5	QSPH	252'	12.8/G	S R	--	AIR	VENT	YES	12050-MS-211/8	N/A	
4089	2	08B	2-MS-SOV-211B	MS/TDAFW STEAM ADMISSION PILOT	12050-FM-070A3/22/E4	QSPH	252'	12.8/G	S R	--	AIR	VENT	YES	12050-MS-212/8	N/A	
2021	2	08B	2-RC-SOV-2455C-1	GN/PZR PORV PILOT	11715-FM-105A1/20/C6	CONTMT	308'	5	S R	33	VENT	AIR	YES	N/A	N/A	
2022	2	08B	2-RC-SOV-2455C-2	GN/PZR PORV PILOT	11715-FM-105A1/20/C6	CONTMT	308'	5	S R	33	VENT	AIR	YES	N/A	N/A	
2023	2	08B	2-RC-SOV-2455C-3	GN/PZR PORV PILOT	11715-FM-105A1/20/C6	CONTMT	308'	5	S R	33	AIR	VENT	YES	N/A	N/A	
2031	2	08B	2-RC-SOV-2456-1	GN/PZR PORV PILOT	11715-FM-105A1/20/C5	CONTMT	308'	5.1	S R	33	VENT	AIR	YES	N/A	N/A	



NORTH ANNA UNIT 2  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
SEISMIC REVIEW SSEL  
(Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA2\_SSEL.DBF / 05/20/97 / 13:04:12  
Sort Criteria: Class, ID Number  
Filter Criteria: (Eval. Type CONTAINS 'S')  
Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN	CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQD?	SUPPORTING SYS. DWG. NO./REV.	REQ'D & SUPPORTING COMPONENTS	INTERCONNECTIONS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	
2032	2	08B	2-RC-SOV-2456-2	GN/PZR PORV PILOT	11715-FM-105A1/20/C5	CONTMT	308'	5.1	S R	33	VENT	AIR	YES	N/A	N/A		
2033	2	08B	2-RC-SOV-2456-3	GN/PZR PORV PILOT	11715-FM-105A1/20/C4	CONTMT	308'	5.1	S R	33	AIR	VENT	YES	N/A	N/A		
7188	1	08B	2-RM-SOV-200A	RM/RADIATION MONITORING RETURN CONTMT ISOL PILOT	12050-FM-082B2/09/C7	AUX	245'	11.5/JK	S R	I	AIR	VENT	NO	12050-RM-018/5	N/A		
7190	1	08B	2-RM-SOV-200B	RM/RADIATION MONITORING CONTMT ISOL PILOT	12050-FM-082B2/09/D7	AUX	244'	12/J	S R	I	AIR	VENT	NO	12050-RM-019/5	N/A		
7191A	2	08B	2-RM-SOV-200C	RM/RADIATION MONITORING CONTMT ISOL PILOT	12050-FM-082B2/09/D8	CONTMT	259'	6	S R	I	AIR	VENT	NO	12050-RM-020/6	N/A		
7192A	2	08B	2-RM-SOV-200D	RM/RADIATION MONITORING RETURN CONTMT ISOL PILOT	12050-FM-082B2/09/C7	AUX	245'	11.5/J	S R	I	AIR	VENT	NO	12050-RM-021/5	N/A		
7123A	1	08B	2-SI-SOV-200A	SI/NITROGEN HEADER CONTMT ISOL PILOT	12050-SI-034/4	AUX	246'	11.5/JK	S R	I	AIR	VENT	NO	12050-SI-034/4	N/A		
7123B	1	08B	2-SI-SOV-200B	SI/NITROGEN HEADER CONTMT ISOL PILOT	12050-SI-034/4	AUX	243'	11.5/JK	S R	I	AIR	VENT	NO	12050-SI-034/4	N/A		
7124	1	08B	2-SI-SOV-201	SI/WASTE GAS FILTER CONTMT ISOL PILOT	12050-FM-096B1/17/E4	AUX	244'	11/K	S R	I	AIR	VENT	NO	12050-SI-013/3	N/A		
1235	1, 2	08B	2-SS-TV-202A	SS/COLD LEG SAMPLE HEADER ISOL	12050-FM-089B1/17/D6	CONTMT	241' A	9.5	S R	A,40	CLOSED	OP/CL	YES	12050-SS-005/6; 12050-FK-1D	N/A		
1236	1, 2	08B	2-SS-TV-202B	SS/RC COLD LEG SAMPLE ISOL	12050-FM-089B1/17/D6	AUX	245'	11.5/JK	S R	A,40	CLOSED	OP/CL	YES	12050-SS-006/6	N/A		
4267	1, 2	08B	2-SS-TV-203A	SS/SAMPLING SYSTEM ISOL	12050-FM-089B1/17/F7	CONTMT	241'	9	S R	A,40	CLOSED	OP/CL	YES	N/A	N/A		
4268	1, 2	08B	2-SS-TV-203B	SS/SAMPLING SYSTEM ISOL	12050-FM-089B1/17/F5	AUX	245'	12/F	S R	A,40	CLOSED	OP/CL	YES	N/A	N/A		
1223	1, 2	08B	2-SS-TV-206A	SS/HOT LEG SAMPLE HEADER ISOL	12050-FM-089B1/17/E6	CONTMT	241'	9.5	S R	A,40	CLOSED	OP/CL	YES	12050-SS-015/5; 12050-FK-1D	N/A		
1224	1, 2	08B	2-SS-TV-206B	SS/HOT LEG SAMPLE ISOL	12050-FM-089B1/17/E6	AUX	245'	11.5/JK	S R	A,40	CLOSED	OP/CL	YES	12050-SS-010/5; 12050-SS-011/5	N/A		
4265	1, 2	08B	2-SS-TV-207A	SS/RHR HX OUTLET TO SAMPLING SYSTEM	12050-FM-089B1/17/F8	CONTMT	232'	4	S R	--	CLOSED	OPEN	YES	N/A	N/A		
4266	1, 2	08B	2-SS-TV-207B	SS/RHR HX OUTLET TO SAMPLING SYSTEM	12050-FM-089B1/17/F8	CONTMT	232'	1	S R	--	CLOSED	OPEN	YES	N/A	N/A		
1222	1, 2	08B	2-SS-TV-208D	SS/HOT LEG SAMPLE ISOL	12050-FM-089B1/17/D8	CONTMT	243' C	8.5	S R	--	CLOSED	OPEN	YES	12050-SS-017/6	N/A		
1230	1, 2	08B	2-SS-TV-209A	SS/COLD LEG SAMPLE ISOL	12050-FM-089B1/17/D8	CONTMT	241' CA	14	S R	--	CLOSED	OPEN	NO	12050-SS-018/5	N/A		
7156	1	08B	2-VG-SOV-200A	VG/PRIMARY VENT HDR CONTMT ISOL PILOT	12050-FM-090C1/17/F4	AUX	244'	12/J	S R	I	AIR	VENT	NO	12050-VG-001/4	N/A		

NORTH ANNA UNIT 2  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
SEISMIC REVIEW SSEL  
(Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA2\_SSEL.DBF / 05/20/97 / 13:04:12  
Sort Criteria: Class, ID Number  
Filter Criteria: (Eval. Type CONTAINS 'S')  
Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	OP. Normal	SI. Desired	POWER REQD?	SUPPORTING Dwg. NO./REV.	SYS. & SUPPORTING COMPONENTS	REQ'D INTERCONNECTIONS	REG. ISSUE	
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
7158	2	088	2-VG-SOV-200B	VG/PRIMARY VENT HDR CONTHT ISOL PILD	12050-FM-090C1/17/D4	CONTHT	251'	10	S R	+	AIR	VENT	NO	12050-VG-002/6	N/A
5260	1	10	1-HV-AC-1	HV/CONTROL ROOM AIR CONDITIONER	11715-FB-044C3/07/E8	SB	277'	10/D	S R	--	ON	ON	YES	N/A	N/A
5270	2	10	1-HV-AC-2	HV/CONTROL ROOM AIR CONDITIONER	11715-FB-044C3/07/E8	SB	277'	10/D	S R	--	ON	ON	YES	N/A	N/A
5239	1	10	1-HV-AC-6	HV/RELAY ROOM AIR COND.	11715-FB-044C3/07/B7	SB	252'	12/D	S R	--	ON	ON	YES	11715-FB-40A/13	N/A
5249	2	10	1-HV-AC-7	HV/RELAY ROOM AIR COND.	11715-FB-044C3/07/B7	SB	252'	12/D	S R	--	ON	ON	YES	11715-FB-40A/13	N/A
5238	1	10	2-HV-AC-6	HV/RELAY ROOM AIR COND.	11715-FB-044C3/07/B7	SB	252'	12/D	S R	--	ON	ON	YES	N/A	N/A
5248	2	10	2-HV-AC-7	HV/RELAY ROOM AIR COND.	11715-FB-044C3/07/B7	SB	252'	12/D	S R	--	ON	ON	YES	N/A	N/A
5259	1	10	2-HV-AC-8	HV/CONTROL ROOM AIR CONDITIONER	11715-FB-044C3/07/E8	SB	277'	10/D	S R	--	ON	ON	YES	11715-FB-40A2/13	N/A
5269	2	10	2-HV-AC-9	HV/CONTROL ROOM AIR CONDITIONER	11715-FB-044C3/07/E8	SB	277'	10/D	S R	--	ON	ON	YES	11715-FB-40A2/13	N/A
5226G	1	11	2-HV-E-4A	HV/CHILLER UNIT	11715-FB-040D2/13/E5	SB	254'	CHILLER RM 11/D	S	--	ON	ON	YES	11715-FB-040A2	2-EP-MC-10
5226H	1	11	2-HV-E-4B	HV/CHILLER UNIT	11715-FB-040D2/13/B5	SB	254'	CHILLER RM 12/D	S	--	ON	ON	YES	11715-FB-040A2	2-EP-MC-11
5226I	2	11	2-HV-E-4C	HV/CHILLER UNIT	11715-FB-040D2/13/D5	SB	254'	CHILLER RM 12/D	S	--	ON	ON	YES	11715-FB-040A2	2-EP-MC-41
6057	1	14	2-BP-SW-1	BP/BY-PASS SWITCH 1 (MANUAL)	12050-FE-001V1/3/J2	SB	276'	CR	S	--	INVERT	INVERT	YES	N/A	2-VB-1-01
6058	1	14	2-BP-SW-2	BP/BY-PASS SWITCH 2 (MANUAL)	12050-FE-001V1/3/J4	SB	276'	CR	S	--	INVERT	INVERT	YES	N/A	2-VB-1-02
6059	2	14	2-BP-SW-3	BP/BY-PASS SWITCH 3 (MANUAL)	12050-FE-001V1/3/J6	SB	276'	CR	S	--	INVERT	INVERT	YES	N/A	2-VB-1-03
6060	2	14	2-BP-SW-4	BP/BY-PASS SWITCH 4 (MANUAL)	12050-FE-001V1/3/J8	SB	276'	CR	S	--	INVERT	INVERT	YES	N/A	2-VB-1-04
6061	1	14	2-EP-CB-04A	EP/120V VITAL AC 2-I BUS (RED & ORANGE)	12050-FE-001V1/3/A1	SB	276' 9"	9/C	S R	--	N/A	N/A	YES	N/A	2-BP-SW-01
6062	1	14	2-EP-CB-04B	EP/120V VITAL AC 2-II BUS (WHITE)	12050-FE-001V1/3/A3	SB	276' 9"	9/C	S R	--	N/A	N/A	YES	N/A	2-BP-SW-02
6063	2	14	2-EP-CB-04C	EP/120V VITAL AC 2-III BUS (BLUE & PURPLE)	12050-FE-001V1/3/A5	SB	276' 9"	9/C	S R	--	N/A	N/A	YES	N/A	2-BP-SW-03
6064	2	14	2-EP-CB-04D	EP/120V VITAL AC 2-IV BUS (YELLOW)	12050-FE-001V1/3/A8	SB	276' 9"	CR	S R	--	N/A	N/A	YES	N/A	2-BP-SW-04
6045	1	14	2-EP-CB-12A	EP/125V VITAL DC BUS (2-I)	12050-FE-001E1/15/B9	SB	254'	9/C	S R	--	N/A	N/A	YES	N/A	2-BY-C-02, -03, -04 2-BY-B-01
6046	1	14	2-EP-CB-12B	EP/125V VITAL DC BUS (2-II)	12050-FE-001E1/15/B9	SB	254'	9/C	S R	--	N/A	N/A	YES	N/A	2-BY-C-02, -03, -04 2-BY-B-02
6047	2	14	2-EP-CB-12C	EP/125V VITAL DC BUS (2-III)	12050-FE-001E1/15/B5	SB	252'	8/C	S R	--	N/A	N/A	YES	N/A	2-BY-C-05, -06, -07 2-BY-B-03

NORTH ANHRA UNIT 2  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
SEISMIC REVIEW SSEL  
(Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: HQ2\_SSEL.DBF / 05/20/97 / 13:04:12  
Sort Criteria: Class, ID Number  
Filter Criteria: (Eval Type CONTAINS 'S')  
Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg No./Rev./Zone	Building	Equipment Location	Flr Elev	Rm. or Row/Col	Sort Index	OP ST	Desired REQ'D	DWG. NO./REV	POWER SUPPORTING SYS	REQ'D INTERCONNECTIONS	REG. & SUPPORTING COMPONENTS ISSUE	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
6048	2	14	2-EP-CB-120	EP/125V VITAL DC BUS (2-1V)	12050-FE-001E1/15/87 SB		254'	B/C	S R	N/A	N/A	YES	N/A	2-BY-E-05,-06,-07	2-BY-B-04	
6035	1	14	2-EP-CB-16A	EP/120V SEMI-VITAL AC 2A BUS	12050-FE-001W1/13/82 SB		276' 9"	CR	S R	N/A	N/A	YES	N/A	TRANS-70-2		
6037	2	14	2-EP-CB-16B	EP/120V SEMI-VITAL AC 2B BUS	12050-FE-001W1/13/8, SB J-5		276' 9"	CR	S R	N/A	N/A	YES	N/A	TRANS-71-2		
5573*	1	14	2-EP-CB-42AN	EP/HEAT TRACE DISTRIBUTION CABINET	12050-FE-063 SERIES AFPH		271'	--	S R 30	ON	ON	YES	N/A	N/A		
5585*	2	14	2-EP-CB-42AR	EP/HEAT TRACE DISTRIBUTION CABINET	12050-FE-063 SERIES AFPH		271'	--	S R 30	ON	ON	YES	N/A	N/A		
5574*	1	14	2-EP-CB-42BN	EP/HEAT TRACE DISTRIBUTION CABINET	12050-FE-063 SERIES AFPH		271'	--	S R 30	ON	ON	YES	N/A	N/A		
5586*	2	14	2-EP-CB-42BR	EP/HEAT TRACE DISTRIBUTION CABINET	12050-FE-063 SERIES AFPH		271'	--	S R 30	ON	ON	YES	N/A	N/A		
6049	1	15	2-BY-B-01	BY/125V BATTERY 2-1	12050-FE-001E1/15/82 SB		294'	9/C	S	--	N/A	YES	N/A	N/A		
6050	1	15	2-BY-B-02	BY/125V BATTERY 2-1	12050-FE-001E1/15/84 SB		252'	9/C	S	--	N/A	YES	N/A	N/A		
6051	2	15	2-BY-B-03	BY/125V BATTERY 2-1	12050-FE-001E1/15/85 SB		294'	8/D	S	--	N/A	YES	N/A	N/A		
6052	2	15	2-BY-B-04	BY/125V BATTERY 2-1	12050-FE-001E1/15/87 SB		252'	8/D	S	--	N/A	YES	N/A	N/A		
6065	1	15	2-EG-B-02B	AP/EDG BATTERIES AND RACKS	12050-1.30-212C SB		272'	EDGZH	S	--	N/A	NO	N/A	N/A		
6066	2	15	2-EG-B-04D	AP/EDG BATTERIES AND RACKS	12050-1.30-212C SB		272'	EDG2J	S	--	N/A	NO	N/A	N/A		
6040	1	16	2-BY-E-02	BY/BATTERY CHARGER 2-1	12050-FE-001E1/15/82 SB		252'	9/C	S R	--	N/A	YES	N/A	2-EP-MC-10		
6039	1	16	2-BY-E-03	BY/BATTERY CHARGER 2-1	12050-FE-001E1/15/82 SB		254'	EMER SWGR	S R	--	N/A	YES	N/A	2-EP-MC-10		
6041	1	16	2-BY-E-04	BY/BATTERY CHARGER 2-1	12050-FE-001E1/15/84 SB		254'	EMER SWGR	S R	--	N/A	YES	N/A	2-EP-MC-10		
6043	2	16	2-BY-E-05	BY/BATTERY CHARGER 2-1	12050-FE-001E1/15/85 SB		252'	9/C	S R	--	N/A	YES	N/A	2-EP-MC-11		
6042	2	16	2-BY-E-06	BY/BATTERY CHARGER 2-1	12050-FE-001E1/15/85 SB		254'	EMER SWGR	S R	--	N/A	YES	N/A	2-EP-MC-11		
6044	2	16	2-BY-E-07	BY/BATTERY CHARGER 2-1	12050-FE-001E1/15/87 SB		252'	8/C	S R	--	N/A	YES	N/A	2-EP-MC-11		
6053	1	16	2-VB-I-01	VB/INVERTOR TO VITAL 2-1 BUS	12050-FE-001E1/15/82 SB		252'	9/C	S R	--	N/A	YES	N/A	2-EP-CB-12A		
6054	1	16	2-VB-I-02	VB/INVERTOR TO VITAL 2-1 BUS	12050-FE-001E1/15/83 SB		252'	9/C	S R	--	N/A	YES	N/A	2-EP-CB-12B		
6055	2	16	2-VB-I-03	VB/INVERTOR TO VITAL 2-1 BUS	12050-FE-001E1/15/85 SB		252'	8/C	S R	--	N/A	YES	N/A	2-EP-CB-12C		
6056	2	16	2-VB-I-04	VB/INVERTOR TO VITAL 2-1 BUS	12050-FE-001E1/15/87 SB		252'	8/C	S R	--	N/A	YES	N/A	2-EP-CB-12D		
6001	1	17	EDG-2H*	AP/EMERGENCY DIESEL GENERATOR 2H	12050-FE-001A1/10/E6 SB		272'	15/D	S R	--	OFF	ON	YES	N/A	2-BY-B-01,-02	
6002	2	17	EDG-2J*	AP/EMERGENCY DIESEL GENERATOR 2J	12050-FE-001A1/10/A6 SB		272'	17/D	S R	--	OFF	ON	YES	N/A	2-BY-B-03,-04	
1147	1	18	1-CH-LT-1102	CH/BAST C LEVEL	11715-FM-095A1/22/E7 AUX		289'	9.5/G	S R	--	ON	ON	YES	11715-CH-039/3	N/A	

NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 SEISMIC REVIEW SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA2 SSEL.DBF / 05/20/97 / 13:04:12  
 Sort Criteria: Class, ID Number  
 Filter Criteria: (Eval. Type CONTAINS 'S')  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elv.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQD?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1146	2	18	1-CH-LT-1163	CH/BAST B LEVEL	11715-FM-095A1/22/E5	AUX	274'	9/H	S R --	ON	ON	YES	11715-CH-048/3	N/A	
1148	1	18	1-CH-LT-1165	CH/BAST C LEVEL	11715-FM-095A1/22/E8	AUX	289'	9.2/H	S R --	ON	ON	YES	11715-CH-040/4	N/A	
1150	1	18	1-CH-TIC-1103	CH/BAST C TEMPERATURE	11715-FM-095A1/22/E8	AUX	274'	9.8/GH	S R --	ON	ON	YES	11715-CH-037/5	N/A	
1149	1	18	1-CH-TIC-1164	CH/BAST B TEMPERATURE	11715-FM-095A1/22/E5	AUX	274'	9.1/GH	S R --	ON	ON	YES	11715-CH-043/3	N/A	
1151	1	18	1-CH-TIC-1166	CH/BAST C TEMPERATURE	11715-FM-095A1/22/E7	AUX	274'	9.5/GH	S R --	ON	ON	YES	11715-CH-038/2	N/A	
5265	1	18	1-HV-TT-155	HV/CONTROL ROOM TEMP. TRANS.	11715-FB-044C3/07/E8	SB	277'	10/D	S R --	ON	ON	YES	N/A	1-HV-AC-1	
5275	2	18	1-HV-TT-164	HV/CONTROL ROOM TEMP. TRANS.	11715-FB-044C3/07/E8	SB	277'	10/D	S R --	ON	ON	YES	N/A	1-HV-AC-2	
5244	1	18	1-HV-TT-166	HV/RELAY ROOM TEMP. TRANS.	11715-FB-044C3/07/B7	SB	252'	12/D	S R 36	ON	ON	YES	N/A	1-HV-AC-6	
5255	2	18	1-HV-TT-167	HV/RELAY ROOM TEMP. TRANS.	11715-FB-044C3/07/B7	SB	252'	12/D	S R 36	ON	ON	YES	N/A	1-HV-AC-7	
5003	1	18	2-CC-FT-200A	CC/CCW HX OUTLET FLOW	11715-FM-079A2/18/E4	AUX	259'	9.5/F	S R --	ON	ON	YES	12050-CC-002/4	N/A	
5007	1	18	2-CC-FT-200B	CC/CCW HX OUTLET FLOW	11715-FM-079A2/18/D4	AUX	259'	9.5/F	S R --	ON	ON	YES	12050-CC-002/4	N/A	
5054	1	18	2-CC-FT-232A	CC/CC HX FLOW TO RHR HX	12050-FM-079A1/19/F6	CONTMT	233' A	17.5	S R --	ON	ON	YES	12050-CC-047/4; 12050-FK-1B	N/A	
5062	1	18	2-CC-FT-232B	CC/CC HX FLOW TO RHR HX	12050-FM-079A1/19/F5	CONTMT	233' A	17.5	S R --	ON	ON	YES	12050-CC-048/4; 12050-FK-1B	N/A	
5011	1	18	2-CC-PT-200	CC/CCW HX OUTLET PRESSURE	11715-FM-079A2/18/D3	AUX	245'	10.1/G	S R --	ON	ON	YES	12050-CC-096/3	N/A	
1176	1	18	2-CH-FT-2110	CH/BAST TO VCT FLOW	12050-FM-095B1/22/B4	AUX	274'	9.6/J	S R --	ON	ON	YES	12050-CH-015/4	N/A	
1167	2	18	2-CH-FT-2113	CH/BAST TO VCT FLOW	12050-FM-095B1/22/B4	AUX	274'	9.6/J	S R --	ON	ON	YES	12050-CH-017/9	N/A	
1082	1	18	2-CH-FT-2122	CH/CHARGING FLOW TO REGEN HX	12050-FM-095C1/20/C4	AUX	245'	12/H	S R --	ON	ON	YES	12050-CH-001/6	N/A	
1104	1, 2	18	2-CH-FT-2124	CH/RCP SEAL WATER INJECTION FLOW	12050-FM-095C2/14/C3	AUX	245'	11.7/HJ	S R 20	ON	ON	YES	N/A	N/A	
1106	1, 2	18	2-CH-FT-2127	CH/RCP SEAL WATER INJECTION FLOW	12050-FM-095C2/14/B3	AUX	245'	11.6/HJ	S R 20	ON	ON	YES	N/A	N/A	
1108	1, 2	18	2-CH-FT-2130	CH/RCP SEAL WATER INJECTION FLOW	12050-FM-095C2/14/A3	AUX	245'	11.6/HJ	S R 20	ON	ON	YES	N/A	N/A	
1052	1	18	2-CH-LT-2112	CH/VCT LEVEL	12050-FM-095B1/22/D5	AUX	275'	9.1/J	S R --	ON	ON	YES	12050-CH-011/8	N/A	
1050	1	18	2-CH-LT-2115	CH/VCT LEVEL	12050-FM-095B1/22/D5	AUX	275'	9.1/J	S R --	ON	ON	YES	12050-CH-012/4	N/A	
4121	1	18	2-CN-LT-200A	CN/CONDENSATE STORAGE TANK LEVEL	12050-FM-074A3/29/D3	AFPH	271'	--	S R --	ON	ON	YES	12050-CN-069/4	N/A	
4122	1	18	2-CN-LT-200B	CN/CONDENSATE STORAGE TANK LEVEL	12050-FM-074A3/29/D3	AFPH	275'	--	S R --	ON	ON	YES	12050-CN-001/8 12050-FP-2J 12050-FP-2K	N/A	
4177	1	18	2-FW-FT-200A	FW/AFWP TO SG A FLOW	12050-FM-074A1/27/D6	AFPH	273'	NOTE 2D	S R --	ON	ON	YES	12050-FW-050/6	N/A	

NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 SEISMIC REVIEW SSEL  
 (Sorted by Equipment Class and Mark Number)

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 Filter Criteria: (Eval. Type CONTAINS 'S')  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT NOTES	OP. ST.	POWER REQD?	SUPPORTING SYS. DWG. NO./REV.	PEO'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
4161	2	18	2-FW-FT-200B	FW/AFWP TO SG B FLOW	12050-FM-074A1/27/E6	AFPH	273'	--	S R --	ON	ON	YES	12050-FW-051/6	N/A		
4165	2	18	2-FW-FT-200C	FW/AFWP TO SG C FLOW	12050-FM-074A1/27/B7	AFPH	273'	16/M	S R --	ON	ON	YES	12050-FW-052/6	N/A		
4185	1	18	2-FW-LT-2474	FW/SG A LEVEL	12050-FM-074A1/27/F7	CONTMT	261'	13.5	S R --	ON	ON	YES	12050-FW-091/8	N/A		
4187	1	18	2-FW-LT-2475	FW/SG A LEVEL	12050-FM-074A1/27/F6	CONTMT	241' A	17.5	S R --	ON	ON	YES	12050-FW-097/7; RACK 2-104	12050-FK-1B		
4189	1	18	2-FW-LT-2476	FW/SG A LEVEL	12050-FM-074A1/27/F6	CONTMT	261'	15	S R --	ON	ON	YES	12050-FW-103/7	N/A		
4181	1	18	2-FW-LT-2477	FW/SG A LEVEL	12050-FM-074A1/27/F8	CONTMT	241' A	17.5	S R --	ON	ON	YES	12050-FW-088/7; RACK 2-104	12050-FK-1B		
4197	2	18	2-FW-LT-2484	FW/SG B LEVEL	12050-FM-074A1/27/D7	CONTMT	241' A	8.8	S R --	ON	ON	YES	12050-FW-093/7; RACK 2-120	12050-FK-1C		
4199	2	18	2-FW-LT-2485	FW/SG B LEVEL	12050-FM-074A1/27/D6	CONTMT	241' A	8.2	S R --	ON	ON	YES	12050-FW-099/7; RACK 2-117	12050-FK-1C		
4201	2	18	2-FW-LT-2486	FW/SG B LEVEL	12050-FM-074A1/27/D6	CONTMT	261'	8.2	S R --	ON	ON	YES	12050-FW-105/7	N/A		
4193	2	18	2-FW-LT-2487	FW/SG B LEVEL	12050-FM-074A1/27/D8	CONTMT	241' A	9	S R --	ON	ON	YES	12050-FW-089/8; RACK 2-120	12050-FK-1C		
4207	3	18	2-FW-LT-2494	FW/SG C LEVEL	12050-FM-074A1/27/E7	CONTMT	261'	4.8	S R --	ON	ON	YES	12050-FW-095/7	RACK 2-115		
4209	3	18	2-FW-LT-2495	FW/SG C LEVEL	12050-FM-074A1/27/C7	CONTMT	261'	5.5	S R --	ON	ON	YES	12050-FW-101/8	RACK 2-114		
4211	3	18	2-FW-LT-2496	FW/SG C LEVEL	12050-FM-074A1/27/C6	CONTMT	241' A	4	S R --	ON	ON	YES	12050-FW-107/7; RACK 2-101	12050-FK-1B		
4203	3	18	2-FW-LT-2497	FW/SG C LEVEL	12050-FM-074A1/27/E8	CONTMT	241' A	3.8	S R --	ON	ON	YES	12050-FW-090/7; RACK 2-101	12050-FK-1B		
4146	2	18	2-FW-PC-259A	FW/PRESSURE CONTROL	12050-FM-074A3/29/F8	AFPH	273'	--	S R --	ON	ON	YES	12050-FW-053/5	N/A		
4151	2	18	2-FW-PC-259B	FW/PRESSURE CONTROL	12050-FM-074A3/29/E8	AFPH	273'	--	S R --	ON	ON	YES	12050-FW-054/5	N/A		
4136	1	18	2-FW-PI-256A	FW/TDAFWP SUCTION (LOCAL)	12050-FM-074A3/29/B7	AFPH	275'	--	S --	N/A	N/A	NO	N/A	N/A		
4130	2	18	2-FW-PI-256B	FW/MDAFWP SUCTION (LOCAL)	12050-FM-074A3/29/B6	AFPH	274'	--	S --	N/A	N/A	NO	12050-FP-2K	2-FW-P-3A		
4124	2	18	2-FW-PI-256C	FW/MDAFWP SUCTION (LOCAL)	12050-FM-074A3/29/B5	AFPH	275'	--	S --	N/A	N/A	NO	12050-FP-2J	2-FW-P-3B		
													12050-FP-2K			
4150	2	18	2-FW-PT-201A	FW/AFWP TO SG B PRESSURE	12050-FM-074A3/29/F8	AFPH	273'	--	S R --	ON	ON	YES	12050-FW-016/4	N/A		
4155	2	18	2-FW-PT-201B	FW/AFWP TO SG C PRESSURE	12050-FM-074A3/29/E8	AFPH	273'	--	S R --	ON	ON	YES	12050-FW-017/4	N/A		
4158	1	18	2-FW-PT-201C	FW/AFWP TO SG A PRESSURE	12050-FM-074A3/29/E8	AFPH	273'	--	S R --	ON	ON	YES	12050-FW-150/5	N/A		
4137	1	18	2-FW-PT-203A	FW/TDAFWP SUCTION PRESSURE	12050-FM-074A3/29/C7	AFPH	273'	--	S R --	ON	ON	YES	12050-FW-001/3	N/A		

NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 SEISMIC REVIEW SSEL  
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 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING Dwg. NO./REV.	SYS. & SUPPORTING COMPONENTS	REQ'D INTERCONNECTIONS	REG. ISSUE
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	
4131	2	18	2-FW-PT-203B	FW/MDAFWP SUCTION PRESSURE	12050-FM-074A3/29/C6	AFPH	273'	--	S R --	ON	ON	YES	12050-FW-002/4	N/A		
4125	2	18	2-FW-PT-203C	FW/MDAFWP SUCTION PRESSURE	12050-FM-074A3/29/C5	AFPH	273'	--	S R --	ON	ON	YES	12050-FW-003/4	N/A		
2040	1	18	2-GN-PT-234A	GN/N2 RESERVE PRESSURE	11715-FM-105A1/20/B8	CONTMT	290'	5.5	S R --	ON	ON	YES	N/A	N/A		
2042	2	18	2-GN-PT-234B	GN/N2 RESERVE PRESSURE	11715-FM-105A1/20/B3	CONTMT	290'	5.5	S R --	ON	ON	YES	N/A	N/A		
5199	1	18	2-HV-FS-2213A	HV/CHILLER FLOW SWITCH	11715-FB-040A2/13	SB	254'	CHILLER RM	S R --	ON	ON	YES	N/A	N/A		
5205	2	18	2-HV-FS-2213B	HV/CHILLER FLOW SWITCH	11715-FB-040A2/13	SB	254'	CHILLER RM	S R --	ON	ON	YES	N/A	N/A		
5205A	2	18	2-HV-FS-2213C	HV/CHILLER FLOW SWITCH	11715-FB-040A2/13	SB	254'	CHILLER RM	S R --	ON	ON	YES	N/A	N/A		
5232	1	18	2-HV-FS-2215A	HV/CND WTR PUMP SEAL FLOW SWITCH	11715-FB-040D2/13	SB	254'	CHILLER RM	S R --	ON	ON	YES	N/A	N/A		
5233	1	18	2-HV-FS-2215B	HV/CND WTR PUMP SEAL FLOW SWITCH	11715-FB-040D2/13	SB	254'	CHILLER RM	S R --	ON	ON	YES	N/A	N/A		
5234	2	18	2-HV-FS-2215C	HV/CND WTR PUMP SEAL FLOW SWITCH	11715-FB-040D2/13	SB	254'	CHILLER RM	S R --	ON	ON	YES	N/A	N/A		
5226M	1	18	2-HV-PC-2235A	HV/CR & RR WATER SYSTEM FLOW CONTROL	11715-FB-040D2/13/E5	SB	254'	CHILLER RM	S --	VENT	VENT	NO	N/A	N/A		
5226N	1	18	2-HV-PC-2235B	HV/CR & RR WATER SYSTEM FLOW CONTROL	11715-FB-040D2/13/B5	SB	254'	CHILLER RM	S --	VENT	VENT	NO	N/A	N/A		
5226O	2	18	2-HV-PC-2235C	HV/CR & RR WATER SYSTEM FLOW CONTROL	11715-FB-040D2/13/C5	SB	254'	CHILLER RM	S --	VENT	VENT	NO	N/A	N/A		
5227	1	18	2-HV-PDS-2228A	HV/CND WTR STRAINER DIFF PRESS	11715-FB-040D2/13	SB	254'	CHILLER RM	S R --	ON	ON	YES	N/A	N/A		
5228	1	18	2-HV-PDS-2228B	HV/CND WTR STRAINER DIFF PRESS	11715-FB-040D2/13	SB	254'	CHILLER RM	S R --	ON	ON	YES	N/A	N/A		
5266	1	18	2-HV-TT-255	HV/CONTROL ROOM TEMP. TRANS.	11715-FB-044C3/07/E8	SB	277'	10/D	S R 36	ON	ON	YES	N/A	2-HV-AC-8		
5276	2	18	2-HV-TT-264	HV/CONTROL ROOM TEMP. TRANS.	11715-FB-044C3/07/E8	SB	277'	10/D	S R 36	ON	ON	YES	N/A	2-HV-AC-8		
5245	1	18	2-HV-TT-266	HV/RELAY ROOM TEMP. TRANS.	11715-FB-044C3/07/B7	SB	252'	12/D	S R 36	ON	ON	YES	N/A	2-HV-AC-6		
5256	2	18	2-HV-TT-267	HV/RELAY ROOM TEMP. TRANS.	11715-FB-044C3/07/B7	SB	252'	12/D	S R 36	ON	ON	YES	N/A	2-HV-AC-7		
4007	1	18	2-MS-PT-201A	MS/SG A STEAM PRESSURE	12050-FM-070B1/18/C6	QSPH	272'	14/GA	S R --	ON	ON	YES	12050-MS-053/7	N/A		
4035	2	18	2-MS-PT-201B	MS/SG B STEAM PRESSURE	12050-FM-070B2/20/C5	QSPH	256'	13.7/GB	S R --	ON	ON	YES	12050-MS-054/7	RACK 2-802		
4063	3	18	2-MS-PT-201C	MS/SG C STEAM PRESSURE	12050-FM-070B3/19/B6	QSPH	256'	14.1/GA	S R --	ON	ON	YES	12050-MS-055/7	N/A		
4003	1	18	2-MS-PT-2474	MS/SG A STEAM PRESSURE	12050-FM-070B1/18/D7	QSPH	256'	6/GB	S R 9	ON	ON	YES	12050-MS-158/4	RACK 2-802		
4005	2	18	2-MS-PT-2476	MS/SG A STEAM PRESSURE	12050-FM-070B1/18/C6	QSPH	256'	6/GB	S ? 9	ON	ON	YES	12050-MS-162/5	RACK 2-801		
4031	1	18	2-MS-PT-2485	MS/SG B STEAM PRESSURE	12050-FM-070B2/20/C7	QSPH	256'	16/GB	S R 9	ON	ON	YES	12050-MS-164/4	RACK 2-802		

NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 SEISMIC REVIEW SSEL  
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LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Fir. Elev.	LOCATION Rm. or Row/Col	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
4033	2	18	2-MS-PT-2486	MS/SG B STEAM PRESSURE	12050-FM-070B2/20/C6	QSPH	256'	16/GB	S R 9	ON	ON	YES	12050-MS-168/5	RACK 2-801	
4059	2	18	2-MS-PT-2494	MS/SG C STEAM PRESSURE	12050-FM-070B3/19/B7	QSPH	256'	16/GB	S R 9	ON	ON	YES	12050-MS-170/4	RACK 2-802	
4061	1	18	2-MS-PT-2496	MS/SG C STEAM PRESSURE	12050-FM-070B3/19/C6	QSPH	256'	16/GB	S R 9	ON	ON	YES	12050-MS-174/6	RACK 2-801	
4015	1	18	2-MS-PY-201A	MS/SG A STEAM DUMP VALVE E/P TRANSDUCER	12050-MS-053/7	MSVH	272'	NOTE 2A	S R --	ON	ON	YES	N/A	N/A	
4043	2	18	2-MS-PY-201B	MS/SG B STEAM DUMP VALVE E/P TRANSDUCER	12050-MS-054/7	MSVH	272'	NOTE 2B	S R --	ON	ON	YES	N/A	N/A	
4071	3	18	2-MS-PY-201C	MS/SG C STEAM DUMP VALVE E/P TRANSDUCER	12050-MS-233/2	MSVH	272'	NOTE 2C	S R --	ON	ON	YES	N/A	N/A	
7008	1, 2	18	2-QS-LI-201	QS/CHEMICAL ADD TANK LEVEL INDICATOR	12050-FM-091A1/20/D6	SB	277'	CR	S R I	ON	ON	YES	12050-QS-006/3	2-EI-CB-05	
3051	1, 2	18	2-QS-LT-200A	QS/RWST LEVEL	12050-FM-091A1/20/D8	YARD	271'	--	S R --	ON	ON	YES	12050-QS-003/8	N/A	
3052	1, 2	18	2-QS-LT-200B	QS/RWST LEVEL	12050-FM-091A1/20/D6	YARD	271'	--	S R --	ON	ON	YES	12050-QS-004/8	N/A	
3053	1, 2	18	2-QS-LT-200C	QS/RWST LEVEL	12050-FM-091A1/20/D8	YARD	271'	--	S R --	ON	ON	YES	12050-QS-016/9	N/A	
3054	1, 2	18	2-QS-LT-200D	QS/RWST LEVEL	12050-FM-091A1/20/D6	YARD	271'	--	S R --	ON	ON	YES	12050-QS-017/8	N/A	
7007	1, 2	18	2-QS-LT-201	QS/CHEMICAL ADD TANK LEVEL XMTR	12050-FM-091A1/20/E6	YARD/TUNL	280'	15/L	S R I	ON	ON	YES	12050-QS-006/3	2-EI-CB-230	
3033	1, 2	18	2-RC-LIS-2310	RC/RV HEAD ISOLATOR	13075-FM-093D1/06/E5	AUX	259' 6"	CABLE VAULT	S R --	ON	ON	YES	N/A	N/A	
3034	1, 2	18	2-RC-LIS-2311	RC/HOT LEG ISOLATOR	13075-FM-093D1/06/F5	AUX	259' 6"	CABLE VAULT	S R --	ON	ON	YES	N/A	N/A	
3029	1, 2	18	2-RC-LIS-2312	RC/SEAL TABLE ISOLATOR	13075-FM-093D1/06/B5	AUX	259' 6"	CABLE VAULT	S R --	ON	ON	YES	N/A	N/A	
3042	1, 2	18	2-RC-LIS-2320	RC/HOT LEG ISOLATOR	13075-FM-093D2/06/D5	AUX	259' 6"	CABLE VAULT	S R --	ON	ON	YES	N/A	N/A	
3043	1, 2	18	2-RC-LIS-2321	RC/RV HEAD ISOLATOR	13075-FM-093D2/06/E5	AUX	259' 6"	CABLE VAULT	S R --	ON	ON	YES	N/A	N/A	
3047	1, 2	18	2-RC-LIS-2322	RC/SEAL TABLE ISOLATOR	13075-FM-093D2/06/A5	AUX	259' 6"	CABLE VAULT	S R --	ON	ON	YES	N/A	N/A	
3030	1, 2	18	2-RC-LT-2310	RC/PLENUM LEVEL	13075-FM-093D1/06/E2	AUX	259' 6"	CABLE VAULT	S R --	ON	ON	YES	N/A	N/A	
3032	1, 2	18	2-RC-LT-2311	RC/N-RANGE LEVEL	13075-FM-093D1/06/E4	AUX	259' 6"	CABLE VAULT	S R --	ON	ON	YES	N/A	N/A	
3031	1, 2	18	2-RC-LT-2312	RC/W-RANGE LEVEL	13075-FM-093D1/06/E3	AUX	259' 6"	CABLE VAULT	S R --	ON	ON	YES	N/A	N/A	
3046	1, 2	18	2-RC-LT-2320	RC/PLENUM LEVEL	13075-FM-093D2/06/F3	AUX	259' 6"	CABLE VAULT	S R --	ON	ON	YES	N/A	N/A	
3044	1, 2	18	2-RC-LT-2321	RC/N-RANGE LEVEL	13075-FM-093D2/06/F7	AUX	259' 6"	CABLE VAULT	S R --	ON	ON	YES	N/A	N/A	
3045	1, 2	18	2-RC-LT-2322	RC/W-RANGE LEVEL	13075-FM-093D2/06/F8	AUX	259' 6"	CABLE VAULT	S R --	ON	ON	YES	N/A	N/A	
3025	1, 2	18	2-RC-LT-2459	RC/PZR LEVEL	12050-FM-093B1/25/C6	CONTMT	261'	4.8	S R --	ON	ON	YES	12050-RC-061/8	RACK 2-115	

NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 SEISMIC REVIEW SSEL  
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 Filter Criteria: (Eval. Type CONTAINS 'S')  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flt. Elv.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQD?	SUPPORTING DWG. NO./REV.	SYS. & SUPPORTING	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(17)
3007	1, 2	18	2-RC-LT-2460	RC/PZR LEVEL	12050-FM-093B1/25/C6	CONTMT	261'	5.5	S R --	ON	ON	YES	12050-RC-062/7	RACK 2-114		
3009	1, 2	18	2-RC-LT-2461	RC/PZR LEVEL	12050-FM-093B1/25/C4	CONTMT	261'	6	S R --	ON	ON	YES	12050-RC-063/8	RACK 2-112		
3011	2	18	2-RC-LT-2462	RC/PZR LEVEL	12050-FM-093B1/25/C4	CONTMT	261'	6	S R --	ON	ON	YES	12050-RC-064/4	RACK 2-112		
2027	1, 2	18	2-RC-LT-2470	RC/PRT LEVEL	12050-FM-093B2/26/C4	CONTMT	232'	5.5	S R 16	ON	ON	YES	12050-RC-035/3	N/A		
2001	1	18	2-RC-PT-2402	RC/REACTOR COOLANT WR PRESSURE	12050-FM-093A3/26/DB	CONTMT	241' E	3.4	S R --	ON	ON	YES	12050-RC-126/11 ;12050-FK-1B	N/A		
2002	1	18	2-RC-PT-2402-1	RC/REACTOR COOLANT WR PRESSURE	12050-FM-093A3/26/DB	CONTMT	241'	3.4	S R --	ON	ON	YES	12050-RC-128/9	N/A		
2016	2	18	2-RC-PT-2444	RC/PZR PRESSURE	12050-FM-093B1/25/C4	CONTMT	261'	6	S R --	ON	ON	YES	12050-RC-107/4	RACK 2-112		
2018	2	18	2-RC-PT-2445	RC/PZR PRESSURE	12050-FM-093B1/25/C4	CONTMT	261'	6	S R --	ON	ON	YES	12050-RC-105/4	RACK 2-112		
2010	2	18	2-RC-PT-2455	RC/PZR PRESSURE	12050-FM-093B1/25/C6	CONTMT	261'	4	S R --	ON	ON	YES	12050-RC-069/8	RACK 2-115		
2012	2	18	2-RC-PT-2456	RC/PZR PRESSURE	12050-FM-093B1/25/C6	CONTMT	261'	5.5	S R --	ON	ON	YES	12050-RC-071/8	RACK 2-114		
2014	2	18	2-RC-PT-2457	RC/PZR PRESSURE	12050-FM-093B1/25/C4	CONTMT	261'	6	S R --	ON	ON	YES	12050-RC-073/8	RACK 2-112		
2025	1, 2	18	2-RC-PT-2472	RC/PRT PRESSURE	12050-FM-093B2/26/C5	CONTMT	216'	6.8	S R 16	ON	ON	YES	12050-RC-041/3	RACK 2-111		
4261	1, 2	18	2-RH-E/P-HCV-275B	RH/RHR HX OUTLET E/P	12050-RH-005/1	CONTMT	216'	1.5	S R --	ON	ON	YES	N/A	RACK 2-103		
4263	1, 2	18	2-RH-FT-2605	RH/RHR HX OUTLET FLOW	12050-FM-094A2/14/C4	CONTMT	216'	1.5	S R --	ON	ON	YES	12050-RH-004/4	RACK 2-102		
4255	1, 2	18	2-RH-PIC-2602	RH/RHR PUMPS DISCHARGE PRESSURE	12050-FM-094A1/15/F7	CONTMT	216'	16	S R --	ON	ON	YES	N/A	RACK 2-105		
4246	1, 2	18	2-RH-PT-2403	RH/RHR PUMP INLET PRESSURE	12050-FM-094A1/15/B5	CONTMT	245'	17	S R --	ON	ON	YES	12050-FK-1B	N/A		
7036B	2	18	2-RS-LI-203A	RS/CASING COOLING TANK LEVEL INDICATOR	12050-FM-091B1/10/3D	SB	277'	8/C	S R I	N/A	N/A	YES	12050-RS-029/7	2-RS-LT-203A		
7036F	2	18	2-RS-LI-203B	RS/CASING COOLING TANK LEVEL INDICATOR	12050-FM-091B1/10/3C	SB	277'	8/C	S R I	N/A	N/A	YES	12050-RS-030/6	2-RS-LT-203B		
7036D	2	18	2-RS-LS-203A	RS/CASING COOLING TANK LEVEL SWITCH	12050-FM-091B1/10/3D	SB	252'	11/D	S R I, 36	N/A	N/A	NO	12050-RS-029/7	2-EI-CB-23B		
7036G	2	18	2-RS-LS-203B	RS/CASING COOLING TANK LEVEL SWITCH	12050-FM-091B1/10/3C	SB	252'	11/D	S R I, 36	N/A	N/A	NO	12050-RS-030/6	2-EI-CB-23D		
7036A	2	18	2-RS-LT-203A	RS/CASING COOLING TANK LEVEL XMTR	12050-FM-091B1/10/4D	YARD	270'	--	S R I	N/A	N/A	YES	12050-RS-029/7	2-EP-CB-04B		
7036E	2	18	2-RS-LT-203B	RS/CASING COOLING TANK LEVEL XMTR	12050-FM-091B1/10/4C	YARD	270'	--	S R I	N/A	N/A	YES	12050-RS-030/6	2-EP-CB-04D		
5009	1	19	2-CC-TE-200	CC/CCW HX OUTLET TEMP	11715-FM-079A2/18/D3	AUX	244'	10/G	S R --	ON	ON	YES	12050-CC-082/3	N/A		
5052	1	19	2-CC-TE-201	CC/CCW PUMPS SUCTION HEADER TEMP	11715-FM-079A2/18/C7	AUX	244'	10/E	S R --	ON	ON	YES	12050-CC-083/3	N/A		



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LINE NO	EQUIP TRAIN CLASS	MARK NO	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr.Elv	LOCATION Rm. or Row/Col.	SORT	NOTES	OP Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10) (11)	(12)	(13)	(14)	(15)	(16)	(17)
5060	1	19	2-CC-TE-249A	CC/RHR HX COOLING WATER OUTLET TEMP	12050-FM-079A1/19/A8	AUX	244'	11/L	S R --	ON	ON	YES	12050-CC-079/2	N/A	
5068	1	19	2-CC-TE-249B	CC/RHR HX COOLING WATER OUTLET TEMP	12050-FM-079A1/19/C7	AUX	244'	11/L	S R --	ON	ON	YES	12050-CC-080/2	N/A	
5084	1	19	2-CC-TE-250A	CC/RHR PUMP SEAL COOLER OUTLET TEMP	12050-FM-079A5/17/C4	CONTMT	231'	1	S R --	ON	ON	YES	12050-CC-026/1	N/A	
5085	1	19	2-CC-TE-250B	CC/RHR PUMP SEAL COOLER OUTLET TEMP	12050-FM-079A5/17/B4	CONTMT	231'	1.5	S R --	ON	ON	YES	12050-CC-027/1	N/A	
1087	1	19	2-CH-TE-2123	CH/REGEN HX OUTLET CHARGING TEMP	12050-FM-095C1/20/E5	CONTMT	242'	6	S R --	N/A	N/A	YES	12050-CH-002/4; 12050-FM-40C	N/A	
5196	1	19	2-HV-TC-2200A	HV/CHILLED WATER P. DISCH. TEMP.	11715-FB-040A2/13	SB	254'	CHILLER RM	S R --	ON	ON	YES	N/A	N/A	
5202	2	19	2-HV-TC-2200B	HV/CHILLED WATER P. DISCH. TEMP.	11715-FB-040A2/13	SB	254'	CHILLER RM	S R --	ON	ON	YES	N/A	N/A	
5223	2	19	2-HV-TC-2200C	HV/CHILLED WATER P. DISCH. TEMP.	11715-FB-040A2/13/D6	SB	254'	CHILLER RM	S R --	OFF	ON	YES	N/A	N/A	
3037	1, 2	19	2-RC-TE-2313	RC/RVLIS TEMP	13075-FM-093D1/06/F6	CONTMT	281' 6"	10.5	S R --	ON	ON	YES	12050-RC-134/4	N/A	
3036	1, 2	19	2-RC-TE-2314	RC/RVLIS TEMP	13075-FM-093D1/06/F6	CONTMT	278' 10"	11	S R --	ON	ON	YES	12050-RC-134/4	N/A	
3028	1, 2	19	2-RC-TE-2315	RC/RVLIS TEMP	13075-FM-093D1/06/B6	CONTMT	259'	12	S R --	ON	ON	YES	12050-RC-134/4	N/A	
3035	1, 2	19	2-RC-TE-2316	RC/RVLIS TEMP	13075-FM-093D1/06/E6	CONTMT	259'	10	S R --	ON	ON	YES	12050-RC-134/4	N/A	
3022	1, 2	19	2-RC-TE-2317	RC/RVLIS TEMP	13075-FM-093D1/06/C8	CONTMT	216'	17	S R --	ON	ON	YES	12050-RC-134/4	N/A	
3024	1, 2	19	2-RC-TE-2318	RC/RVLIS TEMP	13075-FM-093D1/06/B7	CONTMT	244'	17	S R --	ON	ON	YES	12050-RC-134/4	N/A	
3027	1, 2	19	2-RC-TE-2319	RC/RVLIS TEMP	13075-FM-093D1/06/B6	CONTMT	259'	16	S R --	ON	ON	YES	12050-RC-134/4	N/A	
3038	1, 2	19	2-RC-TE-2323	RC/RVLIS TEMP	13075-FM-093D2/06/E3	CONTMT	274'	10.5	S R --	ON	ON	YES	12050-RC-137/5	N/A	
3039	1, 2	19	2-RC-TE-2324	RC/RVLIS TEMP	13075-FM-093D2/06/E4	CONTMT	274'	11	S R --	ON	ON	YES	12050-RC-137/5	N/A	
3040	1, 2	19	2-RC-TE-2325	RC/RVLIS TEMP	13075-FM-093D2/06/E4	CONTMT	259'	11.6	S R --	ON	ON	YES	12050-RC-137/5	N/A	
3041	1, 2	19	2-RC-TE-2326	RC/RVLIS TEMP	13075-FM-093D2/06/D4	CONTMT	244'	16	S R --	ON	ON	YES	12050-RC-137/5	N/A	
3023	1, 2	19	2-RC-TE-2327	RC/RVLIS TEMP	13075-FM-093D1/06/C8	CONTMT	216'	1	S R --	ON	ON	YES	12050-RC-137/5	N/A	
3025	1, 2	19	2-RC-TE-2328	RC/RVLIS TEMP	13075-FM-093D1/06/B8	CONTMT	244'	1	S R --	ON	ON	YES	12050-RC-137/5	N/A	
3026	1, 2	19	2-RC-TE-2329	RC/RVLIS TEMP	13075-FM-093D1/06/A7	CONTMT	259'	16.5	S R --	ON	ON	YES	12050-RC-137/5	N/A	
4284	1, 2	19	2-RC-TE-2410	RC/LOOP 1 COLD LEG TEMP (T-COLD)	12050-FM-093A1/24/C8	CONTMT	241'	10.7	S R --	ON	ON	YES	12050-RC-116/9	N/A	
4283	1, 2	19	2-RC-TE-2413	RC/LOOP 1 HOT LEG TEMP (T-HOT)	12050-FM-093A1/24/E6	CONTMT	241'	2	S R --	ON	ON	YES	12050-RC-119/11	N/A	

NORTH ANNA UNIT 2  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
SEISMIC REVIEW SSEL  
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LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D & SUPPORTING COMPONENTS	INTERCONNECTIONS	REG. ISSUE
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(17)
4288	1, 2	19	2-RC-TE-2420	RC/LOOP 2 COLD LEG TEMP (T-COLD)	12050-FM-093A2/24/C8	CONTMT	241'	12.3	S R --	ON	ON	YES	12050-RC-117/9	N/A		
4287	1, 2	19	2-RC-TE-2423	RC/LOOP 2 HOT LEG TEMP (T-HOT)	12050-FM-093A2/24/E6	CONTMT	241'	14	S R --	ON	ON	YES	12050-RC-120/9	N/A		
4292	1, 2	19	2-RC-TE-2430	RC/LOOP 3 COLD LEG TEMPERATURE (T-COLD)	12050-FM-093A3/26/D2	CONTMT	241'	7.5	S R --	ON	ON	YES	12050-RC-118/10	N/A		
4291	1, 2	19	2-RC-TE-2433	RC/LOOP 3 HOT LEG TEMPERATURE (T-HOT)	12050-FM-093A3/26/E5	CONTMT	241'	8	S R --	ON	ON	YES	12050-RC-121/11	N/A		
4284A	1, 2	19	2-RC-TR-2410	RC/LP1, CHI, HOT/COLD LEG TEMP	12050-RC-116, 119	SB	277'	CR	S R --	ON	ON	YES	N/A	2-EI-CB-03		
4288A	1, 2	19	2-RC-TR-2420	RC/LOOP 2 WIDE RANGE HOT/COLD LEG TEMP	12050-RC-117, 120	SB	277'	CR	S R --	ON	ON	YES	N/A	2-EI-CB-03		
4292A	1, 2	19	2-RC-TR-2430	RC/LOOP 3 WID' RANGE HOT/COLD LEG TEMP	12050-FM-118, 121	SB	277'	CR	S R --	ON	ON	YES	N/A	2-EI-CB-03		
4257	1, 2	19	2-RH-TE-2604	RH/RHR HX INLET TEMPERATURE	12050-FM-094A2/14/C8	CONTMT	231'	1	S R --	ON	ON	YES	12050-RH-002	N/A		
4264	1, 2	19	2-RH-TE-2606	RH/RHR HX OUTLET TEMPERATURE	12050-FM-094A2/14/C4	CONTMT	216'	3.8	S R --	ON	ON	YES	12050-RH-003/3	N/A		
1158	1	20	1-CH-LI-1102	CH/BAST C LEVEL	11715-CH-039/3	SB	277'	CR	S R --	ON	ON	YES	N/A	N/A		
1157	2	20	1-CH-LI-1163	CH/BAST B LEVEL	11715-CH-048/3	SB	277'	CR	S R --	ON	ON	YES	N/A	N/A		
1159	1	20	1-CH-LI-1165	CH/BAST C LEVEL	11715-CH-040/4	SB	277'	CR	S R --	ON	ON	YES	N/A	N/A		
5565*	1	20	1-EP-CB-12AN	EP/HEAT TRACE DISTRIBUTION CABINET	12050-FE-063 SERIES	AUX	259'		S R 30	ON	ON	YES	N/A	N/A		
5566*	1	20	1-EP-CB-12BN	EP/HEAT TRACE DISTRIBUTION CABINET	12050-FE-063 SERIES	AUX	259'		S R 30	ON	ON	YES	N/A	N/A		
5004	1	20	2-CC-FI-200A	CC/CCW HX OUTLET FLOW	11715-FM-079A2/18/F4	SB	277'	CR	S R 36	ON	ON	YES	12050-CC-002/4	2-EI-CB-04		
5008	1	20	2-CC-FI-200B	CC/CCW HX OUTLET FLOW	11715-FM-079A2/18/D4	SB	277'	CR	S R 36	ON	ON	YES	12050-CC-002/4	2-EI-CB-04		
5055	1	20	2-CC-FI-232A-1	CC/CC HX FLOW TO RHR HX	12050-FM-079A1/19/F6	SB	277'	CR	S R 36	ON	ON	YES	N/A	2-EI-CB-04		
5063	1	20	2-CC-FI-232B-1	CC/CC HX FLOW TO RHR HX	12050-FM-079A1/19/F5	SB	277'	CR	S R 36	ON	ON	YES	N/A	2-EI-CB-04		
5012	1	20	2-CC-P1-200	CC/CCW HX OUTLET PRESSURE	11715-FM-079A2/18/D3	SB	277'	CR	S R 36	ON	ON	YES	12050-CC-096/3	2-EI-CB-04		
5010	1	20	2-CC-TI-200	CC/CCW HX OUTLET TEMP	11715-FM-079A2/18/D3	SB	277'	CR	S R 36	ON	ON	YES	12050-CC-082/3	2-EI-CB-04		
5053	1	20	2-CC-TI-201A	CC/CCW PUMPS SUCTION HEADER TEMP	11715-FM-079A2/18/C7	SB	277'	CR	S R 36	ON	ON	YES	12050-CC-083/3	2-EI-CB-04		
5061	1	20	2-CC-TI-249A	CC/RHR HX COOLING WATER OUTLET TEMP	12050-FM-079A1/19/A8	SB	277'	CR	S R 36	ON	ON	YES	12050-CC-079/2	2-EI-CB-04		
5069	1	20	2-CC-TI-249B	CC/RHR HX COOLING WATER OUTLET TEMP	12050-FM-079A1/19/C7	SB	277'	CR	S R 36	ON	ON	YES	12050-CC-080/2	2-EI-CB-04		
1084	1	20	2-CH-FC-2122C	CH/CHARGING FLOW TO REGEN HX	12050-CH-001/6	SB	277'	CR	S R --	ON	ON	YES	N/A	N/A		

NORTH ANGA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 SEISMIC REVIEW SSEL  
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LINE NO.	EQUIP TRAIN	CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1177	1	20	2-CH-FI-2110	CH/BAST TO VCT FLOW	12050-CH-015/4	SB	277'	CR	S R	--	ON	ON	YES	N/A	N/A	
1083	1	20	2-CH-FI-2122A	CH/CHARGING FLOW TO REGEN HX	12050-CH-001/6	SB	277'	CR	S R	36	ON	ON	YES	N/A	2-EI-CB-03	
1105	1, 2	20	2-CH-FI-2124A	CH/RCP SEAL WATER INJECTION FLOW	12050-CH-058/4	SB	277'	CR	S R	20,36	ON	ON	YES	N/A	2-EI-CB-03	
1107	1, 2	20	2-CH-FI-2127A	CH/RCP SEAL WATER INJECTION FLOW	12050-CH-059/5	SB	277'	CR	S R	20,36	ON	ON	YES	N/A	2-EI-CB-03	
1109	1, 2	20	2-CH-FI-2130A	CH/RCP SEAL WATER INJECTION FLOW	12050-CH-060/4	SB	277'	CR	S R	20,36	ON	ON	YES	N/A	2-EI-CB-03	
1053	1	20	2-CH-LI-2112	CH/VCT LEVEL	12050-CH-011/8	SB	277'	CR	S R	--	ON	ON	YES	N/A	N/A	
1051	1	20	2-CH-LI-2115	CH/VCT LEVEL	12050-CH-012/4	SB	277'	CR	S R	--	ON	ON	YES	N/A	N/A	
1088	1	20	2-CH-TI-2123	CH/REGEN HX OUTLET CHARGING TEMP	12050-CH-002/4	SB	277'	CR	S R	36	N/A	N/A	YES	N/A	2-EI-CB-03	
4123	1	20	2-CN-LI-200B-1	CN/CONDENSATE STORAGE TANK LEVEL	12050-CN-001/8	SB	276'	B/C	S R	36	ON	ON	YES	N/A	2-EI-CB-04	
4105	1	20	2-CN-LI-204	CN/CONDENSATE STORAGE TANK LEVEL	12050-CN-002/5	SB	277'	CR	S R	--	ON	ON	YES	N/A	N/A	
5143	1	20	2-EI-CB-01	EI/BENCH BOARD 2-1	11715-FE-027B/33	SB	277'	CR	S R	--	N/A	N/A	YES	N/A	N/A	
5144	1	20	2-EI-CB-02	EI/BENCH BOARD 2-2	11715-FE-027B/33	SB	277'	CR	S R	--	N/A	N/A	YES	N/A	N/A	
5145	1	20	2-EI-CB-03	EI/VERTICAL BOARD 2-1	11715-FE-027B/33	SB	277'	CR	S R	--	N/A	N/A	YES	N/A	N/A	
5146	1	20	2-EI-CB-04	EI/VERTICAL BOARD 2-2	11715-FE-027B/33	SB	277'	CR	S R	--	N/A	N/A	YES	N/A	N/A	
5147	1	20	2-EI-CB-05	EI/VERTICAL BOARD 2-3	11715-FE-027B/33	SB	277'	CR	S R	--	N/A	N/A	YES	N/A	N/A	
5148	1	20	2-EI-CB-06A	EI/AUXILIARY SHUTDOWN PANEL	12050-FE-027A/20	SB	254'	EMER SWGR	S R	--	N/A	N/A	YES	N/A	N/A	
5149	1	20	2-EI-CB-06B	EI/AUXILIARY SHUTDOWN PANEL	12050-FE-027A/20	SB	254'	EMER SWGR	S R	--	N/A	N/A	YES	N/A	N/A	
5191G	1	20	2-EI-CB-115A	EI/CONT ISOL TRIP VALVE RELAY PANEL A	12050-FE-18BK	AUX	261'	CABLE TUNNEL #2	S R	6,41	N/A	N/A	YES	N/A	N/A	
5191K	1	20	2-EI-CB-116A	EI/CONT ISOL TRIP VALVE RELAY PANEL B	12050-FE-18BK	AUX	259'	CABLE TUNNEL #2	S R	6,41	N/A	N/A	YES	N/A	N/A	
5184B	1	20	2-EI-CB-202	EI/EMERG SWGR RM DG ISOL PANEL (H-TRAIN)	12050-FE-027A/20	SB	254'	EMER SWGR	S R	6,41	N/A	N/A	YES	N/A	N/A	
5153	1	20	2-EI-CB-21	EI/HATHAWAY PANELS	11715-FE-027B/33	SB	277'	LOGIC	S R	--	N/A	N/A	YES	N/A	N/A	
5154	1	20	2-EI-CB-21A	EI/CONTROL PANEL	DWG NOT AVAILABLE	SB	277'	B, 4/D	S R	--	N/A	N/A	YES	N/A	N/A	
5155	1	20	2-EI-CB-23A	EI/PROCESS CABINET A	12050-FE-027A/20	SB	252'	IRR #2	S R	41	N/A	N/A	YES	N/A	N/A	
5156	1	20	2-EI-CB-23B	EI/PROCESS CABINET B	12050-FE-027A/20	SB	252'	IRR #2	S R	41	N/A	N/A	YES	N/A	N/A	
5157	1	20	2-EI-CB-23C	EI/PROCESS CABINET C	12050-FE-027A/20	SB	252'	IRR #2	S R	41	N/A	N/A	YES	N/A	N/A	

NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 SEISMIC REVIEW SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NAA\_SSEL.DBF / 05/20/97 / 13:04:12  
 Sort Criteria: Class, ID Number  
 Filter Criteria: (Eval. Type CONTAINS 'S')  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Fir. Elev.	LOCATION Rm. or Row/Col	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10) (11)	(12)	(13)	(14)	(15)	(16)	(17)
5158	1 20	2-EI-CB-23D	EI/PROCESS CABINET D	12050-FE-027A/20	SB	252'	IRR #2	S R	41	N/A	N/A	YES	N/A	N/A	
5159	1 20	2-EI-CB-23E	EI/PROCESS CABINET E	12050-FE-027A/20	SB	252'	IRR #2	S R	41	N/A	N/A	YES	N/A	N/A	
5160	1 20	2-EI-CB-23F	EI/PROCESS CABINET F	12050-FE-027A/20	SB	252'	IRR #2	S R	41	N/A	N/A	YES	N/A	N/A	
5161	1 20	2-EI-CB-25	EI/CONTROL PANEL	11715-FE-027B/33	SB	277'	LOGIC	S R	--	N/A	N/A	YES	N/A	N/A	
5162	1 20	2-EI-CB-300	EI/ICCM DISPLAY POWER SUPPLY - TRAIN A & B	DWG NOT AVAILABLE	SB	277'	8.8/D	S R	--	N/A	N/A	YES	N/A	N/A	
5163	1 20	2-EI-CB-301C	EI/CONTROL PANEL	12050-FE-027A/20	SW	252'	10.8/C	S R	--	N/A	N/A	YES	N/A	N/A	
5164	1 20	2-EI-CB-34	EI/POST ACCIDENT MONITORING & CONTROL PANEL	11715-FE-027B/33	SB	277'	CR	S R	--	N/A	N/A	YES	N/A	N/A	
5165	1 20	2-EI-CB-47A	EI/SOLID STATE PROTECTION INPUT CABINET TRAIN A	12050-1.31 SERIES	SB	252'	IRR #2	S R	41	N/A	N/A	YES	N/A	N/A	
5166	1 20	2-EI-CB-47B	EI/SOLID STATE PROTECTION INPUT CABINET (TRAIN B)	12050-1.31 SERIES	SB	252'	IRR #2	S R	41	N/A	N/A	YES	N/A	N/A	
5167	1 20	2-EI-CB-47C	EI/SOLID STATE PROTECTION LOGIC CABINET (TRAIN A)	12050-1.31 SERIES	SB	252'	IRR #2	S R		N/A	N/A	YES	N/A	N/A	
5168	1 20	2-EI-CB-47D	EI/SOLID STATE PROTECTION LOGIC CABINET (TRAIN B)	12050-1.31 SERIES	SB	252'	IRR #2	S R		N/A	N/A	YES	N/A	N/A	
5169	1 20	2-EI-CB-47E	EIP/SOLID STATE PROTECTION OUTPUT CABINET (TRAIN A)	12050-1.31 SERIES	SB	252'	IRR #2	S R	41	N/A	N/A	YES	N/A	N/A	
5170	1 20	2-EI-CB-47F	EI/SOLID STATE PROTECTION OUTPUT CABINET (TRAIN B)	12050-1.31 SERIES	SB	252'	IRR #2	S R	41	N/A	N/A	YES	N/A	N/A	
5171	1 20	2-EI-CB-48A	EI/AUXILIARY RELAY RACK I	12050-FE-027A/20	SB	252'	IRR #2	S R	41	N/A	N/A	YES	N/A	N/A	
5172	1 20	2-EI-CB-51	EI/PRIMARY PLANT PROCESS CABINET 1	12050-FE-027A/20	SB	252'	IRR #2	S R	--	N/A	N/A	YES	N/A	N/A	
5173	1 20	2-EI-CB-52	EI/PRIMARY PLANT PROCESS CABINET 2	12050-FE-027A/20	SB	252'	IRR #2	S R	--	N/A	N/A	YES	N/A	N/A	
5174	1 20	2-EI-CB-53	EI/PRIMARY PLANT PROCESS CABINET 3	12050-FE-027A/20	SB	252'	IRR #2	S R	--	N/A	N/A	YES	N/A	N/A	
5175	1 20	2-EI-CB-54	EI/PRIMARY PLANT PROCESS CABINET 4	12050-FE-027A/20	SB	252'	IRR #2	S R	--	N/A	N/A	YES	N/A	N/A	
5176	1 20	2-EI-CB-55	EI/PRIMARY PLANT PROCESS CABINET 5	12050-FE-027A/20	SB	252'	IRR #2	S R	--	N/A	N/A	YES	N/A	N/A	
5177	1 20	2-EI-CB-56	EI/PRIMARY PLANT PROCESS CABINET 6	12050-FE-027A/20	SB	252'	IRR #2	S R	--	N/A	N/A	YES	N/A	N/A	
5178	1 20	2-EI-CB-57	EI/PRIMARY PLANT PROCESS CABINET 7	12050-FE-027A/20	SB	252'	IRR #2	S R	--	N/A	N/A	YES	N/A	N/A	
5179	1 20	2-EI-CB-58	EI/PRIMARY PLANT PROCESS CABINET 8	12050-FE-027A/20	SB	252'	IRR #2	S R	--	N/A	N/A	YES	N/A	N/A	
5180	1 20	2-EI-CB-62A	EI/SAFEGUARDS TEST CABINET A	12050-1.31 SERIES	SB	252'	IRR #2	S R	--	N/A	N/A	YES	N/A	N/A	

NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 SEISMIC REVIEW SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA2\_SSEL.DBF / 05/20/97 / 13:04:12  
 Sort Criteria: Class, ID Number  
 Filter Criteria: (Eval. Type CONTAINS 'S')  
 Program File Name & Version: SSEM 2.2

LINE NO.	TRAIN	EQUIP CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No /Rev./Zone	Building	EQUIPMENT Flr.Elv.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
5181	1	20	2-EI-CB-62B	EI/SAFEGUARDS TEST CABINET B	12050-1.31 SERIES	SB	252'	IRR #2	S R	--	N/A	N/A	YES	N/A	N/A	
5182	1	20	2-EI-CB-64A	EI/SOLID STATE PROT SYS AUX RELAY RACK	12050-1.28-45B	SB	252'	IRR #2	S R	41	N/A	N/A	YES	N/A	N/A	
5182	1	20	2-EI-CB-64B	EI/SOLID STATE PROT SYS AUX RELAY RACK	12050-1.28-45B	SB	252'	IRR #2	S R	41	N/A	N/A	YES	N/A	N/A	
5184	1	20	2-EI-CP-04	CI/MICROPROCESSOR CABINET	11715-FE-027B/33	SB	277'	CR	S R	--	N/A	N/A	YES	N/A	N/A	
5185	1	20	2-EP-CB-10C	EP/PZR DISTRIBUTION PANEL #2	DWG NOT AVAILABLE	AUX	280'	RCRM/12/JK	S R	--	N/A	N/A	YES	12050-RC-108/8	N/A	
5186	1	20	2-EP-CB-10F	EP/RCS PZR CONTROL PANEL	DWG NOT AVAILABLE	AUX	280'	RCRM/12/	S R	--	N/A	N/A	YES	12050-RC-108/8	N/A	
5191I	1	20	2-EP-CB-121A	EP/CONT ISOL TRIP VALVE RELAY PANEL	13075-FE-3MF	SB	277'	COMPUTER RM #2	S R	6,41	N/A	N/A	YES	12050-SS-007/5	2-EP-CB-19A	
5191J	1	20	2-EP-CB-121B	EP/CONT ISOL TRIP VALVE RELAY PANEL	13075-FE-3MF	SB	277'	COMPUTER RM #2	S R	6,41	N/A	N/A	YES	12050-SS-007/5	2-EP-CB-19B	
5187	1	20	2-EP-CB-204	EP/APPENDIX R ISOL PANEL	12050-FE-027A/20	SB	254'	EMER SWGR	S R	--	N/A	N/A	YES	N/A	N/A	
5188	1	20	2-EP-CB-28A	EP/AUXILIARY RELAY RACK A	12050-FE-027A/20	SB	252'	IRR #2	S R	41	N/A	N/A	YES	N/A	N/A	
5189	1	20	2-EP-CB-28B	EP/AUXILIARY RELAY RACK B	12050-FE-027A/20	SB	252'	IRR #2	S R	41	N/A	N/A	YES	N/A	N/A	
5191H	1	20	2-EP-CB-28BT	EP/CONT ISOL TRIP VALVE RELAY PANEL	12050-FE-3KJ/6/2F	SB	252'	CABLE VAULT #2	S R	6,41	N/A	N/A	NO	12050-RC-148/2	N/A	
5190	1	20	2-EP-CB-28C	EP/AUXILIARY RELAY RACK C	12050-FE-027A/20	SB	252'	IRR #2	S R		N/A	N/A	YES	N/A	N/A	
5190A	1	20	2-EP-CB-28E	EP/AUXILIARY RELAY RACK E	12050-FE-027B/20	SB	252'	IRR #2	S R	6,41	N/A	N/A	YES	N/A	N/A	
5190B	1	20	2-EP-CB-28F	EP/AUXILIARY RELAY RACK F	12050-FE-027A/20	SB	252'	IRR #2	S R	6,41	N/A	N/A	YES	N/A	N/A	
5190C	1	20	2-EP-CB-28G	EP/AUXILIARY RELAY RACK G	12050-FE-027A/20	SB	252'	IRR #2	S R	6,41	N/A	N/A	YES	N/A	N/A	
5191	1	20	2-EP-CB-28H	EP/SW LOGIC CABINET 2A	12050-FE-027A/20	SB	252'	IRR #2	S R	41	N/A	N/A	YES	N/A	N/A	
5191B	1	20	2-EP-CB-28J	EP/SW LOGIC CABINET 2B	12050-FE-027A/20	SB	252'	IRR #2	S R	6,41	N/A	N/A	YES	N/A	N/A	
5597*	1	20	2-EP-CB-42N1	EP/HEAT TRACE CONTROL CABINET	12050-FE-063 SERIES	AFPH	271'	--	S R	30	ON	ON	YES	N/A	N/A	
5598*	2	20	2-EP-CB-42R1	EP/HEAT TRACE CONTROL CABINET	12050-FE-063 SERIES	AFPH	271'	--	S R	30	ON	ON	YES	N/A	N/A	
5603*	1, 2	20	2-EP-CB-46A	/ANNUNCIATOR CABINET - 46	DWG NOT AVAILABLE	AFPH	271'	--	S R	--	ON	ON	YES	N/A	N/A	
5191E	1	20	2-EP-CB-63A	EP/LOOP STOP VALVE LOGIC CABINET RACK A	12050-1.32 SERIES	SB	252'	IRR #2	S R	6	N/A	N/A	YES	N/A	N/A	
5191F	1	20	2-EP-CB-63B	EP/LOOP STOP VALVE LOGIC CABINET RACK B	12050-1.32 SERIES	SB	252'	IRR #2	S R	6	N/A	N/A	YES	N/A	N/A	

NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 SEISMIC REVIEW SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA2 SSEL.DBF / 05/20/97 / 13:04:12  
 Sort Criteria: Class, ID Number  
 Filter Criteria: (Eval. Type CONTAINS 'S')  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN	CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Fir. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING SYS. DMG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
6036	1	20	2-EP-DB-16A	EP/120V SEMI-VITAL AC BUS DISTRIBUTION	12050-FE-001AJ1/00/F SB -4,8		254'	11/D	S R	--	N/A	N/A	YES	N/A	TRANS-118-2	
6038	2	20	2-EP-DB-16B	EP/120V SEMI-VITAL AC BUS DISTRIBUTION	12050-FE-001AJ1/00/D SB -4,8		254'	11/D	S R	--	N/A	N/A	YES	N/A	TRANS-119-2	
4178	1	20	2-FW-FI-200A	FW/AFWP TO SG A FLOW	12050-FM-074A1/27/D6 SB		277'	CR	S R	36	ON	ON	YES	12050-FW-050/6	2-EI-CB-04	
4162	2	20	2-FW-FI-200B	FW/AFWP TO SG B FLOW	12050-FM-074A1/27/C6 SB		277'	CR	S R	36	ON	ON	YES	12050-FW-051/6	2-EI-CB-04	
4166	2	20	2-FW-FI-200C	FW/AFWP TO SG C FLOW	12050-FM-074A1/27/B7 SB		277'	CR	S R	36	ON	ON	YES	12050-FW-052/6	2-EI-CB-04	
4186	1	20	2-FW-LI-2474	FW/SG A LEVEL	12050-FM-074A1/27/E7 SB		277'	CR	S R	36	ON	ON	YES	12050-FW-091/8	2-EI-CB-04	
4188	1	20	2-FW-LI-2475	FW/SG A LEVEL	12050-FM-074A1/27/E6 SB		276'	8/C	S R	36	ON	ON	YES	12050-FW-097/7	2-EI-CB-04	
4190	1	20	2-FW-LI-2476	FW/SG A LEVEL	12050-FM-074A1/27/E6 SB		276'	8/C	S R	36	ON	ON	YES	12050-FW-103/7	2-EI-CB-04	
4198	2	20	2-FW-LI-2484	FW/SG B LEVEL	12050-FM-074A1/27/D7 SB		277'	CR	S R	36	ON	ON	YES	12050-FW-093/7	2-EI-CB-04	
4200	2	20	2-FW-LI-2485	FW/SG B LEVEL	12050-FM-074A1/27/D6 SB		276'	8/C	S R	36	ON	ON	YES	12050-FW-099/7	2-EI-CB-04	
4202	2	20	2-FW-LI-2486	FW/SG B LEVEL	12050-FM-074A1/27/D6 SB		276'	8/C	S R	36	ON	ON	YES	12050-FW-105/7	2-EI-CB-04	
4208	3	20	2-FW-LI-2494	FW/SG C LEVEL	12050-FM-074A1/27/C7 SB		276'	8/C	S R	36	ON	ON	YES	12050-FW-095/7	2-EI-CB-04	
4210	3	20	2-FW-LI-2495	FW/SG C LEVEL	12050-FM-074A1/27/C7 SB		276'	8/C	S R	36	ON	ON	YES	12050-FW-101/8	2-EI-CB-04	
4212	3	20	2-FW-LI-2496	FW/SG C LEVEL	12050-FM-074A1/27/C6 SB		276'	8/C	S R	36	ON	ON	YES	12050-FW-107/7	2-EI-CB-04	
4180	1, 2	20	2-FW-LR-2477	FW/SG 2A,B,C WIDE RANGE LVL	12050-FM-074A1/27/E8 SB		277'	CR	S R	--	ON	ON	YES	N/A	2-EI-CB-04	
4149	2	20	2-FW-PI-201A-1	FW/AFWP TO SG B PRESSURE	12050-FM-074A3/29/F8 SB		277'	CR	S R	36	ON	ON	YES	12050-FW-016/4	2-EI-CB-04	
4148	2	20	2-FW-PI-201A-2	FW/AFWP TO SG B PRESSURE	12050-FM-074A3/29/F8 SB		254'	SWGR RM	S R	--	ON	ON	YES	12050-FW-016/4	2-EI-CB-06B	
4153	2	20	2-FW-PI-201B-1	FW/AFWP TO SG C PRESSURE	12050-FM-074A3/29/E8 SB		277'	CR	S R	36	ON	ON	YES	12050-FW-017/4	2-EI-CB-04	
4157	1	20	2-FW-PI-201C-	FW/AFWP TO SG A PRESSURE	12050-FM-074A3/29/E8 SB		254'	SWGR RM	S R	--	ON	ON	YES	12050-FW-150/5	N/A	
4154	2	20	2-FW-PI-201C-1	FW/AFWP TO SG A PRESSURE	12050-FM-074A3/29/E8 SB		254'	SWGR RM	S R	--	ON	ON	YES	12050-FW-017/4	2-EI-CB-06B	
4156	1	20	2-FW-PI-201C-1	FW/AFWP TO SG A PRESSURE	12050-FM-074A3/29/E8 SB		277'	CR	S R	--	ON	ON	YES	12050-FW-150/5	N/A	
4138	1	20	2-FW-PI-203A	FW/MDAFWP SUCTION PRESSURE	12050-FM-074A3/29/C7 SB		277'	CR	S R	36	ON	ON	YES	12050-FW-001/3	2-EI-CB-04	
4132	2	20	2-FW-PI-203B	FW/MDAFWP SUCTION PRESSURE	12050-FM-074A3/29/C6 SB		277'	CR	S R	36	ON	ON	YES	12050-FW-002/4	2-EI-CB-04	
4126	2	20	2-FW-PI-203C	FW/MDAFWP SUCTION PRESSURE	12050-FM-074A3/29/C5 SB		277'	CR	S R	36	ON	ON	YES	12050-FW-003/4	2-EI-CB-04	
2041	1	20	2-GN-PI-234A	GN/N2 RESERVE PRESSURE	12050-GN-004/2 SB		274'	CR	S R	--	ON	ON	YES	N/A	N/A	
2043	2	20	2-GN-PI-234B	GN/N2 RESERVE PRESSURE	12050-GN-005/2 SB		274'	CR	S R	--	ON	ON	YES	N/A	N/A	

NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 SEISMIC REVIEW SSEL  
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 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	OP. ST.	POWER REQ'D	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE				
(1)	(2)	(3)	(4)	(6)	(7)	(8)	(9)	Normal	Desired	(14)	(15)	(16)	(17)			
4004	1	20	2-MS-PI-2474	MS/SG A STEAM PRESSURE	12050-FM-070B1/18/E7	SB	276'	8/C	S R	9,36	ON	ON	YES	12050-MS-158/4	2-EI-CB-04	
4006	2	20	2-MS-PI-2476	MS/SG A STEAM PRESSURE	12050-FM-070B1/18/C6	SB	276'	8/C	S R	9,36	ON	ON	YES	12050-MS-162/5	2-EI-CB-04	
4032	1	20	2-MS-PI-2485	MS/SG B STEAM PRESSURE	12050-FM-070B2/20/B7	SB	276'	8/C	S R	9,36	ON	ON	YES	12050-MS-164/4	2-EI-CB-04	
4034	2	20	2-MS-PI-2486	MS/SG B STEAM PRESSURE	12050-FM-070B2/20/B6	SB	276'	8/C	S R	9,36	ON	ON	YES	12050-MS-168/5	2-EI-CB-04	
4060	2	20	2-MS-PI-2494	MS/SG C STEAM PRESSURE	12050-FM-070B3/19/B7	SB	276'	8/C	S R	9,36	ON	ON	YES	12050-MS-170/4	2-EI-CB-04	
4062	1	20	2-MS-PI-2496	MS/SG C STEAM PRESSURE	12050-FM-070B3/19/B6	SB	276'	8/C	S R	9,36	ON	ON	YES	12050-MS-174/6	2-EI-CB-04	
4008	1	20	2-MS-PIC-201A	MS/SG A STEAM PRESSURE	12050-FM-070B1/18/C6	SB	277'	CR	S R	--	ON	ON	YES	N/A	N/A	
4036	2	20	2-MS-PIC-201B	MS/SG B STEAM PRESSURE	12050-FM-070B2/20/C5	SB	277'	CR	S R	--	ON	ON	YES	N/A	N/A	
4064	3	20	2-MS-PIC-201C	MS/SG C STEAM PRESSURE	12050-FM-070B3/19/B6	SB	277'	CR	S R	--	ON	ON	YES	N/A	N/A	
3055	1, 2	20	2-QS-LI-200A	QS/RWST LEVEL	12050-FM-091A1/20/D8	SB	276'	CR	S R	36	ON	ON	YES	12050-QS-003/8	2-EI-CB-05	
3056	1, 2	20	2-QS-LI-200B	QS/RWST LEVEL	12050-FM-091A1/20/D6	SB	276'	CR	S R	36	ON	ON	YES	12050-QS-004/8	2-EI-CB-05	
3057	1, 2	20	2-QS-LI-200C	QS/RWST LEVEL	12050-FM-091A1/20/D8	SB	276'	CR	S R	36	ON	ON	YES	12050-QS-016/9	2-EI-CB-05	
3058	1, 2	20	2-QS-LI-200D	QS/RWST LEVEL	12050-FM-091A1/20/D6	SB	276'	CR	S R	36	ON	ON	YES	12050-QS-017/8	2-EI-CB-05	
2008	2	20	2-RC-HC1*	RC/PZR HEATER CONTROL #1	12050-FM-093B1/25/B4	AUX	274'	CRD ROOM #2	S R	--	ON	ON	YES	N/A	N/A	
2009	2	20	2-RC-HC2*	RC/PZR HEATER CONTROL #2	12050-FM-093B1/25/B4	AUX	274'	CRD ROOM #2	S R	--	ON	ON	YES	N/A	N/A	
3006	1, 2	20	2-RC-LI-2459A	RC/PZR LEVEL IND CH I	12050-RC-061/8	SB	277'	CR	S R	--	ON	ON	YES	N/A	2-EI-CB-03	
3006A	1, 2	20	2-RC-LI-2459B	RC/PZR LEVEL IND CH I	12050-RC-061/8	SB	254'	EM SWGR #2	S R	--	ON	ON	YES	N/A	2-EI-CB-06A	
3008	1, 2	20	2-RC-LI-2460	RC/PZR LEVEL IND CH II	12050-RC-062/7	SB	277'	CR	S R	--	ON	ON	YES	N/A	2-EI-CB-03	
3010	1, 2	20	2-RC-LI-2461	RC/PZR LEVEL IND CH III	12050-RC-063/8	SB	277'	CR	S R	--	ON	ON	YES	N/A	2-EI-CB-03	
3012	2	20	2-RC-LI-2462	RC/PZR LEVEL-COLD CAL (STUP)	12050-RC-064/4	SB	277'	CR	S R	--	ON	ON	YES	N/A	2-EI-CB-03	
2028	1, 2	20	2-RC-LI-2470	RC/PRT LEVEL	12050-RC-035/3	SB	277'	CR	S R	36	ON	ON	YES	N/A	2-EI-CB-03	
2003	1	20	2-RC-PI-2402A	RC/REACTOR COOLANT WR PRESSURE	12050-RC-126/11	SB	276'	8/B	S R	36	ON	ON	YES	N/A	2-EI-CB-03	
2004	1	20	2-RC-PI-2402B	RC/REACTOR COOLANT WR PRESSURE	12050-RC-126/11	SB	276'	8/B	S R	36	ON	ON	YES	N/A	2-EI-CB-03	
2017	2	20	2-RC-PI-2444	RC/PZR PRESSURE	12050-RC-107/4	SB	277'	CR	S R	--	ON	ON	YES	N/A	N/A	
2019	2	20	2-RC-PI-2445	RC/PZR PRESSURE	12050-RC-105/4	SB	277'	CR	S R	--	ON	ON	YES	N/A	N/A	
2011	2	20	2-RC-PI-2455	RC/PZR PRESSURE	12050-RC-069/8	SB	277'	CR	S R	36	ON	ON	YES	N/A	2-EI-CB-03	
2013	2	20	2-RC-PI-2456	RC/PZR PRESSURE	12050-RC-071/8	SB	277'	CR	S R	36	ON	ON	YES	N/A	2-EI-CB-03	

NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
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LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. or Row/Col.	SORT	NOTES	OP. Normal	ST. Desired	POWER REQ'D?	SUPPORTING DWG. NO./REV.	SYS. & SUPPORTING COMPONENTS	REQ'D INTERCONNECTIONS	REG. ISSUE
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	
2015	2	20	2-RC-P1-2457	RC/PZR PRESSURE	12050-RC-073/B	SB	277'	CR	S R 36	ON	ON	YES	N/A		2-EI-CB-03	
2026	1, 2	20	2-RC-P1-2472	RC/PRY PRESSURE	12050-RC-041/3	SB	277'	CR	S R 36	ON	ON	YES	N/A		2-EI-CB-03	
30218	1, 2	20	2-RC-T1-2463	RC/PZR PORV OUTLET TEMP	12050-RC-056/5	SB	277'	CR	S R 36	ON	ON	YES	N/A		2-EI-CB-03	
4263A	1, 2	20	2-RH-F1-2605	RH/RHR HX OUTLET FLOW	12050-RH-004/4	SB	277'	CR	S R --	ON	ON	YES	N/A		N/A	
4257A	1, 2	20	2-RH-TR-2604	RH/RHR HX INLET TEMPERATURE	12050-RH-002/3	SB	277'	CR	S R --	ON	ON	YES	N/A		N/A	
1145	1	21	1-CH-TK-1C	CH/BORIC ACID STORAGE TANK C (BAST)	11715-FM-095A1/22/E7	AUX	274'	9.7/H	S --	N/A	N/A	J	N/A		1-CH-LT-1102/1165; 1-CH-TIC-1103/1166	
5002	1	21	2-CC-E-1A	CC/COMPONENT COOLING WATER HX	11715-FM-079A2/18/E5	AUX	274'	9/G	S --	N/A	N/A	NO	N/A		N/A	
5006	1	21	2-CC-E-1B	CC/COMPONENT COOLING WATER HX	11715-FM-079A2/18/D5	AUX	274'	10.5/F	S --	N/A	N/A	NO	N/A		N/A	
1078	1, 2	21	2-CH-E-1	CH/SEAL WATER HEAT EXCHANGER	12050-FM-095B1/22/B6	AUX	245'	9.5/J	S --	N/A	N/A	NO	12050-CH-001/6	COMPONENT COOLING WATER		
1048	1	21	2-CH-E-3	CH/REGENERATIVE HEAT EXCHANGER	12050-FM-095C1/20/E5	CONTMT	245'	6	S --	N/A	N/A	NO	12050-FM-1C 12050-FM-1G	N/A		
1198	2	21	2-CH-E-4	CH/EXCESS LETDOWN HEAT EXCHANGER	12050-FM-095C1/20/C7	CONTMT	233'	12	S 23	N/A	N/A	NO	N/A		N/A	
1049	1	21	2-CH-TK-2	CH/VOLUME CONTROL TANK (VCT)	12050-FM-095B1/22/C6	AUX	275'	9.1/J	S --	N/A	N/A	NO	N/A		2-CH-LT-2115; 2-CH-LT-2112	
4120	1	21	2-CN-TK-1	CN/CONDENSATE STORAGE TANK	12050-FM-074A3/29/D3	AFPH	271'	16/Q	S --	N/A	N/A	NO	12050-FP-2J	N/A		
5077	1	21	2-DG-E-1	DG/PRIMARY DRAIN TRANSFER COOLER	12050-FM-079A5/17/A6	CONTMT	216'	12.5	S 23	N/A	N/A	NO	N/A		N/A	
4145	1	21	2-FW-E-10	FW/TDAFWP OIL COOLER	12050-FM-074A3/29/D7	AFPH	--	--	S 36	N/A	N/A	NO	N/A		2-FW-P-2	
4144	2	21	2-FW-E-9A	FW/MDAFWP OIL COOLER	12050-FM-074A3/29/D6	AFPH	--	--	S 36	N/A	N/A	NO	N/A		2-FW-P-3A	
4143	2	21	2-FW-E-9B	FW/MDAFWP OIL COOLER	12050-FM-074A3/29/D4	AFPH	--	--	S 36	N/A	N/A	NO	N/A		2-FW-P-3B	
2045	2	21	2-GN-TK-1A	GN/N2 RESERVE TANK	11715-FM-105A1/20/B3	CONTMT	291' 10"	5.5	S --	N/A	N/A	NO	N/A		N/A	
2044	1	21	2-GN-TK-1B	GN/N2 RESERVE TANK	11715-FM-105A1/20/B8	CONTMT	291' 10"	5.5	S --	N/A	N/A	NO	N/A		N/A	
5049	3	21	2-HV-E-6A	HV/SHROUD COOLING COILS	12050-FM-079A2/16/F6	CONTMT	262'	14.8/RC	S 23	N/A	N/A	NO	N/A		N/A	
5050	3	21	2-HV-E-6B	HV/SHROUD COOLING COILS	12050-FM-079A3/17/F6	CONTMT	261'	8/RC	S 23	N/A	N/A	NO	N/A		N/A	
5051	3	21	2-HV-E-6C	HV/SHROUD COOLING COILS	12050-FM-079A4/16/F6	CONTMT	261'	3/RC	S 23	N/A	N/A	NO	N/A		N/A	
5192	1	21	2-HV-TK-6A	HV/CHILLED WATER EXPANSION TANK	11715-FB-040A2/13	SB	254'	CHILLER RM	S --	N/A	N/A	NO	N/A		N/A	
5193	2	21	2-HV-TK-6B	HV/CHILLED WATER EXPANSION TANK	11715-FB-040A2/13	SB	254'	CHILLER RM	S --	N/A	N/A	NO	N/A		N/A	
5082	1	21	2-NS-E-1A	NS/NEUTRON SHIELD TANK COOLER	12050-FM-079A5/17/E7	CONTMT	261'	17.5	S 23	N/A	N/A	NO	N/A		N/A	



NORTH ANNA UNIT 2  
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(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	
5083	1	21	2-NS-E-1B	NS/NEUTRON SHIELD TANK COOLER	12050-FM-079A5/17/E5	CONTMT	261'	17.5	S	23	N/A	N/A	NO	N/A	N/A	N/A	
3050	1, 2	21	2-QS-TK-1	QS/REFUELING WATER STORAGE TANK (RWST)	12050-FM-091A1/20/D7	YARD	--	--	S	--	N/A	N/A	NO	N/A	2-QS-L-200A/B/C/D		
7001	1, 2	21	2-QS-TK-2	QS/REFUELING WATER CHEM ADD TANK	12050-FM-091A1/20/D6	YARD/TUNL	272'	K OF AFPH	S	1	N/A	N/A	NO	N/A	N/A		
2024	1, 2	21	2-RC-TK-2	RC/PRESSURE RELIEF TANK (PRT)	12050-FM-093B2/26/C5	CONTMT	241'	PC 6	S	16	N/A	N/A	NO	12050-FK-1A	N/A		
4256	1	21	2-RH-E-1A	RH/RHR HX A	12050-FM-094A2/14/E8	CONTMT	231'	17	S	--	N/A	N/A	NO	N/A	N/A		
4258	2	21	2-RH-E-1B	RH/RHR HX B	12050-FM-094A2/14/E6	CONTMT	231'	1	S	--	N/A	N/A	NO	N/A	N/A		
4250	1	21	2-RH-E-2A	RH/RHR PUMP A SEAL COOLER	12050-FM-094A1/15/D7	CONTMT	231'	17.5	S	--	N/A	N/A	NO	N/A	MOTHER: 2-RH-P-1A/1B		
4253	2	21	2-RH-E-2B	RH/RHR PUMP B SEAL COOLER	12050-FM-094A1/15/D4	CONTMT	231'	2	S	--	N/A	N/A	NO	N/A	MOTHER: 2-RH-P-1A/1B		
5604	1	21	2-RS-E-1A	RS/INSIDE RECIRC SPRAY COOLER A	12050-FM-091A3/20/C7	CONTMT	216'		S	26	N/A	N/A	NO	11715-FM-078B3	SERVICE WATER		
5605	1	21	2-RS-E-1B	RS/INSIDE RECIRC SPRAY COOLER B	12050-FM-091A3/20/C5	CONTMT	216'		S	26	N/A	N/A	NO	11715-FM-078B3	SERVICE WATER		
5606	2	21	2-RS-E-1C	RS/INSIDE RECIRC SPRAY COOLER C	12050-FM-091A4/21/D8	CONTMT	216'		S	26	N/A	N/A	NO	11715-FM-078B3	SERVICE WATER		
5607	2	21	2-RS-E-1D	RS/INSIDE RECIRC SPRAY COOLER D	12050-FM-091A4/21/D7	CONTMT	216'		S	26	N/A	N/A	NO	11715-FM-078B3	SERVICE WATER		
7034	2	21	2-RS-E-2A*	RS/OUTSIDE RECIRC SPRAY PUMP A SEAL HX	12050-FM-091A4/18/C4	SFGD	267'	3.2/LM	S	1	N/A	N/A	NO	N/A	N/A		
7035	2	21	2-RS-E-2B*	RS/OUTSIDE RECIRC SPRAY PUMP B SEAL HX	12050-FM-091A4/18/C3	SFGD	267'	3.5/JK	S	1	N/A	N/A	NO	N/A	N/A		
7036	2	21	2-RS-TK-1	RS/CASING COOLING TANK	12050-FM-091B1/10/C4	YARD/TUNL	270'	S OF AFPH	S	1	N/A	N/A	NO	N/A	N/A		
7032	2	21	2-RS-TK-1A*	RS/OUTSIDE RECIRC SPRAY PUMP A SEAL TANK	12050-FM-091A4/18/C4	SFGD	267'	PUMP CUBICLE	S	1	N/A	N/A	NO	N/A	N/A		
7033	2	21	2-RS-TK-1B*	RS/OUTSIDE RECIRC SPRAY PUMP B SEAL TANK	12050-FM-091A4/18/C3	SFGD	267'	--	S	1	N/A	N/A	NO	N/A	N/A		
1092A	1	21	2-SI-TK-2	SI/BORON INJECTION TANK (BIT)	12050-FM-096A3/21/D5	AUX	244'	11.5/J	S	23	N/A	N/A	NO	N/A	N/A		
1211	1, 2	21	2-SS-E-10	SS/PZR LIQUID SPACE SAMPLE COOLER	12050-FM-089B1/17/E5	AUX	274'	9/K	S	23	N/A	N/A	NO	N/A	COMPONENT COOLING WATER		
1241	1, 2	21	2-SS-E-12	SS/RC COLD LEG SAMPLE COOLER	12050-FM-089B1/17/E4	AUX	274'	9/K	S	--	N/A	N/A	NO	N/A	COMPONENT COOLING WATER		
5070	1	21	2-SS-E-3A	SS/SAMPLE COOLER	12050-FM-079A1/19/E8	AUX	244'	9/K	S	23	N/A	N/A	NO	N/A	N/A		
5071	1	21	2-SS-E-35	SS/SAMPLE COOLER	12050-FM-079A1/19/E8	AUX	244'	9/K	S	23	N/A	N/A	NO	N/A	N/A		
5072	1	21	2-SS-E-36	SS/SAMPLE COOLER	12050-FM-079A1/19/E8	AUX	244'	9/K	S	23	N/A	N/A	NO	N/A	N/A		
1227	1, 2	21	2-SS-E-4	HRS/HOT LEG SAMPLE COOLER	12050-FM-089B1/17/D5	AUX	274'	9/K	S	--	N/A	N/A	NO	N/A	COMPONENT COOLING WATER		

NORTH ANNA UNIT 2  
SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
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(1)	(2)	(3)	(4)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
4273	1, 2	21	2-SS-E-9	SS/RHR SAMPLE COOLER	12050-FM-089B1/17/E3	AUX	274'	9/K	S	--	N/A	N/A	NO	N/A	COMPONENT COOLING WATER
1264	1, 2	23	2-CR-CRD*	CR*/CONTROL ROD DRIVE MECHANISMS	WESTING 618J795 & 618J796		271'	--	S	1,14, 10	N/A	N/A	NO	N/A	N/A
1280	1, 2	23	2-ND-110U*	ND*/INCORE INST DRIVE UNIT	12050-1.26 SERIES		263'	4	S	1,14, 44	N/A	N/A	NO	N/A	N/A
1284	1, 2	23	2-ND-11GT*	ND*/INCORE INST GUIDE TUBES	12050-1.26 SERIES		217'	4	S	1,14, 44	N/A	N/A	NO	N/A	N/A
1283	1, 2	23	2-ND-11ST*	ND*/INCORE INST SEAL TABLE	12050-1.26 SERIES		263'	4	S	1,14, 44	N/A	N/A	NO	N/A	N/A
1281	1, 2	23	2-ND-11T05*	ND*/INCORE INST 5-PATH TRANSFER	12050-1.26 SERIES		263'	4	S	1,14, 44	N/A	N/A	NO	N/A	N/A
1282	1, 2	23	2-ND-11T10*	ND*/INCORE INST 10-PATH TRANSFER	12050-1.26 SERIES		263'	4	S	1,14, 44	N/A	N/A	NO	N/A	N/A
4002	1	23	2-RC-E-1A	MS/STEAM GENERATOR A	12050-FM-001A/12/F6		291'	2	S	1,14	N/A	N/A	NO	N/A	N/A
4028	2	23	2-RC-E-1B	MS/STEAM GENERATOR B	12050-FM-001A/12/F3		291'	14	S	1,14	N/A	N/A	NO	N/A	N/A
4054	3	23	2-RC-E-1C	MS/STEAM GENERATOR C	12050-FM-001A/12/D5		291'	8	S	1,14	N/A	N/A	NO	N/A	N/A
2007A	1, 2	23	2-RC-E-2	RC/PRESSURIZER	12050-FM-001B/11/F4		283'	9.5	S	1,14	N/A	N/A	NO	N/A	N/A
1268	1, 2	23	2-RC-ES-1	RC/NEUTRON SHIELD TANK	12050-FM-079A5/17		242'	--	S	1,14	N/A	N/A	NO	N/A	N/A
1261	1, 2	23	2-RC-FA*	RC/FUEL ASSEMBLIES	12050-5.13 SERIES		242'	--	S	1,14	N/A	N/A	NO	N/A	N/A
1262	1, 2	23	2-RC-LR1*	RC/LOWER REACTOR INTERNALS	12050-5.11 SERIES		231'	--	S	1,14	N/A	N/A	NO	N/A	N/A
1269	1, 2	23	2-RC-ND1*	RC/NEUTRON DETECTOR	12050-FM-079A5/17		242'	--	S	1,14, 13	N/A	N/A	YES	N/A	N/A
1270	1, 2	23	2-RC-ND2*	RC/NEUTRON DETECTOR	12050-FM-079A5/17		242'	--	S	1,14, 13	N/A	N/A	YES	N/A	N/A
1271	1, 2	23	2-RC-ND3*	RC/NEUTRON DETECTOR	12050-FM-079A5/17		242'	--	S	1,14, 13	N/A	N/A	YES	N/A	N/A
1272	1, 2	23	2-RC-ND4*	RC/NEUTRON DETECTOR	12050-FM-079A5/17		242'	--	S	1,14, 13	N/A	N/A	YES	N/A	N/A
1273	1, 2	23	2-RC-ND5*	RC/NEUTRON DETECTOR	12050-FM-079A5/17		242'	--	S	1,14, 13	N/A	N/A	YES	N/A	N/A
1274	1, 2	23	2-RC-ND6*	RC/NEUTRON DETECTOR	12050-FM-079A5/17		242'	--	S	1,14, 13	N/A	N/A	YES	N/A	N/A

NORTH ANNA UNIT 2  
 SAFE SHUTDOWN EQUIPMENT LIST (SSEL)  
 SEISMIC REVIEW SSEL  
 (Sorted by Equipment Class and Mark Number)

Data Base File Name/Date/Time: NA2\_SSEL.DBF / 05/20/97 / 13:04:12  
 Sort Criteria: Class, ID Number  
 Filter Criteria: (Eval. Type CONTAINS 'S')  
 Program File Name & Version: SSEM 2.2

LINE NO.	EQUIP TRAIN CLASS	MARK NO.	SYSTEM/EQUIPMENT DESCRIPTION	Dwg. No./Rev./Zone	Building	EQUIPMENT Flr. Elev.	LOCATION Rm. nr Row/Col.	SORT NOTES	OP. Normal	ST. Desired	POWER RECD?	SUPPORTING SYS. DWG. NO./REV.	REQ'D INTERCONNECTIONS & SUPPORTING COMPONENTS	REG. ISSUE		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1275	1, 2 23	2-RC-ND7*	RC/NEUTRON DETECTOR	12050-FM-079A5/17	CONTMT	242'	--	S 1,14, 13	N/A	N/A	YES	N/A	N/A	N/A		
1276	1, 2 23	2-RC-ND8*	RC/NEUTRON DETECTOR	12050-FM-079A5/17	CONTMT	242'	--	S 1,14, 13	N/A	N/A	YES	N/A	N/A	N/A		
3021C	1, 2 23	2-RC-P-1A	RC/REACTOR COOLANT PUMP A	12050-FM-093B3/22	CONTMT	262'	1	S R 1,14	ON	OFF	NO	N/A	N/A	N/A		
3021D	1, 2 23	2-RC-P-1B	RC/REACTOR COOLANT PUMP B	12050-FM-093B3/22	CONTMT	262'	12.5	S R 1,14	ON	OFF	NO	N/A	N/A	N/A		
3021E	1, 2 23	2-RC-P-1C	RC/REACTOR COOLANT PUMP C	12050-FM-093B3/22	CONTMT	262'	7	S R 1,14	ON	OFF	NO	N/A	N/A	N/A		
1260	1, 2 23	2-RC-R-1	RC/REACTOR VESSEL	12050-FM-001G/B/C6	CONTMT	256'	--	S 1,14	N/A	N/A	NO	N/A	N/A	N/A		
1263	1, 2 23	2-RC-UR1*	RC/UPPER REACTOR INTERNALS	12050-5.11-SERIES	CONTMT	262'	--	S 1,14	N/A	N/A	NO	N/A	N/A	N/A		

## APPENDIX B

### **Miscellaneous Walkdown Reports**

This Appendix provides the reports of plant area walkdowns (excluding detailed component walkdowns) performed by seismic review teams for miscellaneous IPEEE-Seismic issues, such as seismic induced fire and flood, piping, ducting etc.

## Appendix B: Miscellaneous Walkdown Reports

1. Report on IPEEE Miscellaneous Walkdowns Outside Containments for Units 1 and 2.
2. IPEEE (Seismic) Walkdowns, Reactor Containment Building Unit 1
3. IPEEE (Seismic) Walkdowns, Reactor Containment Building Unit 2
4. Resolution of Miscellaneous IPEEE Issues, Seismic Induced Flood Units 1 and 2
5. Resolution of Miscellaneous IPEEE Issues, Seismic Induced Fire, Units 1 and 2
6. List of Open Action Items for Resolution of Miscellaneous IPEEE issues on Seismic Induced Flood & Fires at NAPA

VIRGINIA POWER

REPORT ON IPEEE MISCELLANEOUS  
WALKDOWNS ON DECEMBER 8, 1994

NORTH ANNA POWER STATION  
UNITS 1 AND 2

DESIGN, ENGINEERING & SUPPORT  
ENGINEERING MECHANICS GROUP

AND

STRUCTURAL MECHANICS CONSULTING, INC.

Prepared By: S. E. Zinkham 12/27/94  
S. E. Zinkham - Virginia Power

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## IPEEE Miscellaneous Seismic Walkdowns at North Anna Power Station

### Introduction/Discussion

NRC's GL 88-20, Supplement 4 and NUREG 1407 provide guidance to address Individual Plant Examination of External Events (IPEEE) for Severe Accident Vulnerabilities. As part of addressing seismic events within IPEEE, plant walkdowns are required. Detailed guidance for these walkdowns is provided in EPRI NP-6041 report. There are several issues that are to be addressed via area walkdowns. A walkdown was conducted for many areas at North Anna Power Station on December 8, 1994 to address these miscellaneous IPEEE(Seismic) issues. All of the areas of the plant as defined in Attachment I and that contained equipment on the SSEL were walked down including the yard except for high radiation areas in the Aux. Bldg. (Basement, Volume Control Tank cubicles, etc...) and the Reactor Containments. Attachment II contains a list of the potential fire sources which were walked down. Attachment III contains photographs of walked down items which were of concern. These photographs have been appropriately labelled to indicate the concern, location and equipment type.

The team of members involved in the walkdown of the above issues included the following :

1. Dr. R. P. Kennedy - Structural Mechanics Consulting, Inc.
2. S. E. Zinkham - Virginia Power/ Engineering Mechanics/ Certified IPEEE Trained Walkdown member
3. K. N. Mehrotra - Virginia Power/Engineering Mechanics/ Certified IPEEE Trained Walkdown member
4. R. M. Patel - Virginia Power/ North Anna Civil Design



5. S. E. George - Virginia Power/ Engineering Mechanics Co-op

The miscellaneous IPEEE(Seismic) issues that were addressed during these walkdowns were:

- I. Seismic/fire interaction
- II. Seismic induced flooding
- III. HVAC ducting and supports, instrumentation tubing, and piping
- IV. Building seismic gaps, impact between structures, and building penetrations
- V. Travelling screens
- VI. Dams, levees, and dikes
- VII. Miscellaneous Issues

A summary of the walkdown results is provided below. This summary identifies concerns that warranted further review by Virginia Power as well as issues for which the walkdown team concluded that further review was not warranted. For issues I and II above, a concern identified several times was with the anchorage of tanks or heat exchangers (primarily in the Turbine Bldg.). Most of these tanks or heat exchangers are not on the SSEL and it could not be concluded during the walkdowns that the anchorage and/or the support structure were seismically adequate. Although catastrophic failure was not thought possible, it is possible that the tanks or heat exchangers could slide causing failure at the connection between the equipment and the attached piping. In general, Virginia Power should ensure such a failure will not occur or assess the consequences if such a failure were to occur.

## Summary Of Findings:

### I. Seismic/fire Interaction

As part of this issue, Virginia Power developed a list of flammable sources and wet and normally dry Fire Protection (FP) Systems that were to be specifically reviewed during the walkdowns. This list is shown in Attachment 2. All of the flammable sources were walked down except for the flammable sources in the Aux. Building Volume Control Tank hydrogen lines and Unit 1 & 2 Turbine building 400 Cu. Ft. hydrogen cylinders which were not located during the walkdown. Most of the wet FP piping and to a lesser extent the dry FP piping was also walked down and were addressed in the Flooding or Miscellaneous sections of this report. Additionally, there were a few seismic fire concerns noted that were not associated with equipment or systems shown in Attachment 2. The following are the issues identified during the walkdowns:

#### **Turbine Building:**

1. Lube Oil Storage Tanks (located at elevation 252' in the northeast quadrant of the Unit 1 side of the Turbine building) , 1-LO-TK-2, 1-LO-TK-3, may not be anchored. They were located in a room which was locked during the walkdown and needs to be checked. A view through an open ventilation damper into the room indicated that the ceiling beams appeared to be coated with a fire retardant material. A concrete wall approximately 7' high surrounded the room with a block wall above the 7 foot elevation. The block wall appears to be non-seismic and may require a HCLPF calculation. Turbine Lube Oil Reservoirs ( located at elevation 277' ) , 1-LO-TK-1 & 2- LO-TK-1 , were well anchored and the piping was well supported entering and exiting the tanks , therefore can be screened out. Lube Oil Tank #2 at elevation 303' was well supported and can be screened out, however a determination of the site level gauge seismic vulnerability ( the gauge may be made of glass) should be determined.

2. Chemical Feed Morpholine Tanks ( located at elevation 254'), 1-WT-TK-4 & 2-WT-TK-4 , were well anchored, however contained long plastic or glass site level tubes. Glass site tubes are fragile and subject to breakage during a seismic event. This item can be screened out except for a look at the site level tube and its seismic vulnerability.
3. Lube Oil Heat Exchangers ( located at elevation 277') , 1-LO-E-1A & 2-LO-E-1A, require checks on anchorage adequacy to determine if they could break loose and damage connecting piping.
4. Lube Oil Pumps ( elevation 254'), 1-LO-P-1 & 2-LO-P-1, are skid mounted and are adequately anchored and can be screened out.
5. Lube Oil Filter Units ( elevation 254'), 1-LO-FL-1 & 2- LO-FL-1, are well anchored and piping leading to them are adequately supported and therefore can be screened out.
6. All Turbine Lube Oil Cooler piping was butt welded and well supported and can be screened out.
7. Hydrogen piping associated with the Generator and Turbine Lube Oil, and Seal Oil systems were inspected and were well supported in all cases and can be screened out with one concern noted. At elevation 277', Unit 2 side of the Turbine Building, the hydrogen piping, less than 1" diameter, coming from the Turbine Lube Oil system was attached to the Turbine pedestal at several locations. The Turbine pedestal is an independent structure from the Turbine building. An examination of the relative seismic motion between the Turbine building and the Turbine pedestal and its effect on the piping is required if the relative motion is determined large. All stored hydrogen bottles were found adequately chained and braced. The 400 cubic foot hydrogen cylinders (noted in Attachment II) could not be located in Unit 1 or 2 at elevation 277' and a

follow up with the fire protection engineers will be required.

8. Several 40 + gallon unsupported Chemical Drums ( near the chemistry sampling area), some with open lids were lying on the floor and not anchored. They could represent a potential fire source. This requires further investigation.

#### **Auxiliary Building:**

1. Several Hydrogen and Oxygen storage bottles were located next to the Health Physics office at elevation 274' and were well supported and can be screened out.
2. Hydrogen bottles located by the roll-up door at elevation 274' need a set of chains at the bottom of the bottles. Supports are not bolted to concrete. A follow up evaluation and/or modification may be required. Also several hydrogen and other gas bottles located in the chemical sampling area on this elevation were not sufficiently supported and require a follow up look.
3. A 150 cubic foot Hydrogen Tank, 1-BR-TK-6, from fire list could not be located and requires follow up with Fire Protection Engineering.
4. An unanchored paint & flammable liquids storage cabinet was located on elevation 274'. The cabinet was opened and contained a small amount of paint and flammable liquids. This cabinet should be restrained to prevent overturning and a potential seismic fire hazard.

#### **Emergency Diesel Generated Room:**

1. All Day Tanks, 1-EG-TK-1H, 1J, 2H, 2J, in the EDG rooms were well supported and anchored. All fuel oil lines were socket welded and well supported. These items can be screened out.

### **Fuel Oil Pumphouse:**

1. Local Fuel Oil Tanks (275 gallons), 1-DB-TK-2A,B were well supported and anchored and therefore, screened out.
2. All piping, pumps, etc. are well supported and anchored and are screened out.
3. In the Yard next to Fuel Oil Pumphouse, a 5000 BBL tank - represents a major fire source and is not anchored. This tank has a protective fire dike surrounding it which would contain any oil spill, however, it could produce sufficient heat to affect the surrounding Fuel Oil Pumphouse. This issue needs to be addressed with Fire Protection Engineering as to its impact.

### **Auxiliary Feed Water Pump House ( Motor Driven Pump Side of the Building):**

1. On Motor Driven Auxiliary Feedwater Pumps, 1-FW-P-3A,3B - a local Lube Oil reservoir was well anchored to each pump skid which was also well anchored and can be screened out as a potential fire source.

### **Auxiliary Feed Water Pump House ( Steam Driven Pump Side of the Building):**

1. A Local Lube oil reservoir, 1-FW-TK-3, on Steam Driven Auxiliary Feedwater Pump, 1-FW-P-2A , was well anchored and can be screened out as a potential fire source.

### **Service Water Pump House:**

1. A potential fire source, Fuel Oil Storage Tank, 1-FP-TK-4, is well braced and the fuel oil piping associated with this system is well supported and can be screened out.

## II. Seismic Induced Flooding:

The primary sources of seismic induced flooding were located in the Turbine Building. Below is a brief description of the findings for the items walked down. It should be noted that the items of concern listed below, may or may not impact SSEL IPEEE equipment, however will require follow-up for their impact on this equipment.

### Turbine Building:

1. A sewage tank located adjacent to the stairs near columns 1C is not anchored. There exists a potential for a break in the attached tank piping due to movement of this unanchored tank. An further examination of this item as a flood source is required.
2. Tank , 1-HV-TK-10 , is well supported and can be screened out.
3. Bearing Cooling Chemical Addition Tank, 1-BC-TK-1 - This tank is anchored by only 3 bolts. An evaluation of this tank's anchorage should be performed if a flooding impact to the Safe Shutdown functions is determined.
4. In general fire protection piping was adequately supported, however, the smaller bore piping that had threaded fittings and was loosely rod hung was considered a potential flood concern. Threaded fittings on small bore piping have been known to be a source of leakage as a result of a seismic event. Two areas of the Turbine building were determined to have this piping. The piping was located in the northeast corner of the building above elevation 254'. A poorly hung 1" fireline with a sprinkler head that could easily impact a beam causing a potential flood concern was noted and some loosely rod hung 1" piping was noted. Also small bore piping with threaded fittings supported off of non-seismic block walls would require examination to determine the adequacy of the block walls during a seismic event. The prime location of this fire

pipng was on the block wall separating unit 1 & 2 Turbine Building above elevation 254'.

5. The Moisture Separator Reheater Drain Receivers, 1(2)-SD-TK-2C, were well supported on concrete concrete pedestals. A look at drawings is required to determine if the pedestals are reinforced concrete. This item can be screened out if the pedestals are determined to be reinforced. A confirmation of rebar in concrete pedestals for 2nd Point Heater Drain Receivers, (1)2-SD-TK-2B, should be performed.
6. Feedwater Heaters, 1(2)-FW-E-1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B, are supported midway and at the base of the heater. An adequacy check of supports is required to make sure that there are no effects on surrounding equipment due to seismic interaction or flooding potential, such as breaks in piping nozzle, etc.
7. Outlet Waterbox Expansion Joints, 1(2)-CW-REJ-3A - This item was judged well supported and can be screened out. The expansion joint is next to the Waterbox along with large inlet and outlet piping which is adequately restrained.
8. Circulation Water Expansion joints shou'd be reviewed for their potential flood source. These joints are usually acceptable if the relative piping movements are small.
9. Several runs of "wet" piping on rod hangers were located in the south central corner of Unit 1 near the elevator. All pipes in this area appear to be butt welded and can be screened out.
10. Chemical Feed Hydrazine Mixing Tanks, 1(2)-WT-TK-1, contain a long site level tube. Glass site tubes are fragile and subject to breakage during a seismic event. A determination of the tube material, whether plastic or glass is required. The tank is anchored well and is screened out except for site tube issue.

11. Chemical Feed Morpholine Mixing Tank, 1(2)-WT-TK-4 - A determination of the seismic vulnerability of the site level tube is required, because of the potential of breakage during seismic event. The site tube could be glass or plastic. The anchorage for this tank was screened out.
12. Unsupported Chemical Drums - Several 40 + gallon barrels, some with open lids were lying on the floor and not anchored. They could represent a potential flood source. This requires further investigation.
13. Drain coolers are a potential source of flooding. Slotted holes in the anchorage base may allow shifting of Condensate Drain Coolers, 1(2)-CN-DC-1A,B. A determination of the adequacy of this type of anchorage may be required. Four sides of the anchorage feet have slotted holes for unit 1 and two sides of the anchorage feet have slotted holes for Unit 2, which could cause heat exchanger shifting and a potential flood source.
14. A Demineralizing tank was well supported and can be screened out.
15. An unanchored tank, 1-WT-TK-8, containing sodium hydroxide which may splash during a seismic event and impact electrical cables close to tank. A look at required safe shutdown equipment in the area is required.
16. Chemical Feed Hydrazine Mixing Tanks, 1-WT-TK-1A,B,C, were well supported. The only concerns noted were the long site level tubes which may be made of glass and are seismically vulnerable.
17. All metal tanks in the north central part of the turbine building were well supported and can be screened out.
18. A large Calgon plastic tank is unanchored and could create a potential source of flooding,



through tank shift and pipe rupture of plastic piping.

19. Condensate Receiver Tank 4, 2-HV-TK-4 - was well anchored and can be screened out.
20. Powdex Recovery Compartment Tanks, 1-CP-TK-2,3 and 2-CP-TK-1,2,3 are unanchored tanks. 1-CP-TK-1 is anchored with 3 bolts. These are large tanks could shift and cause piping leaks and represent a potential flood source. An examination of these tank locations and effect of flooding on surrounding equipment needs to be assessed.
21. Heating and Ventilation Cooling Coil, 1-HV-AC-5, was unanchored and could be a potential source of flooding. A determination of impact on surrounding equipment is required
22. A concern of the adequacy of the support to Mezzanine steel of large heat exchangers and tanks was noted primarily on Elevation 277' in Unit 1 & 2. The concern was that this large equipment was tied into steel floor beams, which were not adequately braced or connected to other beams in a way as to sustain large seismically induced torsional loadings. This issue will require follow up to evaluate this potential concern for seismic induced flooding from large movements of this equipment and subsequent impact on the connecting piping. The following equipment were noted: Steam Condensers, 1(2)-CN-SC-2 ; Vacuum Priming Tanks ( the Unit 2 tank saddle was not welded to the tank), 1(2)-VP-TK-1 ; Reheater Drain Receivers 1(2)-SD-TK-1B; Condenser Hogger Tanks (worst case flood potential); Chilled Water Flash Tanks (an additional issue possible glass site level tubes, need to determine adequacy); and the Chilled Water Condensers, 1(2)-CD-SC-1.
23. The Condensate Water boxes appeared to be supported off the inlet and outlet piping. They can be screened out if the boxes are light in weight and/or determined adequately supported.
24. Tank, 1-WT-TK-6 , on the Turbine Deck was well supported and can be screened out.

**Service Building:**

**Chiller Room Units 1 and 2:**

1. Rooms are well protected by dikes to prevent flooding from Turbine Building.

**A/C Room Units 1 and 2:**

1. Fire lines are butt welded, well-supported and have no leakage potential.

**Instrument Rack Room Units 1 and 2:**

1. Fire piping is very well supported. No other concerns were noted.

**Emergency Switchgear Rooms Unit 1 & 2:**

1. Fire piping is butt welded and well supported, therefore acceptable.

**Auxiliary Building:**

1. Boric Acid Tanks, 1-CH-TK-1A,B,C, were well supported and can be screened out.
2. All Fire piping looks seismically and/or well supported and can be screened out.
3. Boron Recovery Tanks are well supported and can be screened out.
4. High Level Waste Drain Tanks, 1-LW-TK-2A, 2B, are well anchored and can be screened out.

5. A Cabinet with Fire protection and bottles appears to be unanchored and could open during a seismic event.

### **Quench Spray Pump House**

1. A look at the Service Water Piping relative movements in relation to the expansion joints should be performed for the piping located in the basement area.

### **Auxiliary Feed Water Pump House ( Motor Driven Pump Side of the Building )**

1. Casing Cooling Tanks connect next to AFWPH and appear to be well encased with concrete, however, this tank should be looked at for anchorage adequacy and for potential interaction concerns that could lead to flooding.
2. Emergency Condensate Storage Tanks, 1(2)-CN-TK-1, were well anchored and can be screened out as potential flooding sources.
2. The Condensate Storage Tanks, 1(2)-CN-TK-2 , which are located in the yard adjacent to Turbine Bldg. are not anchored. These tanks were on the SSEL at North Anna but were subsequently removed when they too were found to be unanchored. These are large tanks and could be a flood concern. A review of the effect of flooding on surrounding equipment should be performed.
3. For the other tanks in the yard and on the IPEEE SSEL list, an independent look at these yard tanks will be done as part of the SSEL walkdowns. These tanks are large and flooding is a concern. Virginia Power should evaluate the consequences of these tanks sliding and causing failure at the connection between the tanks and attached piping or ensure the anchorage and the support structure are adequate to preclude tank sliding.

### **III. HVAC Ducting and Supports, Instrumentation, and Piping**

On a sampling basis, these issues were reviewed during the walkdowns and the following were the results:

1. The HVAC ducting appears well supported with the supports typically being seismically designed in normally safety related areas of the plant (i.e. Auxiliary Building, Main Steam Valve House, etc.). Additionally in non seismic areas such as the Turbine Building, the ducting was rod hung , however, supports were adequately spaced to prevent major failures. At some locations it is expected that the ducting will exhibit significant displacements during an earthquake. Catastrophic failure of the ducting is not thought possible, however, tearing of the sheet metal, primarily at section connections, might be expected. Leakage may occur at these locations. Virginia Power is to review the impact of HVAC duct leakage.
2. In general, instrumentation tubing appeared adequately installed with sufficient flexibility between the equipment and the first support.
3. A sampling of the piping was reviewed in various buildings and the only concern identified was with the threaded wet Fire piping in the Turbine Bldg. which is discussed in the flooding section of this report. In general the piping in the Turbine Bldg. was flexibly supported but was judged to be seismically adequate. In other buildings the piping was more stiffly supported and in these locations no concerns were identified.

### **IV. Building Seismic Gaps, Impact Between Structures, and Building Penetrations**

1. UFSAR section 3.8.1.1 identifies where a rattlespace is to be provided and defines the size of the rattlespace between buildings. During the walkdown several of these

rattlespaces were inspected, however, since the rattlespaces were covered to prevent material from entering the space (ref. UFSAR section 3.8.1.1), the existence or size of the rattlespace could not be confirmed. Virginia Power should perform a limited review of the drawings that detail the rattlespaces with emphasis on the buildings that contain equipment with essential relays.

2. On a sampling basis, the subsystems (piping, cable trays, and conduit) that span these building gaps were reviewed and in general these subsystems appeared to have adequate flexibility to accommodate the relative building seismic motions. Sufficient flexibility of cable trays, conduits, and piping between building structures was judged to be adequate by the walkdown team.
3. Several mechanical and electrical penetrations were walked down and the only concern identified was that a ceramic type of material was used in the assemblies for some 4160 volt electrical penetrations in the Cable Vault area at the electrical penetrations into Containment. Failure of ceramic materials has been observed in previous earthquakes. Virginia Power should review this concern further.

#### **V. Travelling Screens**

1. Several of the travelling screens at both the Intake and Service water Structures were walked down. The only credible failure, although unlikely, was the possibility of the drive chain jumping off of the sprocket. Since this type of failure would still allow water to flow through, further review is not warranted.

#### **VI. Dams, Levees, and Dikes**

1. Prior to the walkdowns it was concluded that this issue should be reviewed by an experienced Geotechnical Engineer based on knowledge of the soil properties and

through a review of the drawings. The only area of potential concern on this issue would be the Service Water Reservoir, where an assessment of slope stability should be addressed.

## VII. Miscellaneous Issues

1. The light diffusers in the Control Room ceiling rest on a frame consisting of inverted tees. Diffusers that are not tied to the frame have been known to fall through the frame during previous earthquakes. The diffusers should be tied to the frame, preferably to two sides, in the areas that the diffusers could injure the operators or damage sensitive equipment.
2. The fluorescent lights in the Emergency Switchgear Rooms were inspected. It is possible that the lights could fall out during an earthquake if not properly installed, however, since the lights are of small mass, seismic interaction is not a concern with cabinets even if the cabinets contain essential relays. In the Battery Rooms, there is a concern with fluorescent light fixtures falling on to batteries and possibly causing short out problems.
3. In all the Battery Rooms there were some styrofoam pads missing between the batteries. Currently there are only encased rods separating these batteries at the locations where pads are missing and there is the possibility of line loads being generated on the battery casings. A look at the vendor report(s) should be done to determine if these pads were required during testing and if so this issue would require a further look at.
4. The Turbine Building contains a few items of equipment on the SSEL. If it is determined that this structure can not be screened out per NP-6041, Virginia Power should ensure collapse of the structure will not occur or evaluate the consequences of the structure or a portion of the structure collapsing. The walkdown team did not note any structural vulnerabilities with the Turbine Building structure.

5. All portable wall hung fire extinguishing units throughout the plant appeared to not be seismically vulnerable. However, in the Unit 2 Emergency Switchgear Room there was a portable fire extinguisher in a box which was on the floor next to a wall by the MCC's that was not mounted. All dry fire protection systems throughout the plant appeared to be well supported and could be screened out. Only two instances of concern were noted for wet fire systems in the turbine building as previously stated in the flooding section of this report.
6. During the walkdown several housekeeping issues were identified, however were not individually noted because these issues are being handled during the SSEL component walkdowns.
7. The walkdown team observed that several site Lube Oil reservoirs on motor driven pumps were loose and should be tightened. This issue should be checked on all SSEL pumps so as to prevent pump burn-up from oil leakage and subsequent lack of lubrication.
8. Racks of Halon Fire Protection bottles, 1(2)-FP-WL-8, - were well supported seismically and are screened out.
9. A Storage cabinet of air bottles near 1-HV-AC-5, pictured in Attachment III, was not anchored and could create potential missile concerns if the bottles fell and ruptured during a seismic event.

**Conclusions:**

In conclusion the concerns as noted above will be examined systematically and from their potential of impacting safe shutdown equipment and support systems. This report addresses only the findings of the walkdowns and a follow-up report to this one (prior to IPEEE final submittal for North Anna Units 1 & 2 to the NRC) will answer the concerns of this walkdown.



# Attachment I

**IPEEE WALKDOWN PLAN FOR NORTH ANNA  
DECEMBER 8 & 9, 1994**

**A. Access to North Anna**

1. Dr. Kennedy briefing on Escorted Radiation Worker Training
2. Visitor Authorization

**B. Walkdown Briefing**

1. Meet with Dr. Kennedy and others at station Administrative building and review walkdown plan.

**C. Walkdown Plan for December 8, 1994**

1. Area walkdown of Service-Turbine Building
  - a. Control Room, Logic Room, Hathaway Room, A.C. Rooms, Control Rod drive Room
  - b. EDG rooms
  - c. Normal Switchgear, Cable Spread, & Mechanical Equipment Rooms
  - d. Emergency Switchgear 1 & 2, Instrument Rack Room 1 & 2, AC & Chiller Rooms, Aux Tunnel, Cable Vault..
  - e. Turbine Basement
  - f. Remaining Levels of Turbine Building.
2. Lunch Break
3. Auxiliary Building- Beginning at top elevation and proceeding to bottom.
4. Summarize days walkdown at Station.

**D. Walkdown Plan For December 9, 1994**

1. Main Steam Valve House 1 & 2

2. Quench Spray Pump House 1 & 2
3. Safeguards 1 & 2
4. Auxiliary Feedwater Pump House 1 & 2
5. Yard, Tanks, etc.
6. Fuel Oil Pump House
7. Intake Structure, Transformers, Yard Switch gear etc.
8. Service Water Valve House & Service Water Pump House
9. Summarize the days walkdown.

## Attachment II



VIRGINIA POWER  
NORTH CAROLINA POWER



To: Mr. T. W. Hsu - INNS/1NW

Innsbrook Techn. Center

From: L. T. Warnick - INNS/2NW

June 3, 1993

**SEISMIC/FIRE INTERACTION  
IPEEE FIRE ANALYSIS  
NORTH ANNA POWER STATION**

One task required in the IPEEE Fire Analysis, which is currently being conducted, is to review the issue of seismic/fire interactions, and demonstrate that the issue is adequately addressed. Three specific concerns are identified by the NRC. We have reviewed these three concerns and identified the specific plant components and systems involved. The analysis methodology requests that the specific plant components be included in the seismic walk-down program in order to verify the potential for a seismic/fire interaction.

Attached is a list of equipment which needs to be included in the seismic walk-downs being conducted at North Anna. Please review this list and let me know when the walk-downs of these components can be performed.

We will also be doing a plant walk-down and will be verifying the completeness of the attached list. There is a potential for identifying more flammable liquid or gas vessels and adding them to the list. The Fire analysis walk-down package is scheduled to be completed by 7/16/93.

If you have any questions regarding this, please contact me at x2307 or Dave Bucheit at x2264.

L. T. Warnick

Attachments

cc: L. C. Kidd, Jr. - IN/2NW  
D. M. Bucheit - IN/3SW  
R. S. Thomas - IN/3SW  
T. C. Carlisle - IN/2NW  
L. C. Martin - North Anna

IPEEE FIRE ANALYSIS  
NORTH ANNA POWER STATION

June 4, 1993

1. FLAMMABLE LIQUID/GAS VESSELS OR PIPING IN SAFETY-RELATED AREAS

Aux Bldg 259'	1-BR-TK-6	Hydrogen	150 cu. ft.	See Notes 1 and 4.
Aux Bldg 259'	Piping to VCTs	Hydrogen	n/a	See Notes 1 and 4. (or verify restricted orifice in line)
Diesel 1H	1-EG-TK-1H	Diesel Fuel	1000 gal.	See Notes 1 and 4.
Diesel 1H	Piping	Diesel Fuel	n/a	See Notes 1 and 4.
Diesel 1J	1-EG-TK-1J	Diesel Fuel	1000 gal.	See Notes 1 and 4.
Diesel 1J	Piping	Diesel Fuel	n/a	See Notes 1 and 4.
Diesel 2H	2-EG-TK-1H	Diesel Fuel	1000 gal.	See Notes 1 and 4.
Diesel 2H	Piping	Diesel Fuel	n/a	See Notes 1 and 4.
Diesel 2J	2-EG-TK-1J	Diesel Fuel	1000 gal.	See Notes 1 and 4.
Diesel 2J	Piping	Diesel Fuel	n/a	See Notes 1 and 4.
SW pumphouse	Fire Pp Tr.	Diesel Fuel	550 gal.	See Notes 1 and 4.
SW pumphouse	Piping to Pp	Diesel Fuel	n/a	See Notes 1 and 4.
U. 1 Turb Bldg	Piping	Hydrogen	n/a	See Notes 1 and 4.
U. 1 Turb 254'	1-WT-TK-4	Morpholine	190 gal.	See Notes 1 and 4.
U. 1 Turb 277'	Cylinders	Hydrogen	400 cu. ft.	See Notes 1 and 4.
U. 1 Turb 277'	1-LO-TK-1	Lube Oil	12,000 gal.	See Notes 1 and 4.
U. 1 Turb 303'	Generator	Hydrogen	2000 cu. ft.	See Notes 1 and 4.
U. 2 Turb Bldg	Piping	Hydrogen	n/a	See Notes 1 and 4.
U. 2 Turb 254'	2-WT-TK-4	Morpholine	190 gal.	See Notes 1 and 4.
U. 2 Turb 254'	(Seal Oil)	Hydrogen	100 cu. ft.	See Notes 1 and 4.
U. 2 Turb 277'	Cylinders	Hydrogen	400 cu. ft.	See Notes 1 and 4.

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IPEEE FIRE ANALYSIS  
NORTH ANNA POWER STATION

June 4, 1993

U. 2 Turb 277'	2-LO-TK-1	Lube Oil	12,000 gal.	See Notes 1 and 4.
U. 2 Turb 303'	Generator	Hydrogen	2000 cu. ft.	See Notes 1 and 4.
U. 2 Turb 303'	Tank	Hydrazine	345 gal.	See Notes 1 and 4.
FOPH Rm. A	1-DB-TK-2A	Fuel Oil	275 gal.	See Notes 1 and 4.
FOPH Rm. A	Piping	Fuel Oil	n/a	See Notes 1 and 4.
FOPH Rm. B	1-DB-TK-2A	Fuel Oil	275 gal.	See Notes 1 and 4.
FOPH Rm. B	Piping	Fuel Oil	n/a	See Notes 1 and 4.

Note 1: Verify whether or not the vessel or piping will rupture or leak in a seismic event. Where such components may be susceptible to failure, and there is a potential for a resulting fire to damage seismic safe shutdown components, simple fixes should be considered to improve their seismic capability.

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IPEEE FIRE ANALYSIS  
NORTH ANNA POWER STATION

June 4, 1993

2. F.P. WATER SYSTEMS IN SAFETY-RELATED AREAS

U. 1 Turb Bldg	Wet-pipe sprinklers	NAS-331		See Notes 2 and 4.
U. 1 Turb Bldg	Hose standpipes	NAS-267		See Notes 2 and 4.
U. 2 Turb Bldg	Wet-pipe sprinklers	NAS-331		See Notes 2 and 4.
U. 2 Turb Bldg	Hose standpipes	NAS-267		See Notes 2 and 4.
Aux Bldg 244'	Wet-pipe sprinklers	DC-78-68B	CCW pump area	See Notes 2 and 4.
Aux Bldg 259'	Wet-pipe sprinklers	DC-84-27	CCW pump area	See Notes 2 and 4.
Aux Bldg general	Hose standpipes	NAS-267		See Notes 2 and 4.
Fuel Building	Hose standpipes	NAS-267		See Notes 2 and 4.

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Note 2: Verify that none of the components credited as part of the seismic safe shut-down path considered within IPEEE could be damaged by a fire protection pipe rupture in this area, or verify that the piping will not rupture in a seismic event. (It is noted that fire protection system pipe rupture was analyzed in the IPE-Internal Flooding study for these areas. It is also noted that the EPRI seismic margins walk-down sheets already contain questions regarding vulnerability of equipment to possible iterations from fire suppression systems.)



IPEEE FIRE ANALYSIS  
NORTH ANNA POWER STATION

June 4, 1993

3. F.P. SYSTEMS (NORMALLY DRY) IN SAFETY-RELATED AREAS:

Page 28 of 55	U. 1 CV/T	Manual sprinkler system	DC-78-68B	Service bldg portion	See notes 3 and 4.
	U. 1 CV/T	Carbon dioxide system	NAS-326		See notes 3 and 4.
	U. 2 CV/T	Manual sprinkler system	DC-78-68B	Service bldg portion	See notes 3 and 4.
	U. 2 CV/T	Carbon dioxide system	NAS-326		See notes 3 and 4.
	U. 1 ESR	Manual hose standpipe	DC-78-68D		See notes 3 and 4.
	U. 1 ESR	Halon system	SWEC DC-84-01		See notes 3 and 4.
	U. 2 ESR	Manual hose standpipe	DC-78-68D		See notes 3 and 4.
	U. 2 ESR	Halon system	SWEC DC-83-36		See notes 3 and 4.
	U. 1 Containment	Manual hose standpipe	DC-78-68C	Elev 262, 291	See notes 3 and 4.
	U. 2 Containment	Manual hose standpipe	E&DCR	Elev 262, 291	See notes 3 and 4.
	Diesel 1H	Carbon dioxide system	NAS-326		See notes 3 and 4.
	Diesel 1J	Carbon dioxide system	NAS-326		See notes 3 and 4.
	Diesel 2H	Carbon dioxide system	NAS-326		See notes 3 and 4.
	Diesel 2J	Carbon dioxide system	NAS-326		See notes 3 and 4.
	Aux Bldg 291'	Carbon dioxide system	NAS-326	Charcoal filters	See notes 3 and 4.
	FOPH Rm A	Carbon dioxide system	NAS-326		See notes 3 and 4.
	FOPH Rm B	Carbon dioxide system	NAS-326		See notes 3 and 4.
	Control Room	Halon system	NAS-326	Underfloor	See notes 3 and 4.

Note 3: Verify the piping will not fall and damage seismic safe shutdown equipment.

IPEEE FIRE ANALYSIS  
NORTH ANNA POWER STATION

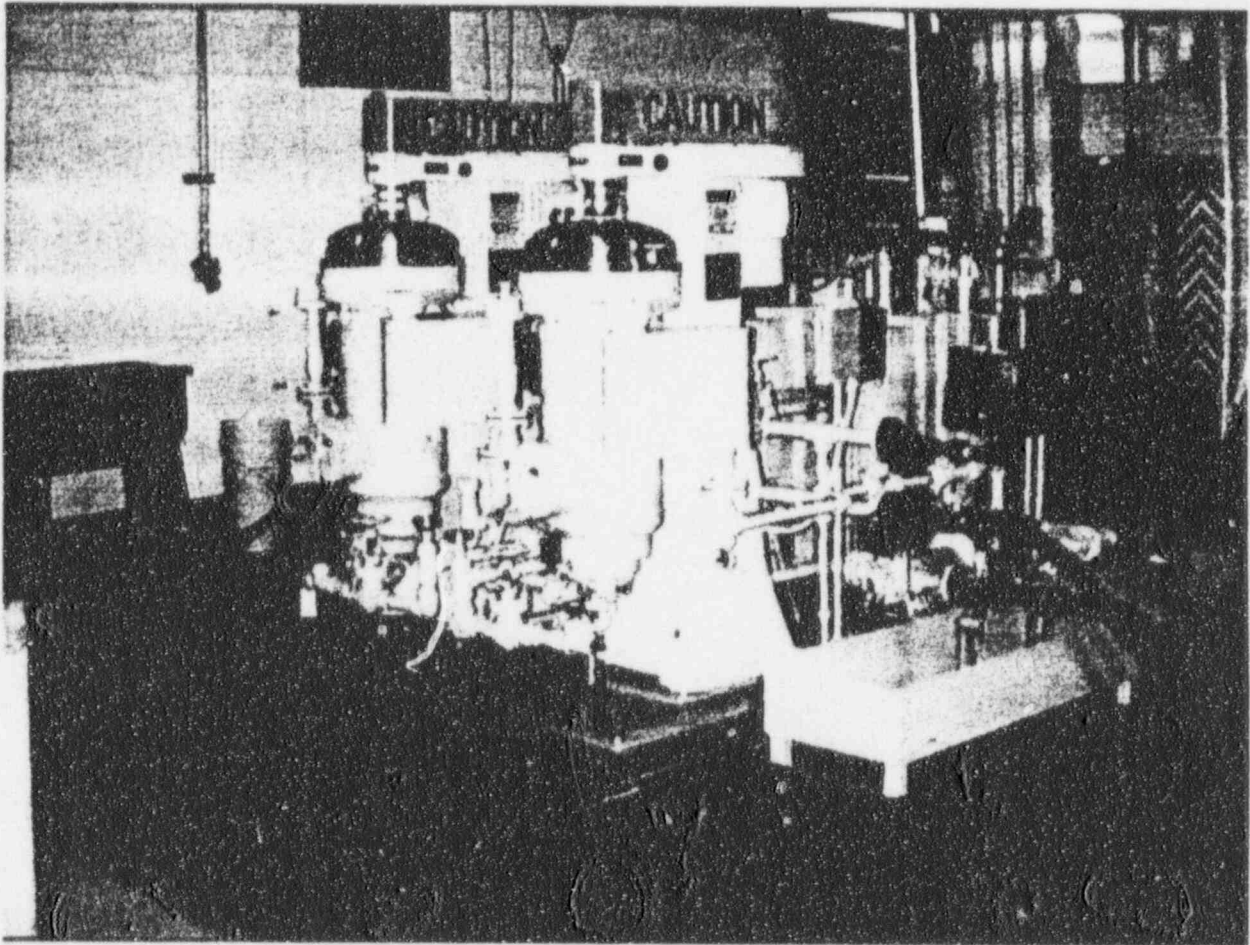
June 4, 1993

Note 4: The seismic capability of these components should be assessed using the same techniques used to address the seismic safe shutdown equipment (i.e.; emphasis should be placed on ensuring tanks have proper anchorage, piping is not subject to large deflections and there are no potential interactions such as pipes or sprinkler heads impacting other objects, etc.). The aim should be to demonstrated that such components are sufficiently robust with respect to maintaining their integrity (i.e.; continued operability is not necessary) that they would meet the screening criteria adopted at North Anna for seismic safe shutdown components (e.g.; HPCLF of 0.3g or whatever level is being adopted).

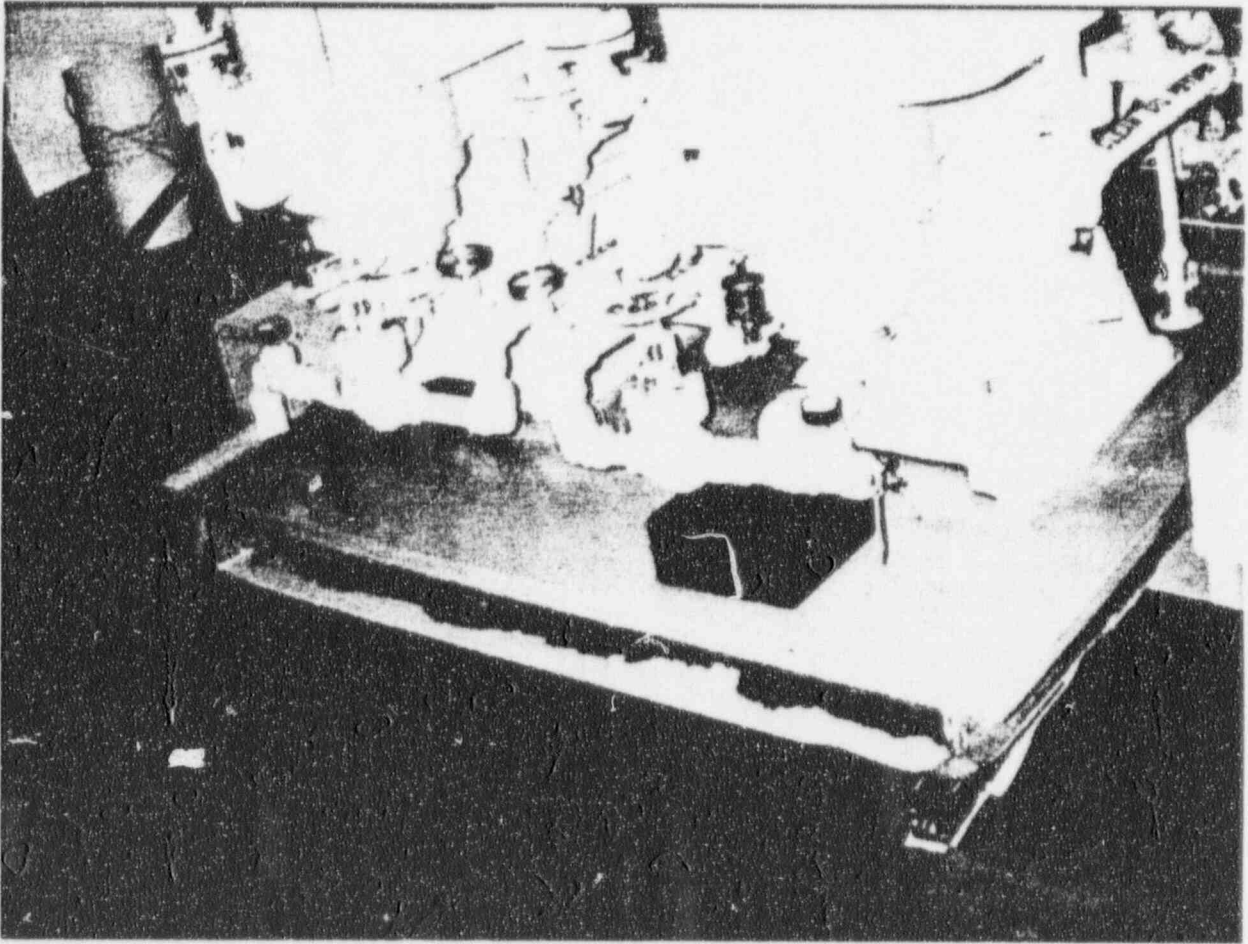
# Attachment III



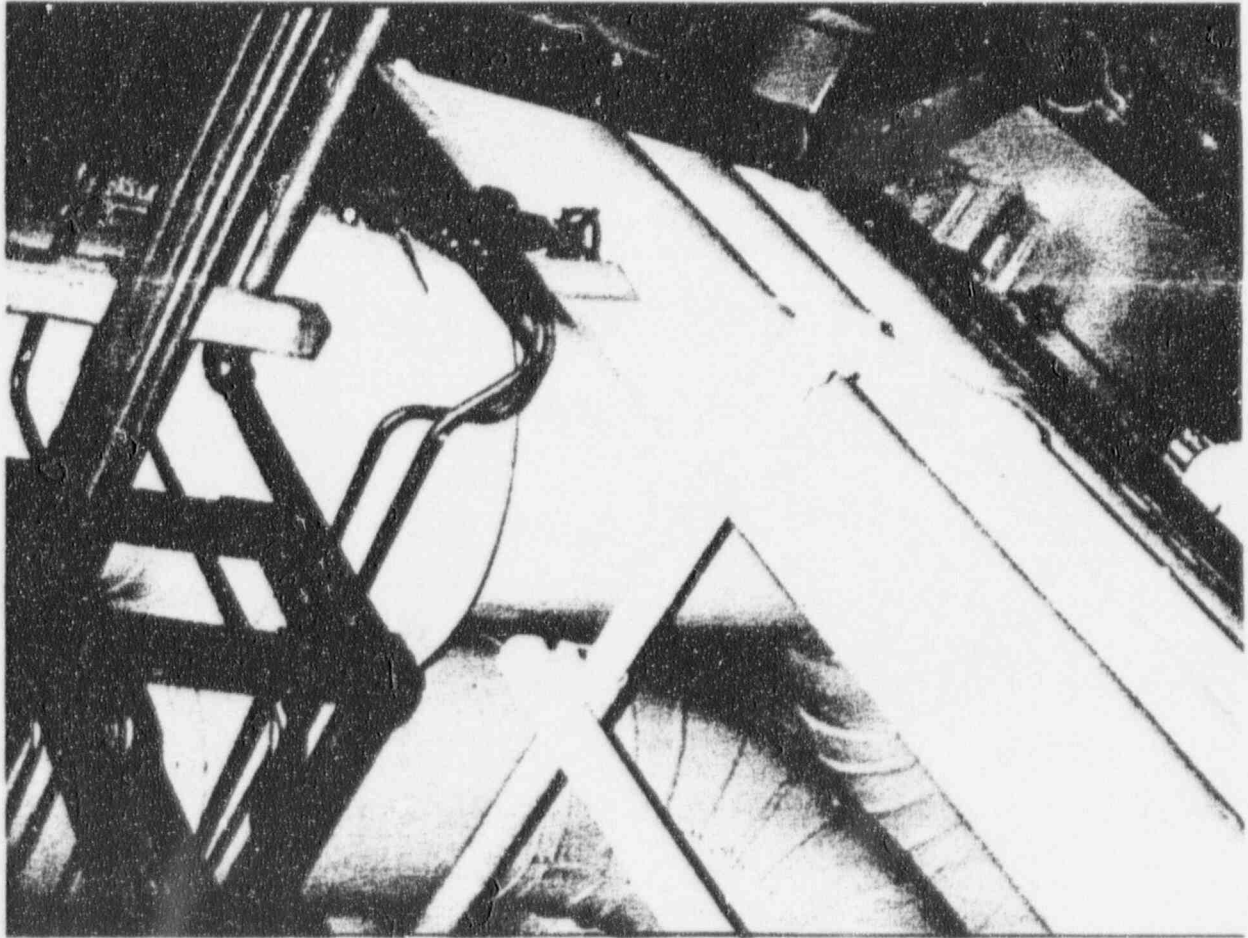
SEWAGE TANK - UNIT 1 TURBINE BUILDING  
LOCATED IN BASEMENT BESIDES STAIRS  
NOT ANCHORED TO FLOOR



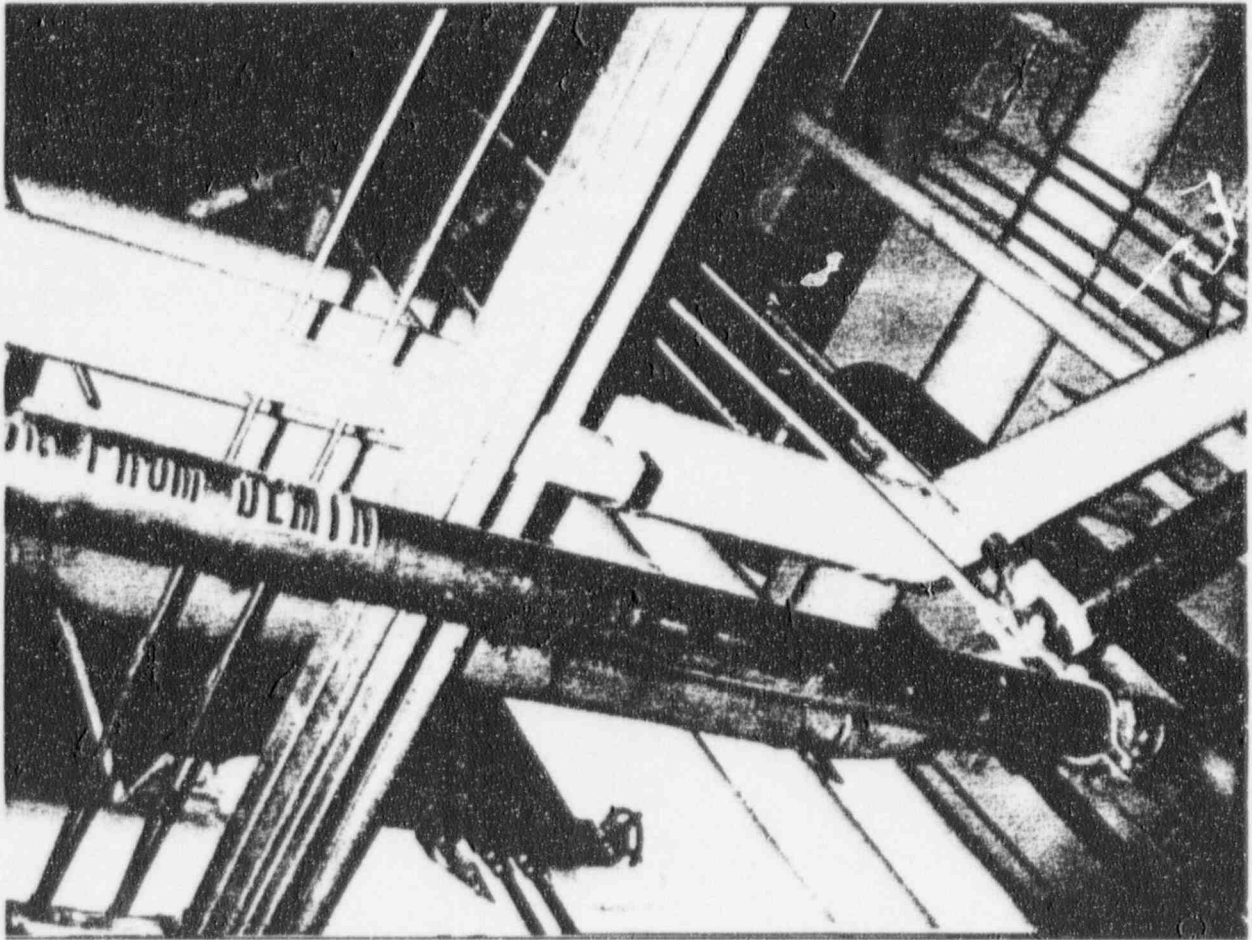
1-(27-LO-P-1) LUBE OIL PUMPS - OVERALL VIEW  
SKID MOUNTED UNIT 1 TURBINE BLDG. - BASEMENT  
PUMPS WELL ANCHORED



LUBE OIL PUMPS - ZOOMED-IN VIEW OF ANCHORAGE  
1-(2)-LO-P-3 UNIT 1 TURBINE BLDG - BASEMENT  
SKID MOUNTED  
Pumps Well Anchored.



PIPING AND ROD HANGARS NEAR ELEVATOR - UNIT 1 TURBINE BLDG.  
BASEMENT NEAR ELEVATOR  
*Piping is all butt welded.*

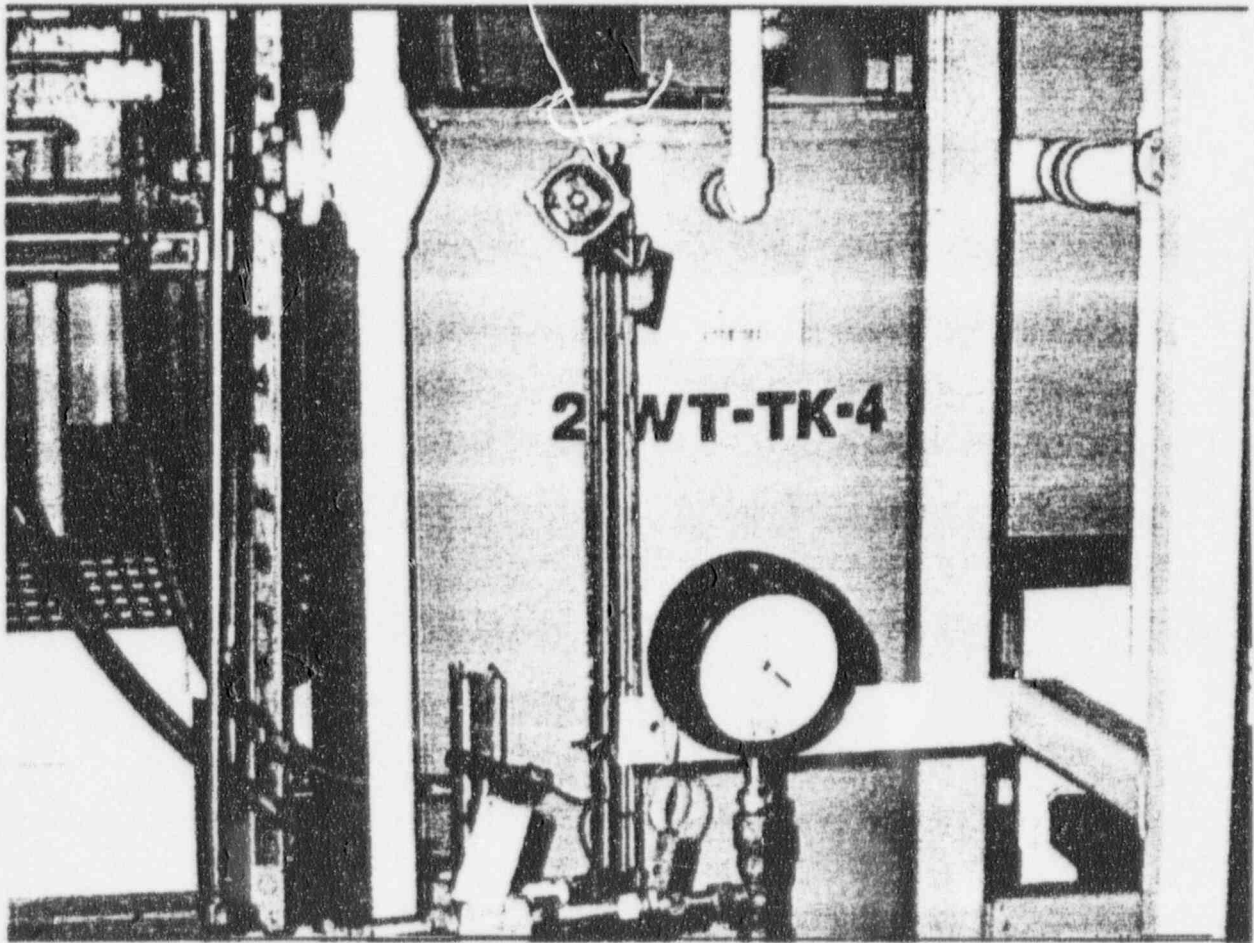


PIPING AND ROD HANGARS NEAR ELEVATOR - UNIT 1 TURBINE BLDG.

Piping is all butt welded ,

BASEMENT NEAR ELEVATOR

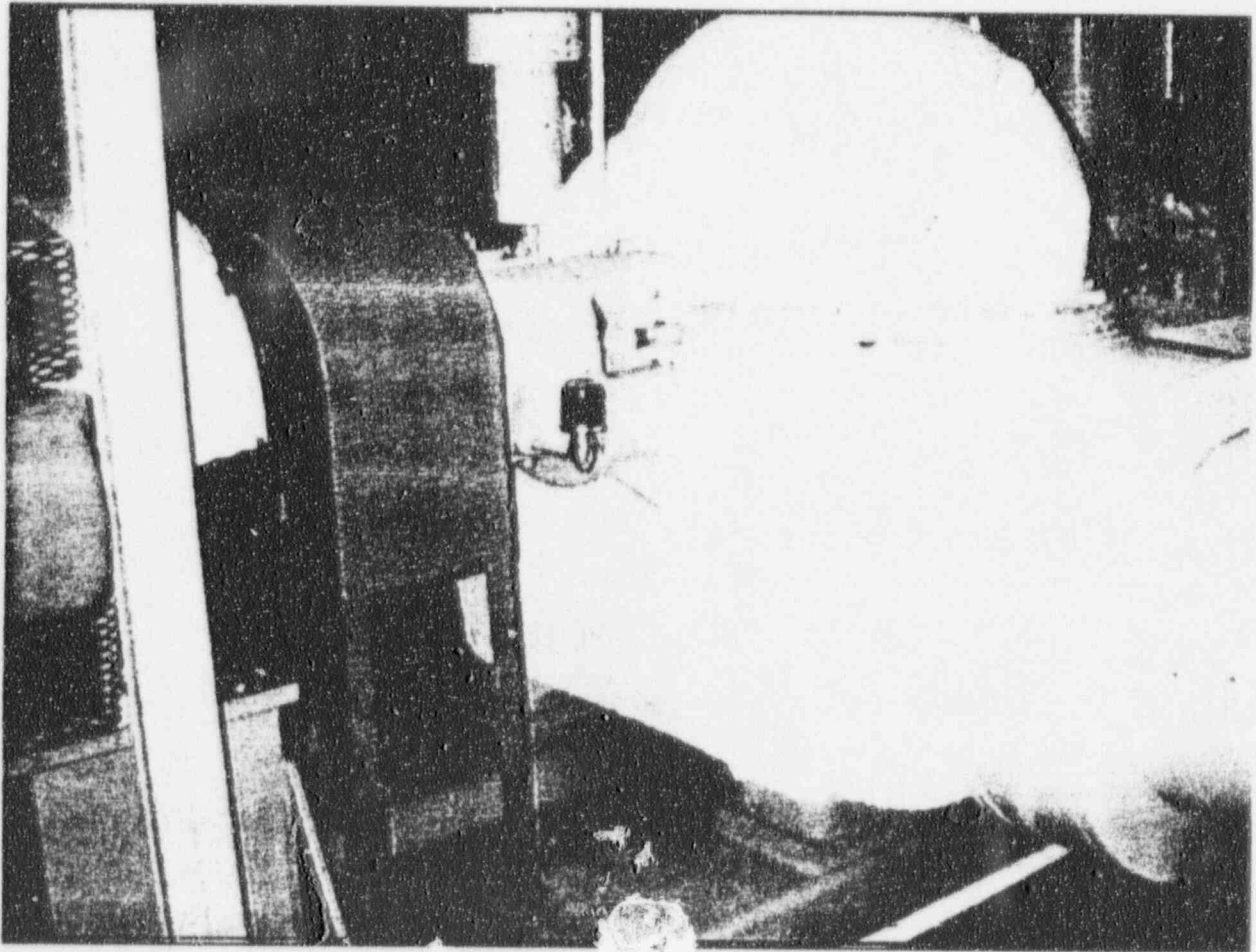




GLASS? TUBE ON 2-WT-TK-4

TURBINE BLDG  
UNIT 2 - BASEMENT

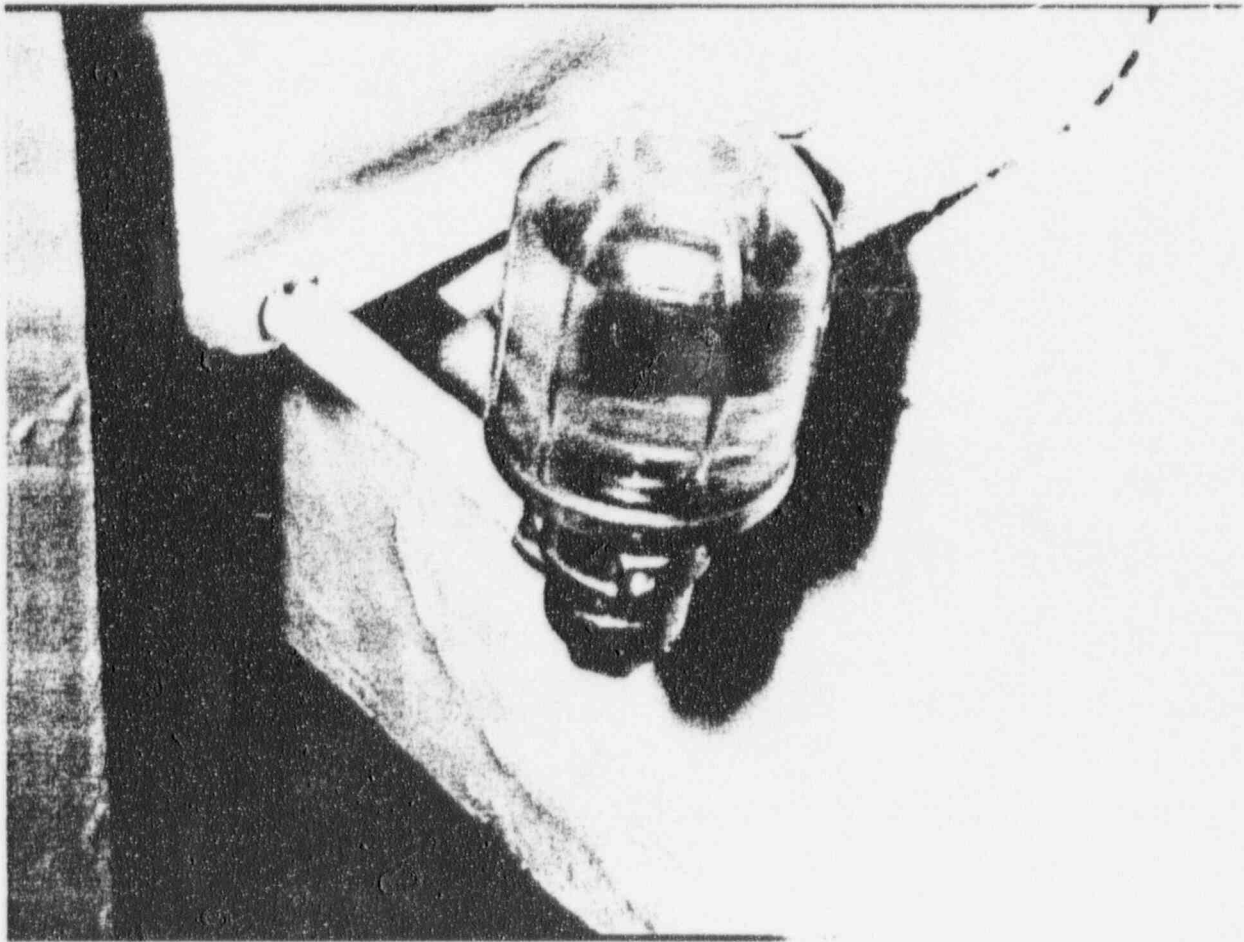
This tube may be glass or plastic  
& may be seismically vulnerable.



1-WT-P-2A (far view)

Showing location of  
oil site Reservoir  
which was not  
properly mounted and  
restrained .

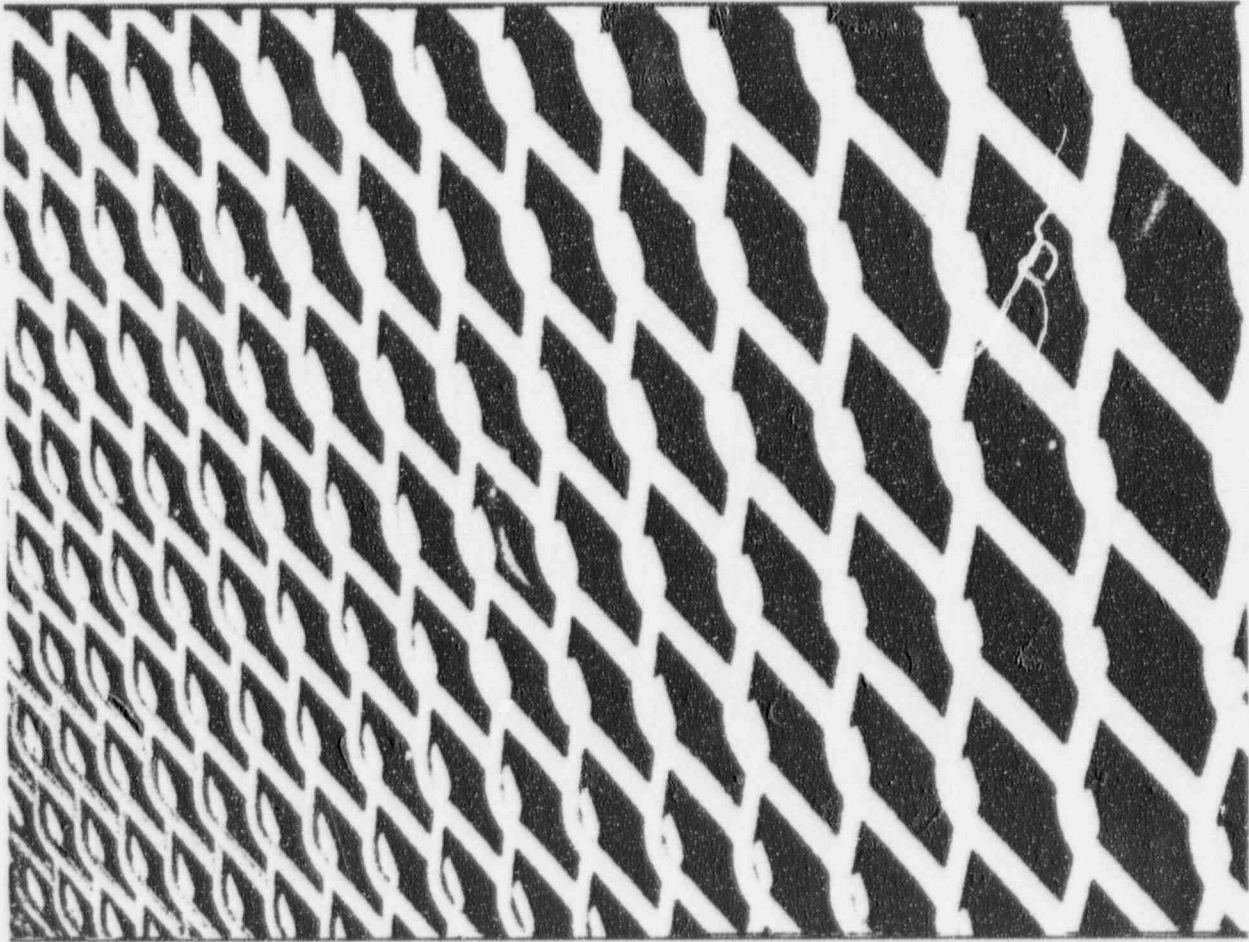
TURBINE BLDG - UNIT 2  
BASEMENT



1-WT-P-2A (close-up view)  
OIL SITE RESERVOIR

TURBINE BLDG.  
UNIT 2

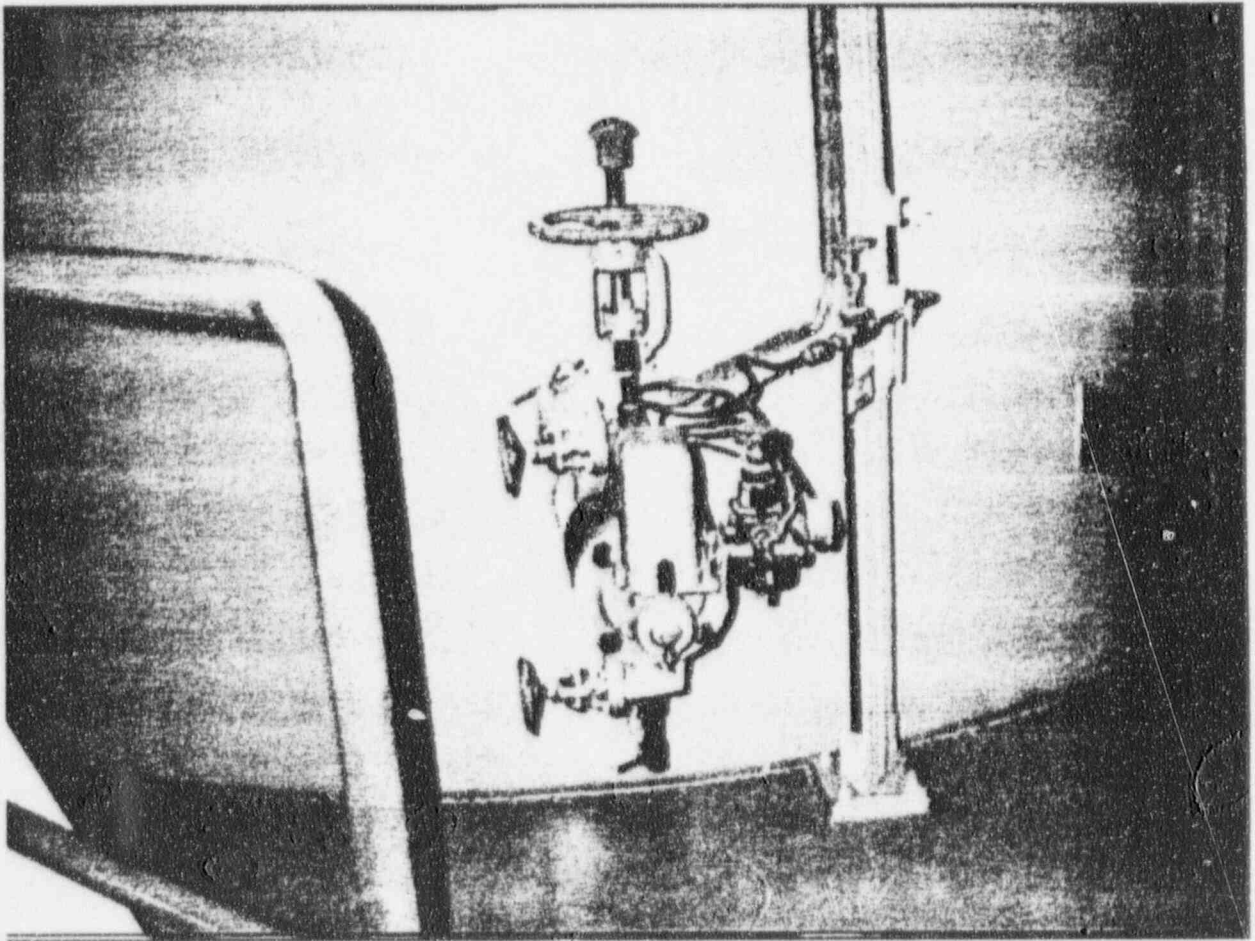
Note: The absence of the wire cage  
and the potential for the oil to  
drain out, if uplifted.



CERAMIC JOINT BEHIND FENCE IN ELECTRICAL PENETRATION OF  
CONTAINMENT

These CERAMIC INSULATORS are subject to failure during  
UNIT 2 CABLE TUNNEL seismic events,

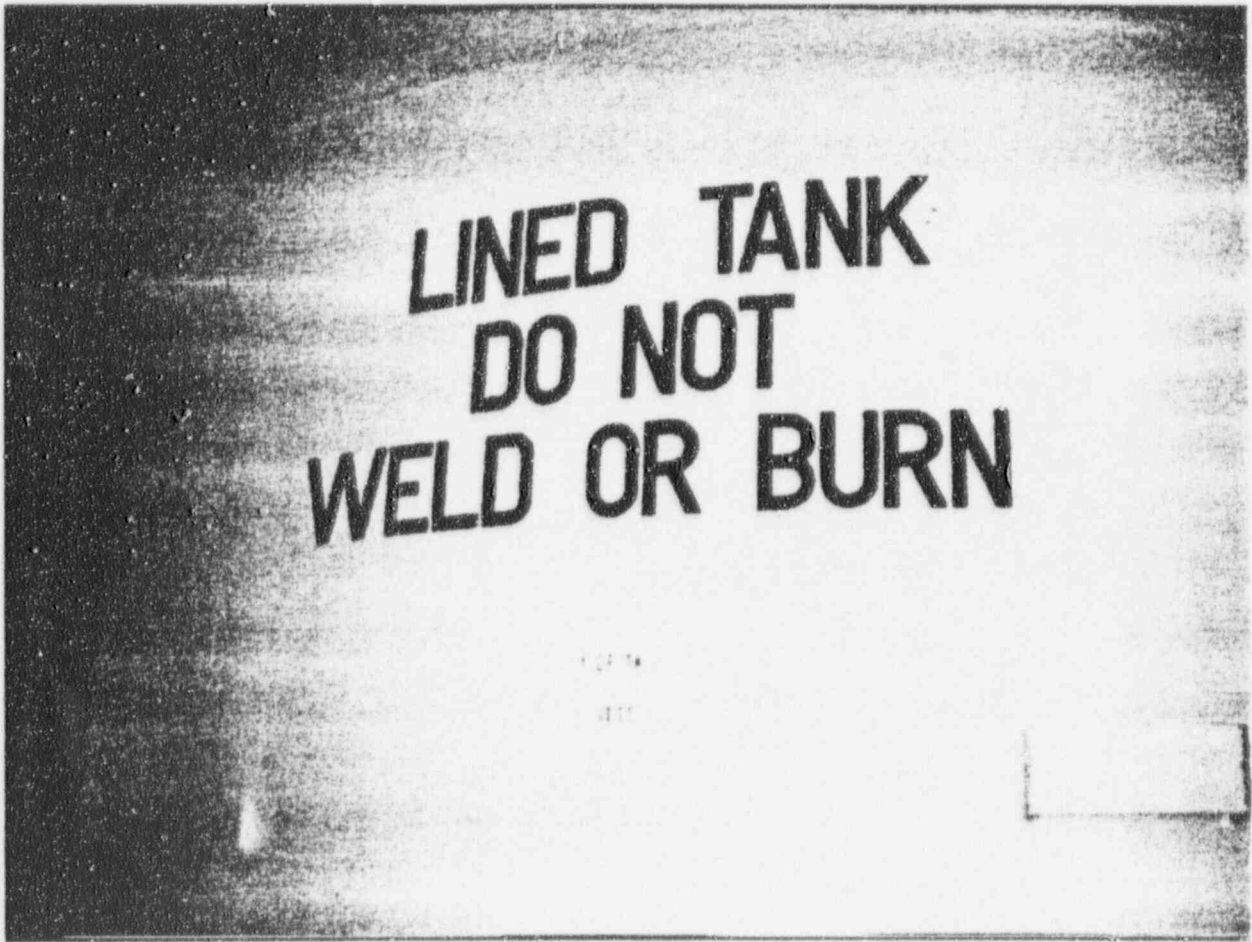
UNIT 1 CABLE TUNNEL ALSO HAS SIMILAR JOINT



1-CP-TK-3

TURBINE BLDG

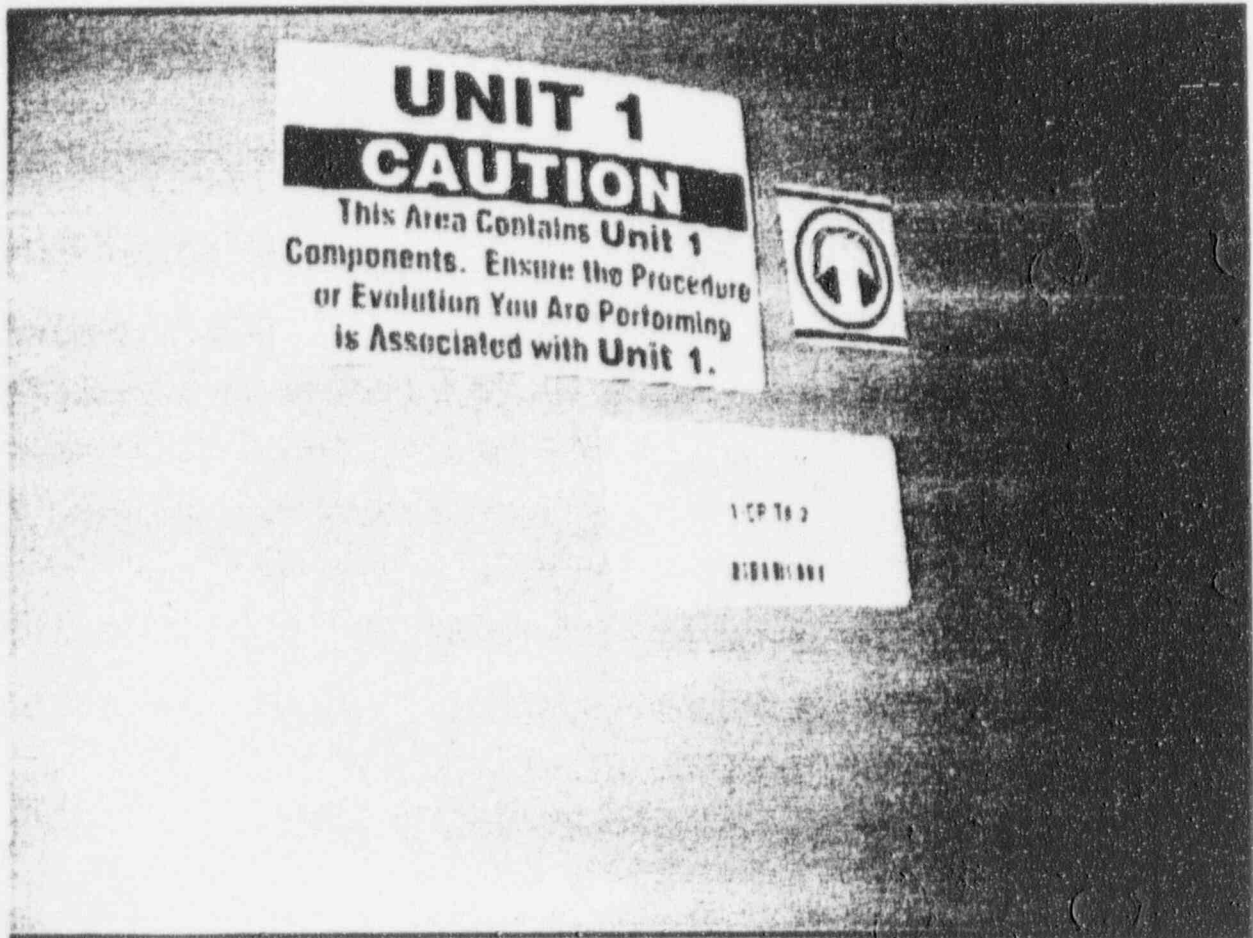
TANK WITH QUESTIONABLE ANCHORAGE



I-CP-TK-3

TURBINE BUILDING

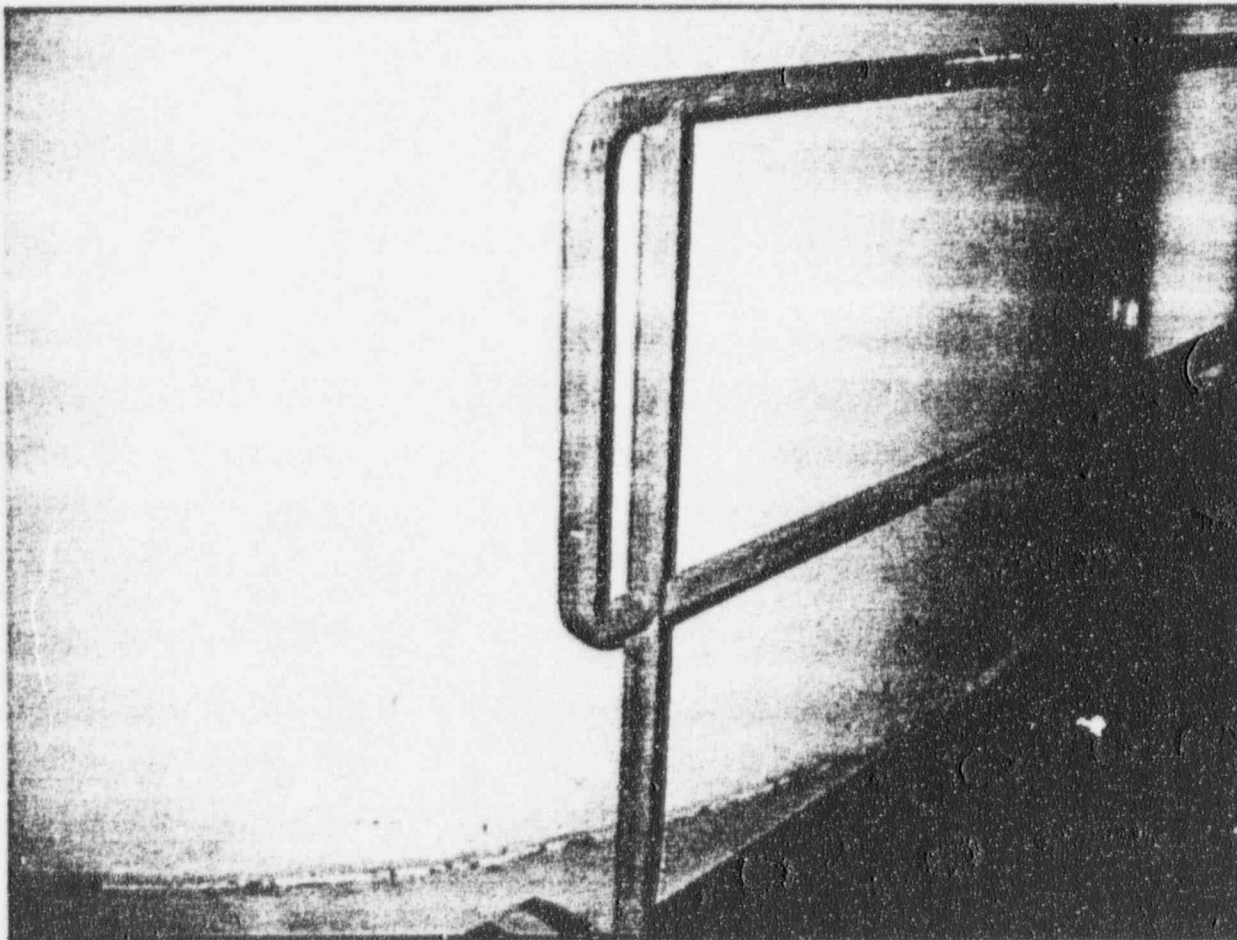
TANK WITH QUESTIONABLE ANCHORAGE



1-CP-TK-2

TURBINE BUILDING

TANK WITH QUESTIONABLE ANCHORAGE

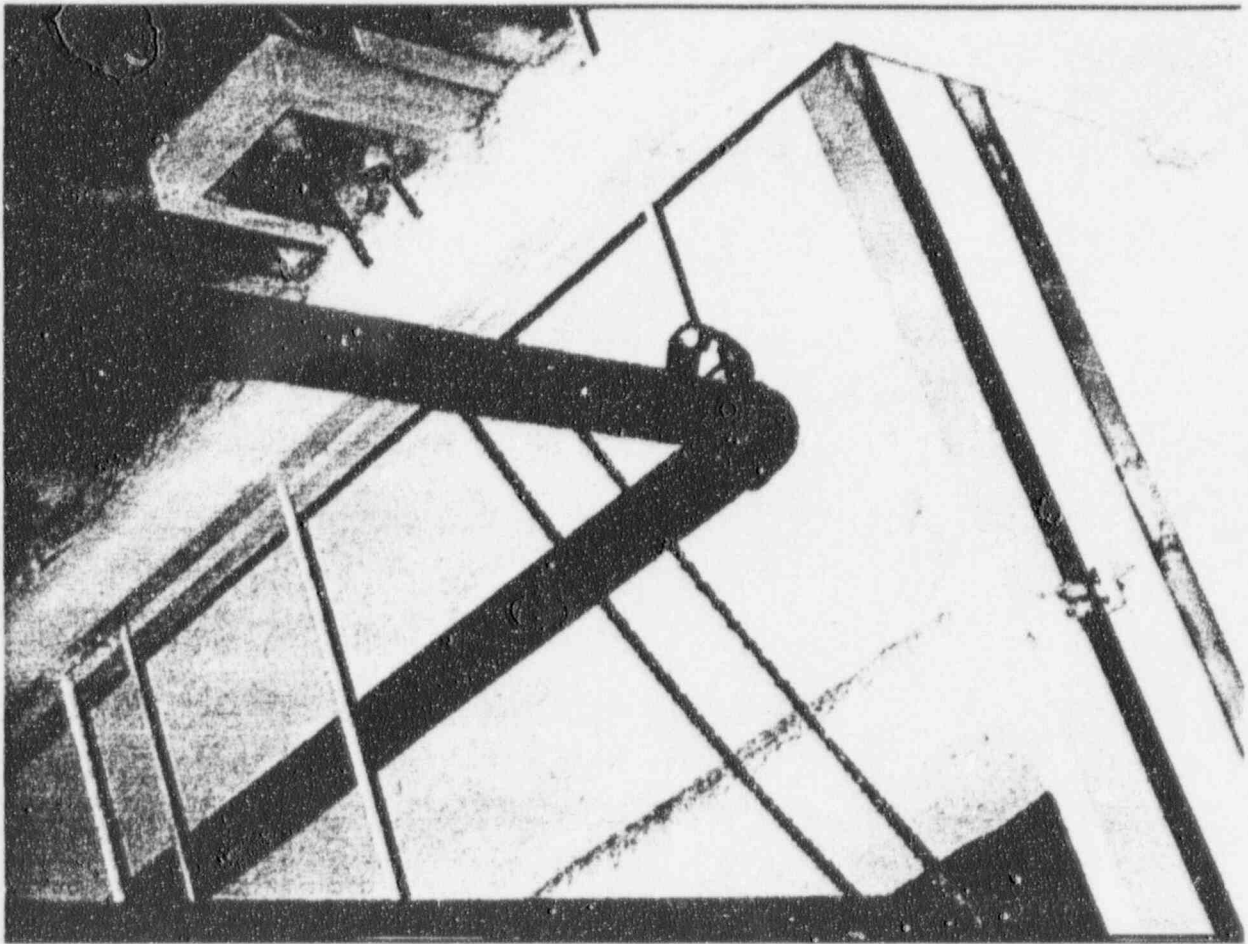


1-CP-TK-2 (TYPICAL for 1-CP-TK-2<sup>1,3</sup>) TURBINE BUILDING  
TANK  
WITH QUESTIONABLE ANCHORAGE

2-CP-TK-1, 2, 3

NO bolts were found except on 1-CP-TK-1 which  
had 3 bolts.

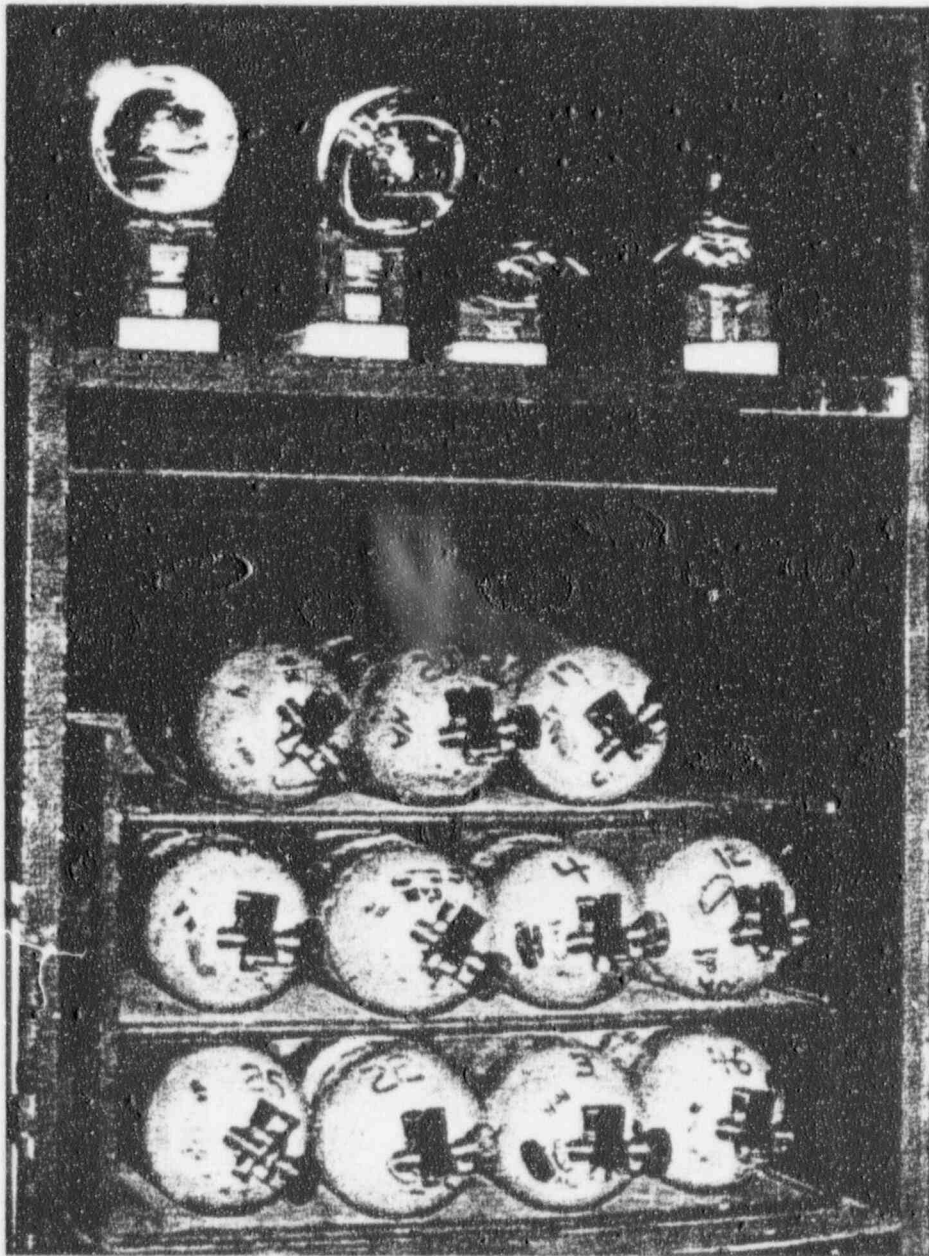




1" FIRE PIPING ELBOW HELD BY ROD

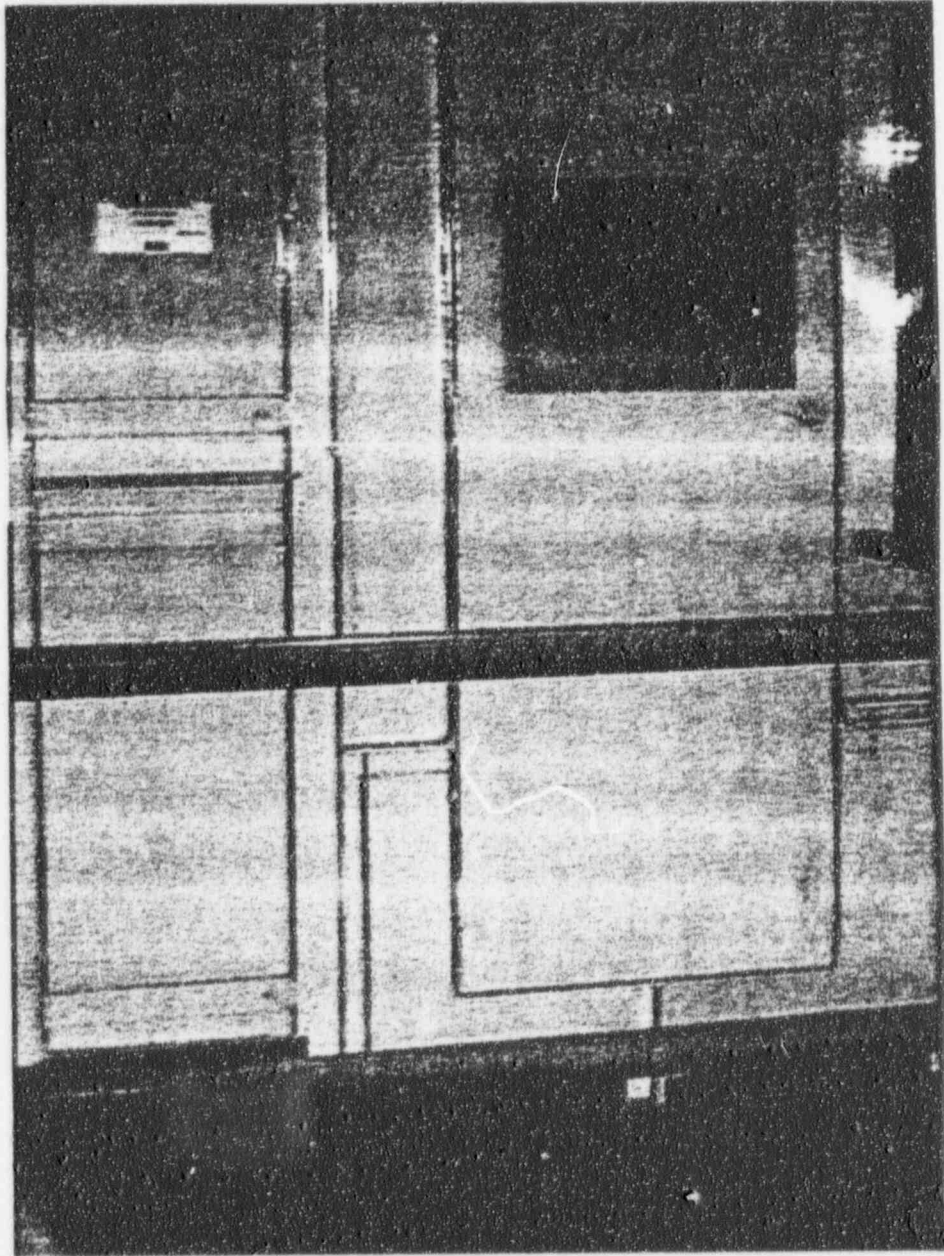
TURBINE BUILDING

There were threaded fittings downline  
of this photograph.



Unrestrained BOTTLED AIR CABINET  
(Potential Missile Concerns)

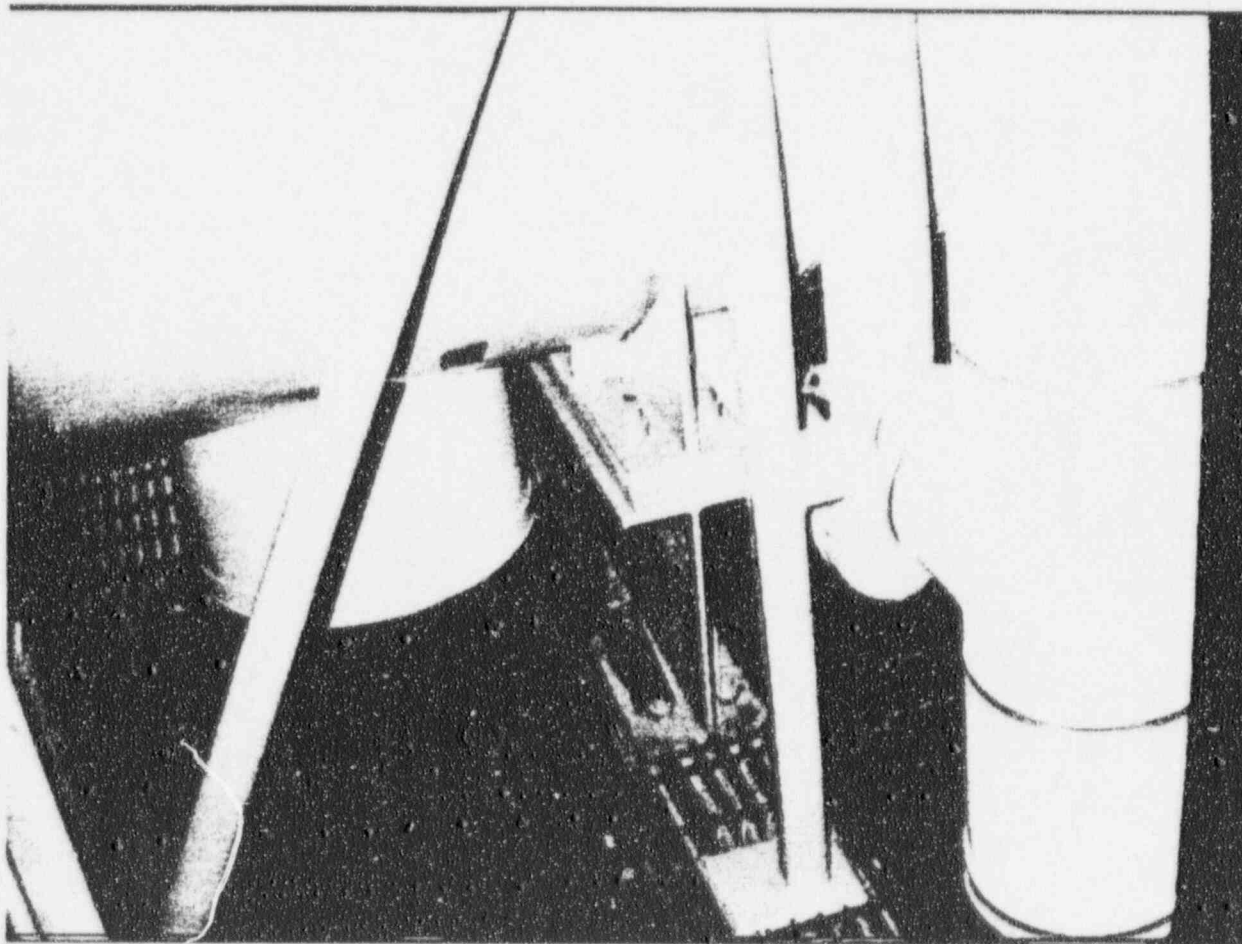
UNIT 1 TURBINE  
BUILDING



I-HV-AC-5 HEATING AND VENTILATION COOLING COIL  
NOTE ANCHORAGE requires verification

TURBINE BUILDING - UNIT 1

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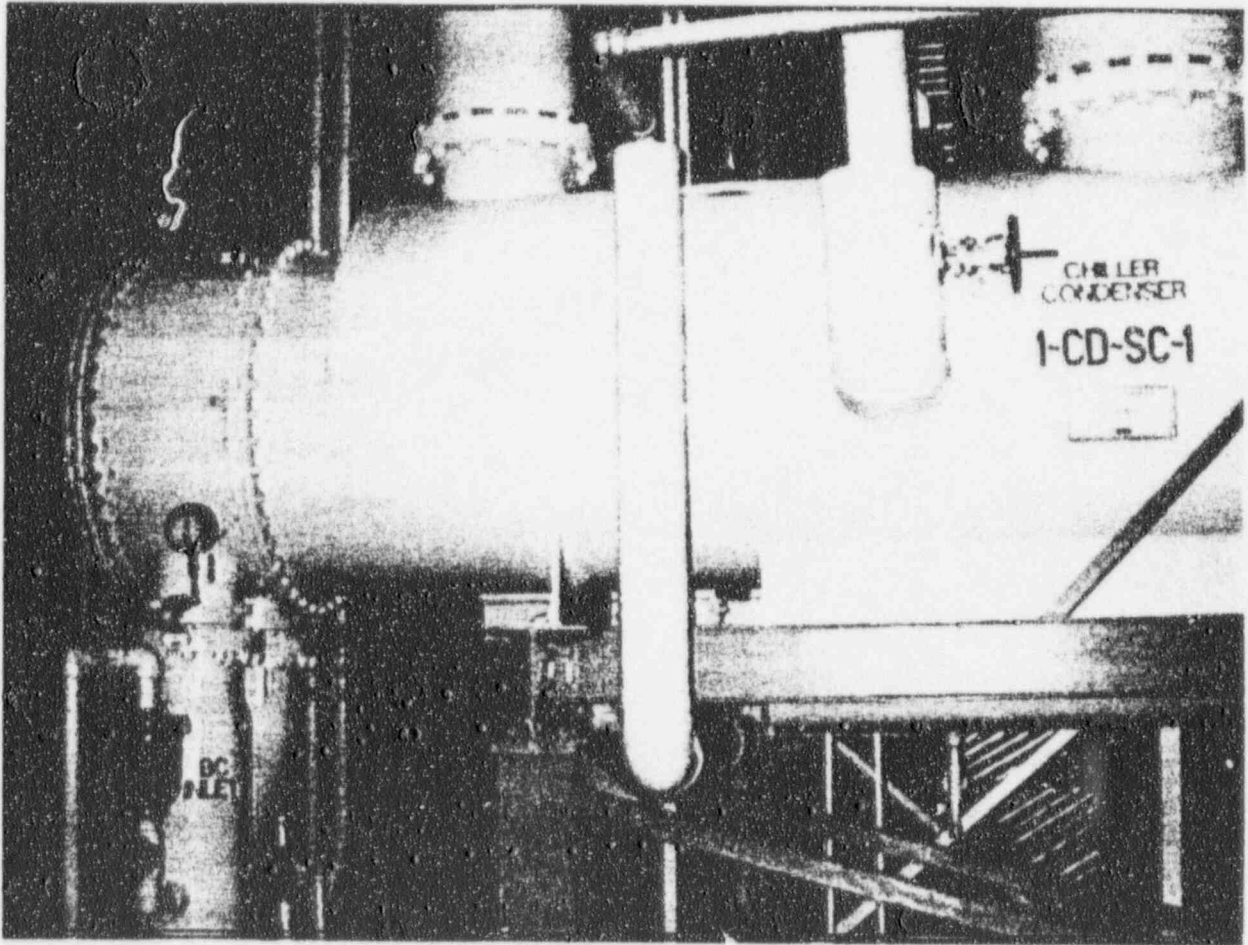


1-50-TK-1B

TURBINE BUILDING

1B REHEATER DRAIN RECEIVER

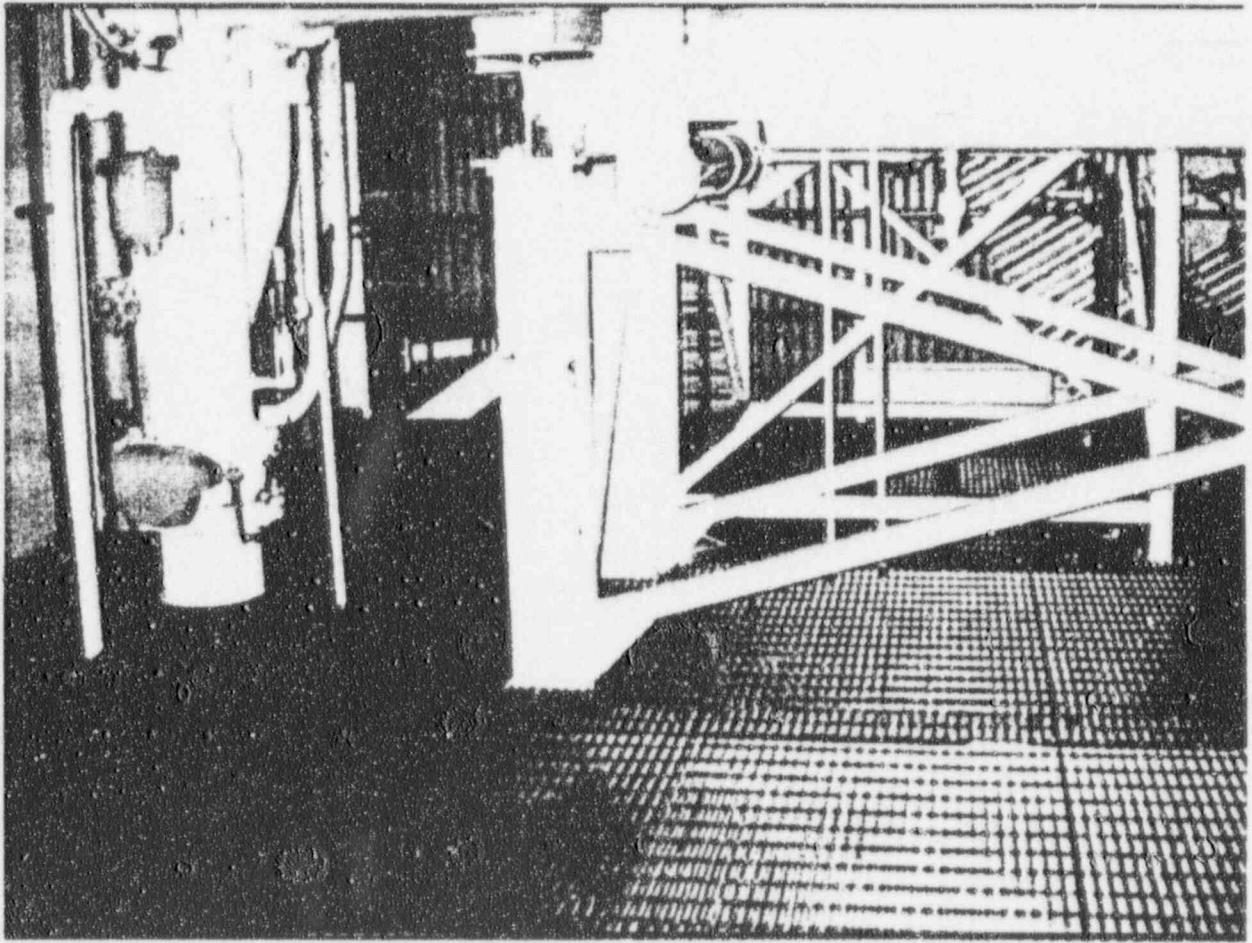
NOTE: ANCHORAGE to STEEL ON Mezzanine EL. 277'



1-CD-SC-1 (upper view)  
"Chiller Condenser"

TURBINE BLDG.

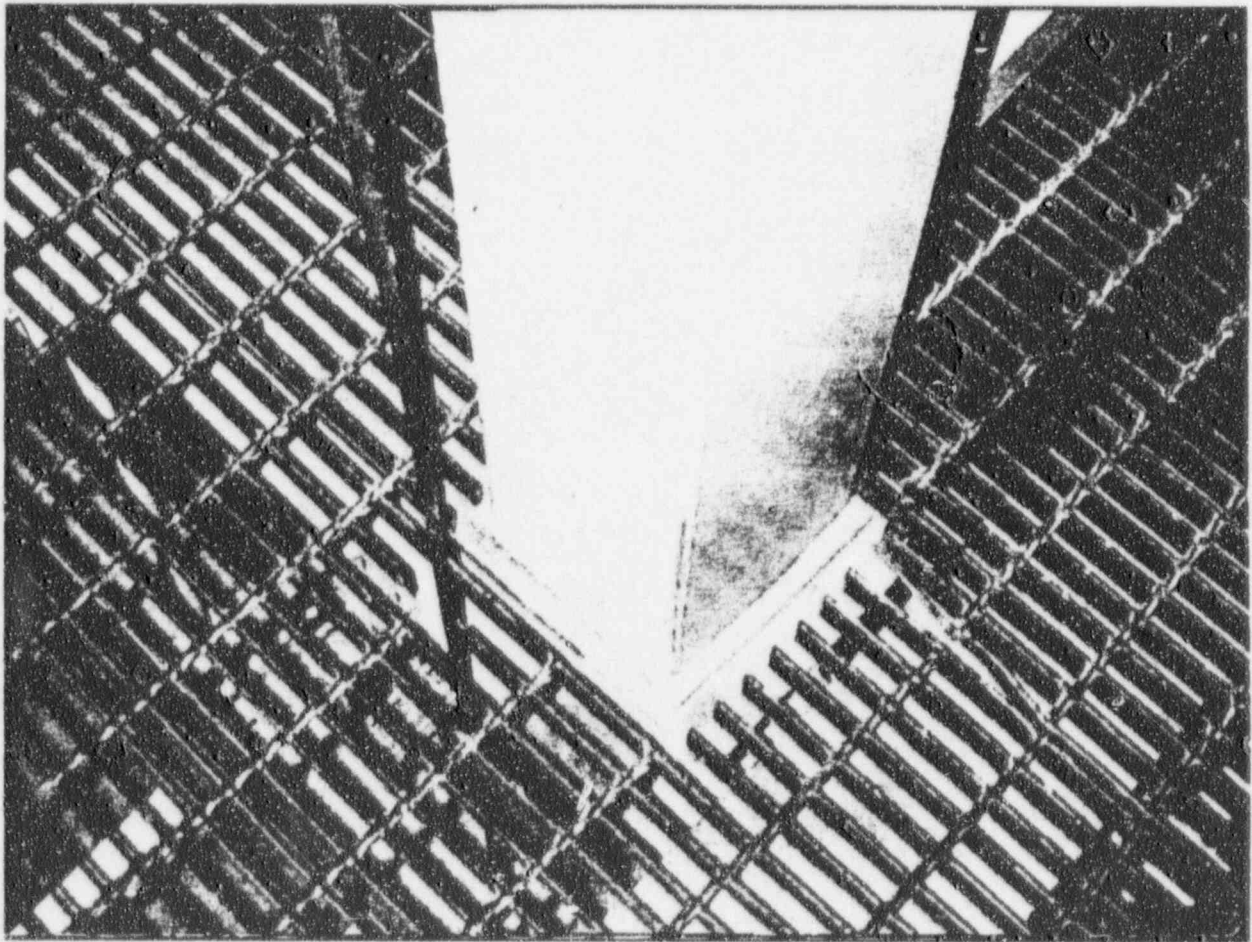
NOTE ANCHORAGE TO MEZZANINE STEEL EL. 277'



1-CP-5C-1 (lower view)

TURBINE BUILDING

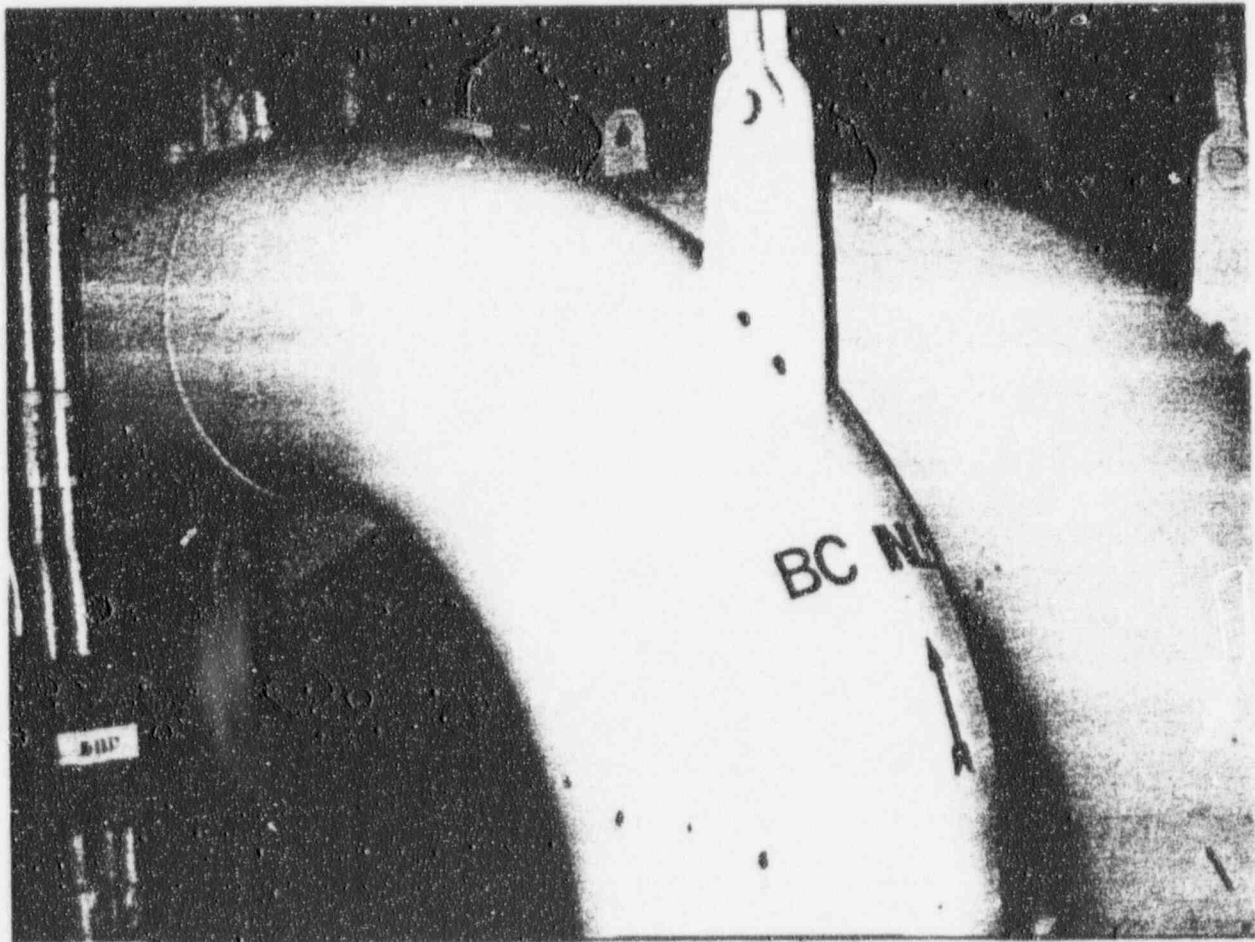
NOTE ANCHORAGE TO MEZZANINE STEEL EL. 277'



CONDENSER HOGGER

TURBINE BUILDING EL. 277'

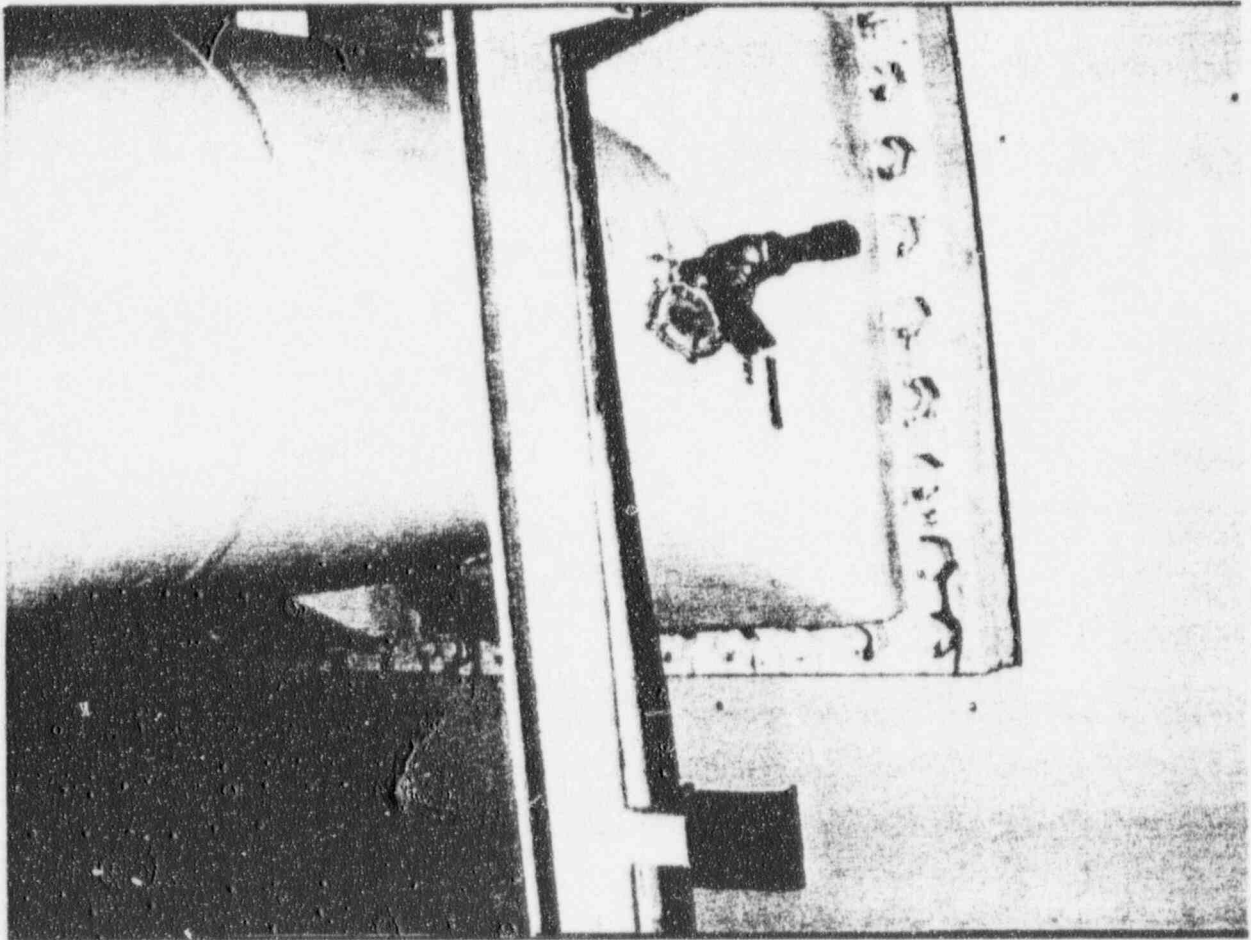
- EXAMPLE OF ANCHORAGE OF IRGS TO MEZZANINE STEEL (TORSION CONCERNS)
- NOTE GAP



OUTLET AND INLET PIPING ENTERING WATERBOX  
*Well supported piping*

TURBINE  
BUILDING

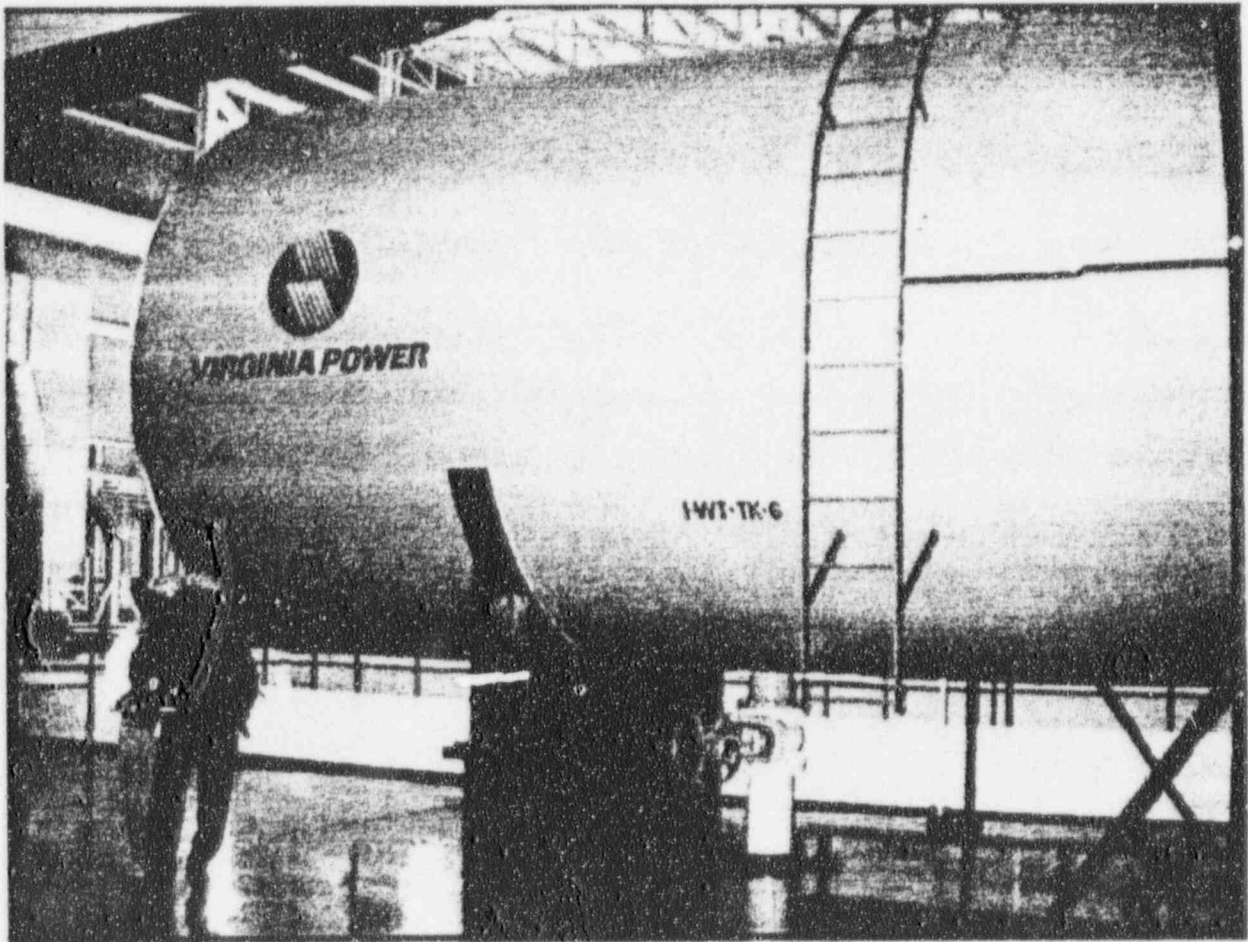




PIPING ENTERING WATERBOX

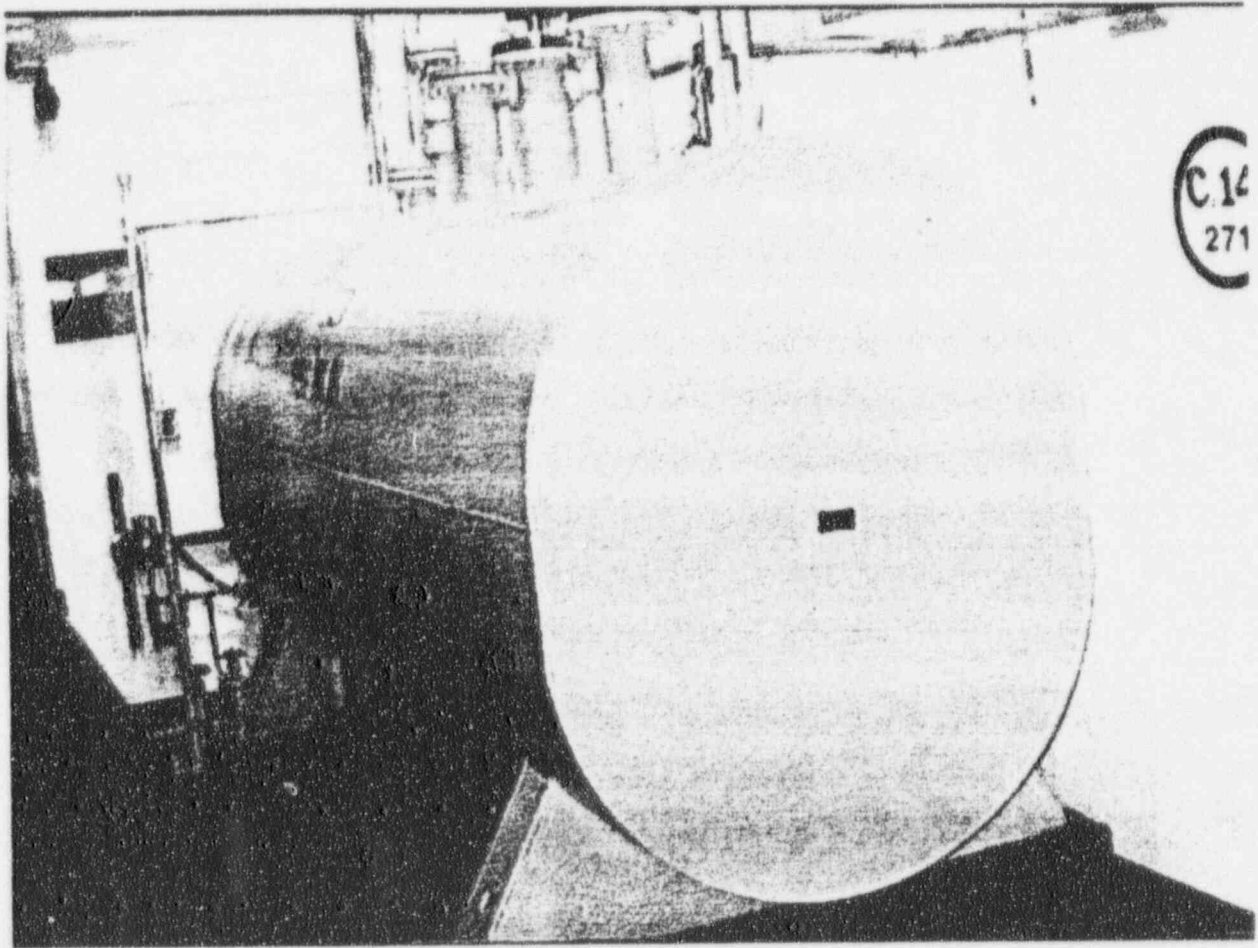
TURBINE BUILDING

THIS PIPING MAY SUPPORT WATER BOX



1-WT-TK-6  
Well anchored TANK on Turbine Deck.

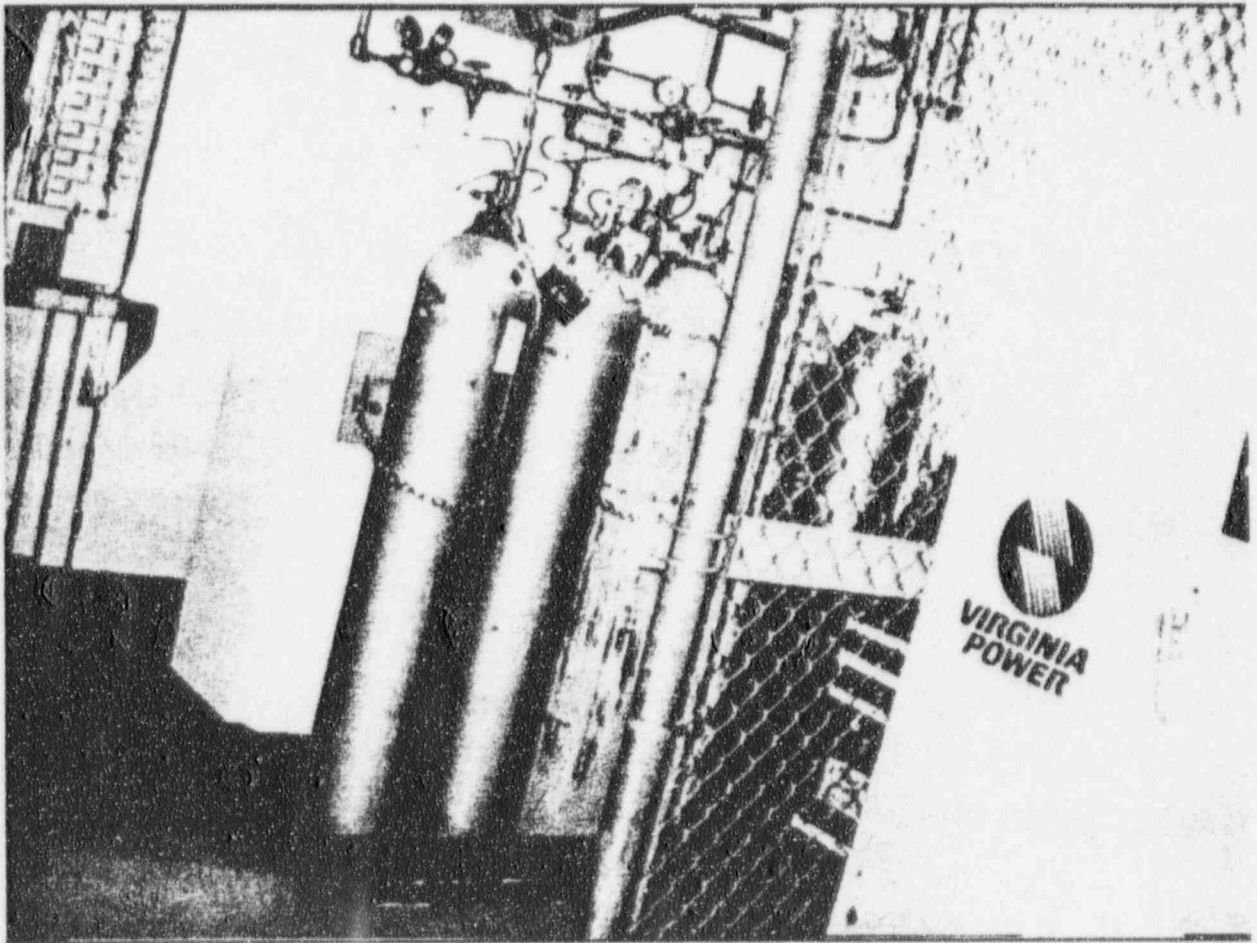
TURBINE BUILDING  
Elev. 303'



1-EG-7K-1H

EDG ROOM

Emergency Generator (Diesel) DAY TANK & PIPING  
All well supported.



SAMPLING ROOM AIRBOTTLES

BOTTLES ARE NOT WELL RESTRAINED

274' Auxiliary  
Building

**IPEEE(Seismic) Walkdowns  
Reactor Containment Bldg.  
North Anna Power Station Unit 1**

A walkdown in the Reactor Containment Bldg. was conducted by D.Bhargava and D.P.Madden on 9-28-94 to address several miscellaneous IPEEE(Seismic) issues. The following is a summary of the issues addressed, notes of associated discussions, as well as the results of the walkdowns performed:

1. Seismic/Fire Interaction And Generic Issue 57:

Attachment 1 (memo from L.T.Warnick to T.W.Hsu dated 6-3-94) provides a list of equipment that is to be included in the seismic/fire interaction walkdowns. The only equipment identified in Attachment 1 that is located in the Reactor Containment Bldg. is the manual hose standpipes. The standpipes and the associated piping were installed by DCP 78-68C. Per DCP 78-68C, the supports were seismically designed to preclude damage to Safety Related components. Additionally, Lee Warnick was contacted and he noted that the system has an isolation valve that is located in the Auxiliary Bldg. that is normally locked closed so that the system is normally dry and that the system does not have to function during or after an earthquake. The piping as well as the 6 standpipes (2 at elev. 291' and 4 at elev. 262') were walked down and it was noted that the piping was welded (not threaded) and the supports appeared to be robust. Based on the walkdowns and the other information discussed above the piping, supports, and standpipes were judged to be not a concern.

Although not identified in Attachment 1, another possible concern associated with seismic/fire interaction noted by Mr. R. Campbell of EQE Corp. is that the lube oil system for the Reactor Coolant Pumps could be a flammable source. Again Lee Warnick was contacted and he noted that at North Anna this system was seismically designed by NUS and installed by DCP 80-S47. DCP 80-S47 was briefly reviewed but due to lack of time we were unable to identify the layout of the system or location of drain tank (or tanks?). As a result, a walkdown of this system was not performed and it was not even determined if a walkdown is necessary. This should be discussed further with the Fire Protection Group and DCP 80-S47 should be reviewed more thoroughly to determine if a walkdown is warranted.

2. Generic Issue 131 - Movable Flux Monitoring Cart

Virginia Power previously addressed this issue by installing cart restraints in EWR 89-418. The cart was walked down (see photos in Attachment 2) and although the restraints were not bolted to the cart at that time the restraints were confirmed to be as shown on the EWR drawings. It was determined that procedure IMP-C-1-IC-07 requires the cart to be bolted to the restraints prior to unit start-up. The capability of the restraints to withstand the Review Level Earthquake should be confirmed (ref. Design Basis Calc. 14938.30-S-1).

### 3. Tubing/Air Line Walkdowns

The tubing/air lines leading to several valves and instruments associated with IPEEE(seismic) components were walked down. The tubing walked down included the supply lines from the nitrogen cylinders to the PORV's in the Pressurizer area (elev. 291') and several air operated valves located in the mechanical penetration area and tubing leading to instruments mounted on racks or independently mounted. The following were noted during the walkdowns:

- a) The tubing was typically supported to Unistrut frames about every 4'.
- b) The tubing adjacent to the components were sufficiently flexible. As one would expect the tubing leading to line mounted valves were more flexible.
- c) The construction of the tubing appeared good.
- d) No seismic interaction concerns were noted.

Based on these area walkdowns and walkdowns performed earlier for specific components, the tubing was judged to be adequate.

While conducting the tubing walkdowns it was noted that the support for the tubing leading to instrument rack 1-EI-CB-129 was attached to both the interior crane wall and the exterior liner. Both the IPEEE(Seismic) and USI A-46 SSELs were reviewed and it was determined that the components mounted to this rack (main steam flow transmitters) were not contained within. Therefore, this tubing is not in the scope of these programs. It should be noted that this support and associated tubing were briefly reviewed and based on this review it is anticipated that a more thorough review if it was required would demonstrate that the tubing would have functioned during or after a Design Basis Earthquake.

Prepared By: D. P. Madden 10-3-94  
D. P. Madden

Checked By: D. Bhargava 10-3-94  
D. Bhargava

#### Attachments

cc: Mr. T. W. Hsu - IN1NW  
IPEEE(Seismic) Files

IPEEE (SEISMIC) WALKDOWN OF MISCELLANEOUS ITEMS INSIDE  
NORTH ANNA UNIT 1 CONTAINMENT:

Following is a brief summary of walkdown performed on 9-26-94 of the miscellaneous items.

1) Pipe Penetrations

Two pipes going through penetrations will require further evaluation for their flexibility. One of the pipe is at Penetration 54 and the other pipe is at Penetration near Column 10 above elevation 241'. Photographs of these two penetrations are attached. No other concerns were found.

2) Accumulator Tank foundation

Safety Injection Accumulator tank foundations in the basement at 216' elevation were inspected and no concerns were noted.

3) Fans and coolers foundation

HVAC Fans and Cooler foundations in the basement at elevation 216' were inspected and no concerns were found.

4) Spray Piping

Containment Spray Piping supports were reviewed to ensure that they are not supported by flexible cables. The supports were found to be structural frames attached to the roof of the containment. Remote visual device was used since the piping is at a higher elevation and could not be accessed for direct visual inspection.

Evaluated by : C.G. Ranganath 9-26-94

Evaluated by : Kamal Meharke 9-26-94

copy:  
EM IPEEE FILE

**Miscellaneous IPEEE(Seismic) Walkdowns  
Reactor Containment Building  
North Anna Power Station Unit 2**

A walkdown in the Unit 2 Reactor Containment Building was conducted by D.Bhargava and D.P.Madden on 3-29-95 to address miscellaneous IPEEE(Seismic) issues. As noted in Attachments 1 and 2, similar walkdowns were performed for Unit 1. The following is the results of the Unit 2 walkdowns:

1. Seismic/Fire Interaction And Generic Issue 57:

The fire protection piping along with the manual hose standpipes were walked down. **Just as in Unit 1**, the supports were robust and no concerns were identified.

Another possible seismic/fire interaction concern noted by Mr. R. Campbell of EQE Corp. is that the lube oil system for the Reactor Coolant Pumps (RCP) could be a flammable source. An oil collection system for each RCP motor was seismically designed by NUS and installed by DCP 80-S47. For each reactor coolant pump, the system consists of metal shields and drip pans connected to the pump motor assembly, a collection tank that is located in the loop room below (elev. 241'), and piping between the drip pans and the collection tank. Two of the three collection tanks which are located in the loop rooms along with their associated piping were walked down and were judged to be adequately restrained. Additionally, a walkdown in two of the motor cubicles was performed and no concerns were identified. Therefore, this system was not considered a credible fire source during a seismic event.

As noted in Attachment 1, the RCP motors lube oil collection system in Unit 1 was not walked down. However, based on the results of the Unit 2 walkdown, review of VIMS, and review of DCP 80-S47, it was not deemed necessary to walkdown the Unit 1 RCP motors lube oil collection system.

2. Generic Issue 131 - Movable Flux Monitoring Cart

Similar to Unit 1, cart restraints have been installed but the restraints were not bolted to the cart at that time of the walkdowns. However, just as in Unit 1, a procedure exists that requires the cart to be bolted to the restraints prior to unit start-up.

3. Tubing/Air Line Walkdowns

The tubing/air lines leading to several valves and instruments associated with IPEEE(seismic) components were walked down. The tubing walked down included the supply lines from the nitrogen cylinders to the PORV's in the Pressurizer area (elev. 291'), several air operated valves located in the mechanical penetration area, and tubing leading to instruments mounted on racks or independently mounted. The tubing was well supported, had adequate flexibility in the vicinity of the equipment, and no concerns were identified.



4. Piping Penetrations

The Containment External structure and the Containment Internal structure are attached to the same foundation, however, these are separate structures. The piping in the penetration area (elev. 241') was walked down to see if the piping had adequate flexibility to accommodate differential movement between these two structures. All of the piping appeared to have adequate flexibility in this area except one that requires further review. This line is 2"-DG-435-153A-Q2 which leads to penetration 33 (see attachment 3).

5. Accumulator Tank and HVAC Fans and Coolers Foundations

The Accumulator Tanks and the HVAC Fans and Coolers are located in the basement (elev. 216'). The foundations were inspected for these components and similarly to Unit 1 the anchorage was robust and no concerns were identified.

6. HVAC Ducting

A sampling of the HVAC ducting was walked down. The ducting was rigidly supported with structural steel members, the supports were adequately spaced, and no concerns were identified.

7. Containment Spray Piping

Per Bob Campbell of EQE Corp., for most plants the containment spray piping and supports are robust, however, for one plant it was noted that the spray rings were suspended by cables. As a result, this piping was walked down as best possible. The spray rings were viewed from elevation 291' which is approximately 75'-100' below the spray rings. From this distance the rings appeared to be rigidly supported. This was further confirmed by viewing the piping drawings 12050-ECI-114 series.

Prepared By: D. P. Madden #24-95  
D. P. Madden

Checked By: D. Bhargava 424-95  
D. Bhargava

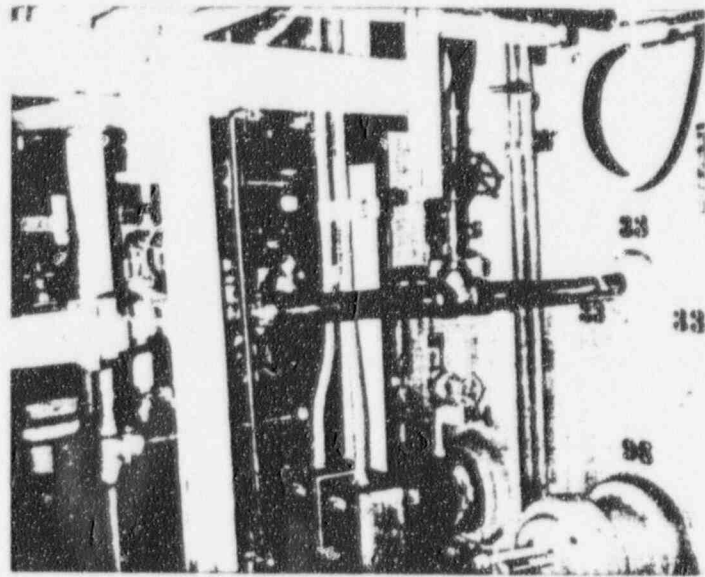
Attachments

cc: Mr. T. W. Hsu - IN1NW  
IPEEE(Seismic) Files

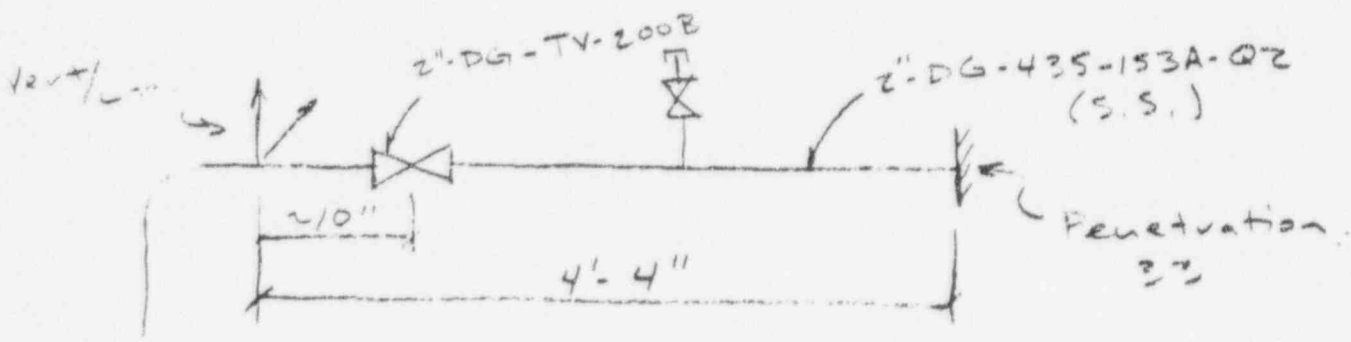


VIRGINIA POWER

Document Type	Attachment 3	Engineering Work Sheet		POW 14
Project	NAP - Unit 2	Doc No	Rev No	Sheet No
Subject	TVEEL (S.S.) Model Workdrawing	Prepared By	DPM	Date 4-24-95
System	Condenser + Penetration Area	Checked By	DB	Date 4-24-95



2" S.S. Line to Penet. 33



Elev. View

ATTACHMENT 1 sh. 1 of 2  
Original Attachments not included

IPEEE(Seismic) Walkdowns  
Reactor Containment Bldg.  
North Anna Power Station Unit 1

A walkdown in the Reactor Containment Bldg. was conducted by D. Bhargava and D.P. Madden on 9-28-94 to address several miscellaneous IPEEE(Seismic) issues. The following is a summary of the issues addressed, notes of associated discussions, as well as the results of the walkdowns performed:

1. Seismic/Fire Interaction And Generic Issue 57:

Attachment 1 (memo from L.T. Warnick to T.W. Hsu dated 6-3-94) provides a list of equipment that is to be included in the seismic/fire interaction walkdowns. The only equipment identified in Attachment 1 that is located in the Reactor Containment Bldg. is the manual hose standpipes. The standpipes and the associated piping were installed by DCP 78-68C. Per DCP 78-68C, the supports were seismically designed to preclude damage to Safety Related components. Additionally, Lee Warnick was contacted and he noted that the system has an isolation valve that is located in the Auxiliary Bldg. that is normally locked closed so that the system is normally dry and that the system does not have to function during or after an earthquake. The piping as well as the 6 standpipes (2 at elev. 291' and 4 at elev. 262') were walked down and it was noted that the piping was welded (not threaded) and the supports appeared to be robust. Based on the walkdowns and the other information discussed above the piping, supports, and standpipes were judged to be not a concern.

Although not identified in Attachment 1, another possible concern associated with seismic/fire interaction noted by Mr. R. Campbell of EQE Corp. is that the lube oil system for the Reactor Coolant Pumps could be a flammable source. Again Lee Warnick was contacted and he noted that at North Anna this system was seismically designed by NUS and installed by DCP 80-S47. DCP 80-S47 was briefly reviewed but due to lack of time we were unable to identify the layout of the system or location of drain tank (or tanks?). As a result, a walkdown of this system was not performed and it was not even determined if a walkdown is necessary. This should be discussed further with the Fire Protection Group and DCP 80-S47 should be reviewed more thoroughly to determine if a walkdown is warranted.

2. Generic Issue 131 - Movable Flux Monitoring Cart

Virginia Power previously addressed this issue by installing cart restraints in EWR 89-418. The cart was walked down (see photos in Attachment 2) and although the restraints were not bolted to the cart at that time the restraints were confirmed to be as shown on the EWR drawings. It was determined that procedure IMP-C-1-IC-07 requires the cart to be bolted to the restraints prior to unit start-up. The capability of the restraints to withstand the Review Level Earthquake should be confirmed (ref. Design Basis Calc. 14938.30-S-1).

## 1. Tubing/Air Line Walkdowns

The tubing/air lines leading to several valves and instruments associated with IPEEE(seismic) components were walked down. The tubing walked down included the supply lines from the nitrogen cylinders to the PORV's in the Pressurizer area (elev. 291') and several air operated valves located in the mechanical penetration area and tubing leading to instruments mounted on racks or independently mounted. The following were noted during the walkdowns:

- a) The tubing was typically supported to Unistrut frames about every 4'.
- b) The tubing adjacent to the components were sufficiently flexible. As one would expect the tubing leading to line mounted valves were more flexible.
- c) The construction of the tubing appeared good.
- d) No seismic interaction concerns were noted.

Based on these area walkdowns and walkdowns performed earlier for specific components, the tubing was judged to be adequate.

While conducting the tubing walkdowns it was noted that the support for the tubing leading to instrument rack 1-EI-CB-129 was attached to both the interior crane wall and the exterior liner. Both the IPEEE(Seismic) and USI A-46 SSELs were reviewed and it was determined that the components mounted to this rack (main steam flow transmitters) were not contained within. Therefore, this tubing is not in the scope of these programs. It should be noted that this support and associated tubing were briefly reviewed and based on this review it is anticipated that a more thorough review if it was required would demonstrate that the tubing would have functioned during or after a Design Basis Earthquake.

Prepared By: D. P. Madden 10-3-94  
D. P. Madden

Checked By: D. Bhargava 10-3-94  
D. Bhargava

## Attachments

cc: Mr. T. W. Hsu - IN1NW  
IPEEE(Seismic) Files

ATTACHMENT 2 Sh. 1 of 1  
Original Attachment not included

## IPEEE (SEISMIC) WALKDOWN OF MISCELLANEOUS ITEMS INSIDE

### NORTH ANNA UNIT 1 CONTAINMENT:

Following is a brief summary of walkdown performed on 9-26-94 of the miscellaneous items.

#### 1) Pipe Penetrations

Two pipes going through penetrations will require further evaluation for their flexibility. One of the pipe is at Penetration 54 and the other pipe is at Penetration near Column 10 above elevation 241'. Photographs of these two penetrations are attached. No other concerns were found.

#### 2) Accumulator Tank foundation

Safety Injection Accumulator tank foundations in the basement at 216' elevation were inspected and no concerns were noted.

#### 3) Fans and coolers foundation

HVAC Fans and Cooler foundations in the basement at elevation 216' were inspected and no concerns were found.

#### 4) Spray Piping

Containment Spray Piping supports were reviewed to ensure that they are not supported by flexible cables. The supports were found to be structural frames attached to the roof of the containment. Remote visual device was used since the piping is at a higher elevation and could not be accessed for direct visual inspection.

Evaluated by : C.G. Ranganath 9-26-94

Evaluated by : Kausal Mehta 9-26-94

copy:  
EM IPEEE FILE

**Miscellaneous IPEEE(Seismic) Walkdowns  
Reactor Containment Building  
North Anna Power Station Unit 2**

A walkdown in the Unit 2 Reactor Containment Building was conducted by D. Bhargava and D. Madden on 3-29-95 to address miscellaneous IPEEE(Seismic) issues. During the walkdowns of the piping in the piping penetration area, it was noted that the piping appeared to have adequate flexibility except that line 2"-DG-435-153A-Q2 which leads to penetration 33 required further review. For this piping, detailed piping analysis could not be located. The piping is shown on dwg. 12050-SPH-DG-442, sh.2 of 2, rev.3 and the first support adjacent to penetration 33 (FPH-DG-442-10) is shown on dwg.12050-ZFSK-DG-442-10-3. It is likely that the piping was routed and supported by the Site Engineering Office using the chart method and guidelines outlined in specification NAS-290. A simple review (attached) was performed and it was estimated that the magnitude of the stresses due to the relative displacement between the Containment Internal and External structures would be approximately 2000 psi. Based on this it was concluded that the this line had adequate flexibility.

D. P. Madden 4-16-97  
D. P. Madden

D. Bhargava 4-16-97  
D. Bhargava



VIRGINIA POWER

Document Type	Engineering Work Sheet			POW 14
Project	North Anna unit 1	Doc. No.	Rev. No.	Sheet No.
Subject	Penetration piping	Prepared By	CJR	Date 4-22-97
System		Checked By	Kew	Date 4-22-97

Verification of piping flexibility of pipes through containment penetrations:-

Pipe at penetration 54:-

Pipe through penetration 54 is 2"-VA-57-154-Q2  
(Ref. DWG: 11715-FP-81A-1)

This line is field supported similar to 2"-DG-435-153A-Q2 and hence has adequate flexibility.

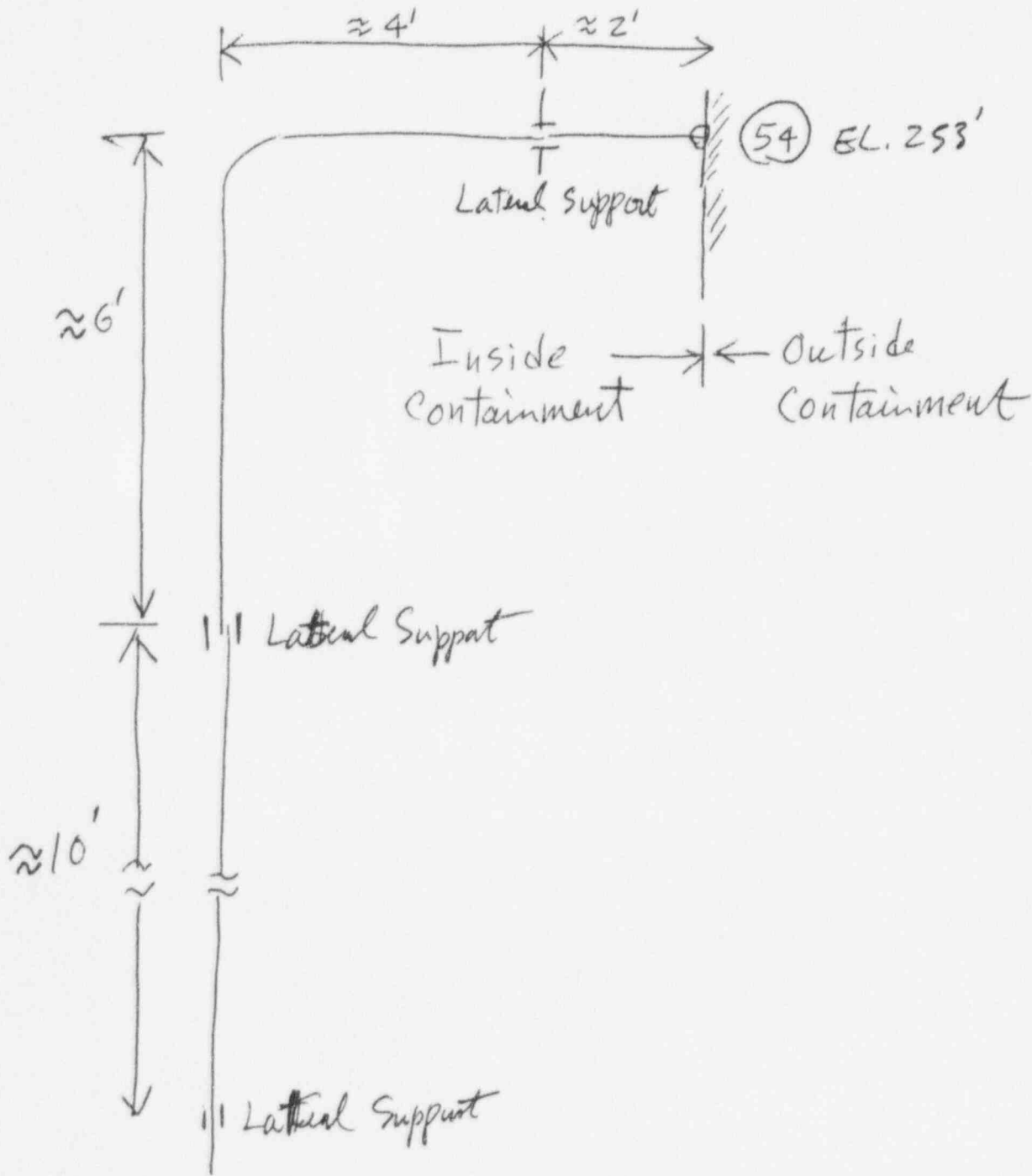
The pipe going through penetration near Column 10, above elev. 24.1'-0. This is an error in the walkdown notes and should be deleted.

This will be verified by walkdown during upcoming outage in May 1997  
walkdown of the penetration piping was done again on 5-21-97 which confirms the above.



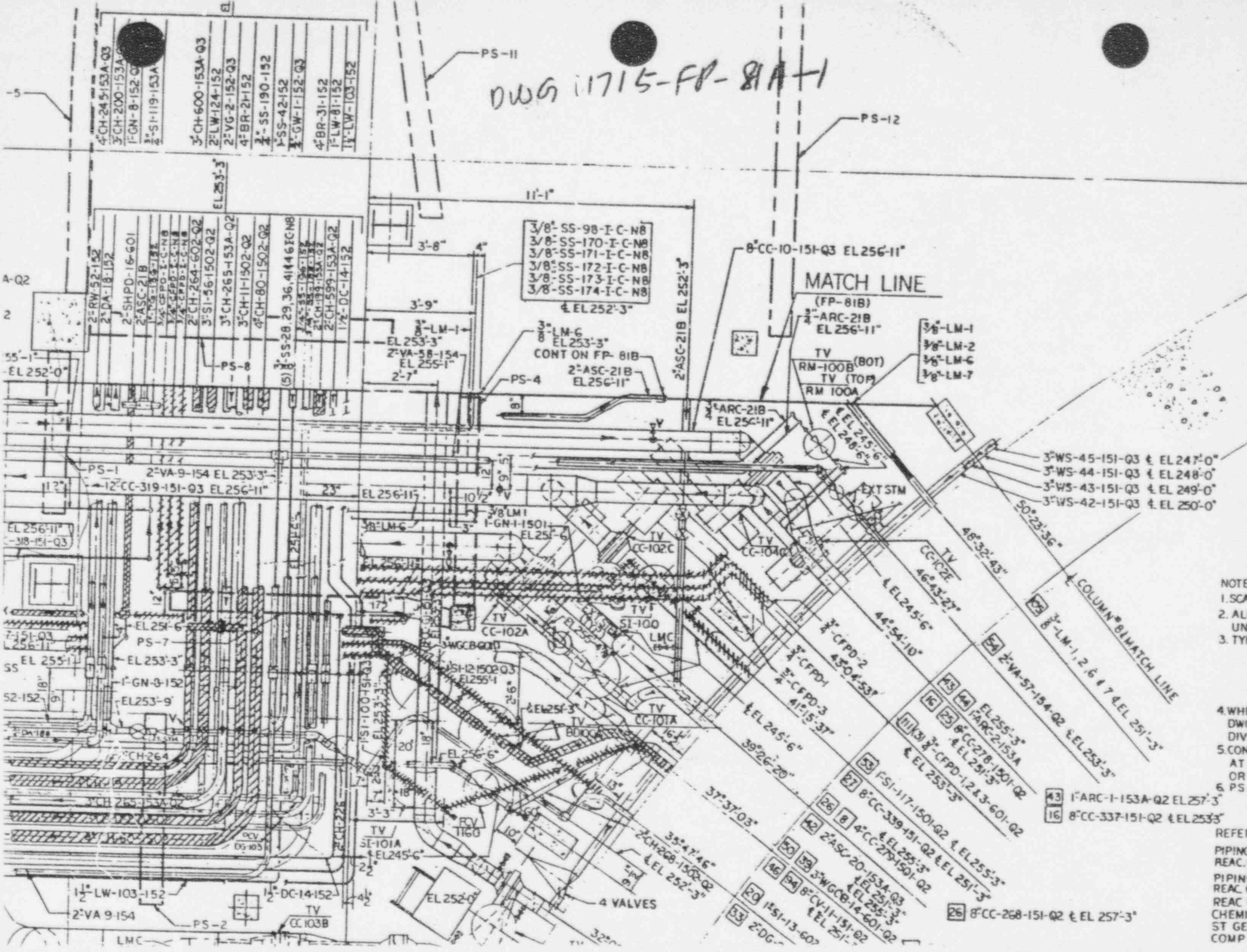
Document Type	Engineering Work Sheet			POW 14
Project	Doc. No.	Rev. No.	Sheet No.	
Subject	Prepared By TW Hsu		Date 5-21-97	
System	Checked By J. S. Tucker		Date 5-21-97	

NAPS-1  
PENETRATION 54  
2"-VA-57-154-Q2





DWG 1715-FP-8A-1

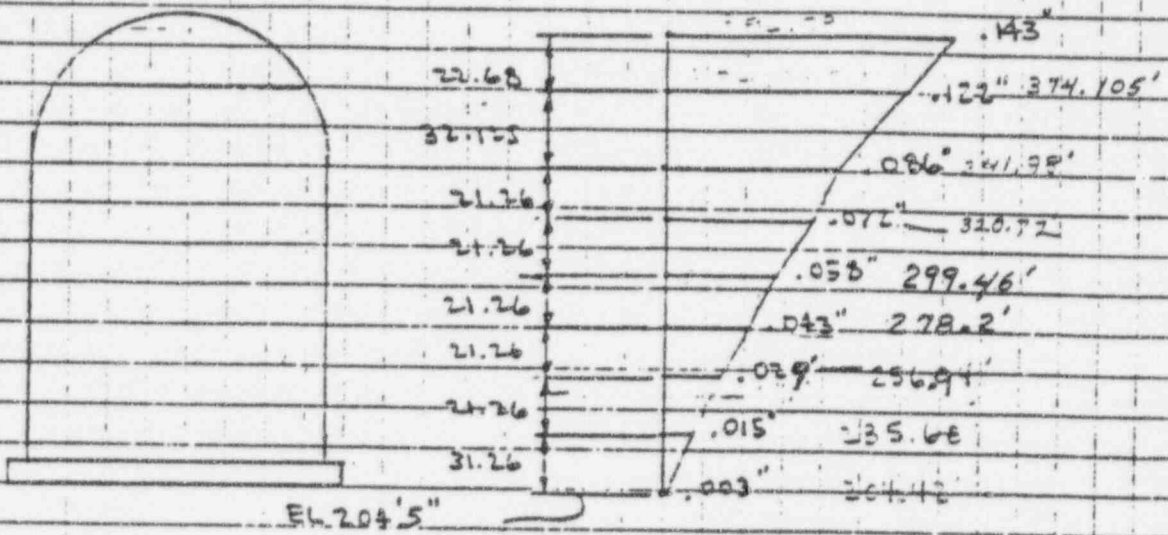


- NOTES
- SCALE
  - ALL UNLESS OTHERWISE SPECIFIED
  - TYPICAL
  - WHERE DIVISIONS ARE SHOWN AT 25' OR C
  - PS - 7
- REFER TO
- PIPING AND INSTRUMENTATION DIAGRAM
  - REACTOR COOLANT SYSTEM
  - PIPING AND INSTRUMENTATION DIAGRAM
  - REACTOR COOLANT SYSTEM
  - CHEMICAL PROCESSING
  - COMPONENTS

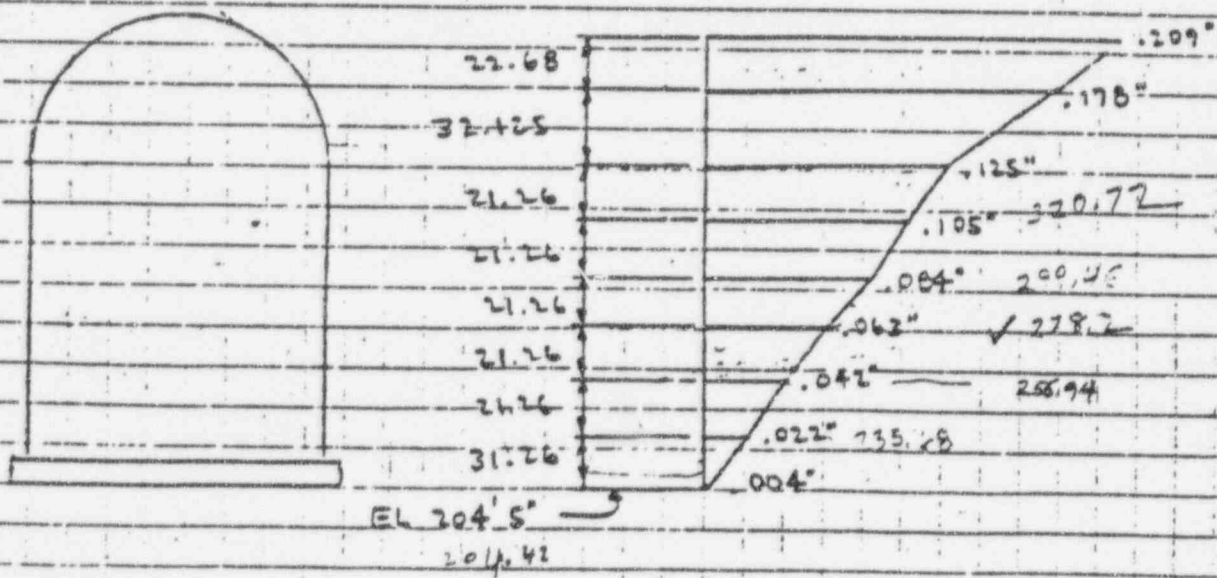
1 Client NEPCO 122 Location N. ANNA Est. No. 10 No 11715  
 2 Subject SEISMIC ANALYSIS REVISED DATE 21 1972 BY APRIL KRAI  
 3 REACTOR BLDG Checked NOV. 12, 1975 BY TALY  
 4 Based on \_\_\_\_\_ Revised \_\_\_\_\_ By \_\_\_\_\_

RMS DISPLACEMENT RESPONSE

CONTAINMENT STRUCTURE HORIZ. EXCITATION.



OBE .06G GROUND ACCELERATION @  
2% OF CRITICAL DAMPING



DBE .12G GROUND ACCELERATION @  
5% OF CRITICAL DAMPING

VELLO MORTAR AREA  
 A.O. NO. 12050  
 MINERAL, VA

2' DG-442-152-03  
 EL. 253.3'

φ 1/4" 2 3/4" 2 3/4"

1A

1B

1C

1D

1E

1F

1G

1H

1I

1J

1K

1L

1M

1N

1O

1P

1Q

1R

1S

1T

1U

1V

1W

1X

1Y

1Z

TS. 4-A-.25

TS. 5-B-.25

EL-247-11"

GC 13.0

ELEVATION

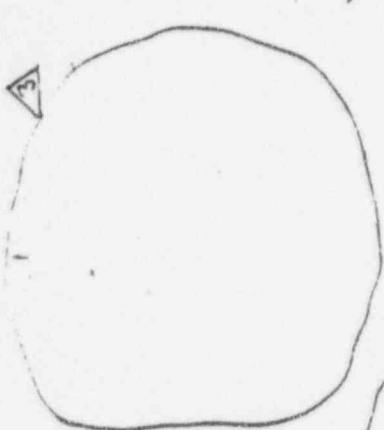
LOOKING EAST SEP 17 46' HORIZONTAL

SECT. A-A

NON CRITICAL DIMENSIONS

NOTE: ALL WELDS TO BE W 201A UNLESS OTHERWISE NOTED

LOAD  
 F FEET + 750  
 FLAT + 750



NOTE:  
 Grating omitted for clarity - to be cut for S.T.C. (S.T. 5. 2x2)

PLAN - SECTION B-B

HANGER NO FPH-DG-442-10, SHOWN ON SPH-DG-442 (SHT 2)

REF: ~~XXXXXXXXXX~~  
 FP-34  
 FS-14H ; MSK-11504  
 SPH-DG-442-SUBSET 2; CALC # 1064  
 COMPUTER CALC # 60

WAS  
 MSK-1144A-2

TITLE VERT & LAT CONSTRAINT  
 2' - DG - 442 - 152 - 03  
 REACTOR CONTAINMENT

POWER INDUSTRY GROUP	
CHECKED	WAS
CORRECT	WAS
APPROVED	WAS
REVISIONS	WAS

SCALE: NONE  
 DATE: 11 MAR 77  
 SKETCH NUMBER: 18050  
 ZFSK-DG-442-103

WAS  
 MSK-1144A-2



Document Type	Calc.	Engineering Work Sheet		POW 14
Project	NAPS Unit 2	Doc No.	Rev No.	Sheet No.
		—	—	1 of 1
Subject	Piping Flexibility check	Prepared By	Date	
		DPM	4-15-97	
System	DG	Checked By	Date	
		JB	4-16-97	

2"-DG-435-153A-Q2

2"  $\phi$  Pipe, sch. 40  $\rightarrow$   $S = 0.56 \text{ in}^3$   
 $I = 0.666 \text{ in}^4$

$$\Delta = \frac{Pl^3}{3EI} = \frac{Ml^2}{3EI}$$

$$M = \frac{3EI\Delta}{l^2} = \frac{3(29 \times 10^6)(0.666)\Delta}{52^2} = 21428 \Delta$$

Assume  $\Delta = 0.05''$

$$M = 1071 \text{ in-lbs}$$

$$F = \frac{M}{S} = \frac{1071}{0.56} = 1913 \text{ psi}$$



VIRGINIA POWER

Memorandum

To D. M. Bucheit/ D. B. Roth

Innsbrook Technical Center

From S. E. Zinkham/ T. W. Hsu

April 17, 1995

**NORTH ANNA UNIT 1 & 2  
RESOLUTION OF MISCELLANEOUS IPEEE ISSUES  
SEISMIC INDUCED FLOODING**

On March 21, 1995 a meeting was held to discuss the impact of the potential effects of seismic induced flooding issues based upon the findings of the IPEEE miscellaneous walkdown performed by Engineering Mechanics and Dr. R. P. Kennedy of Structural Mechanics, Inc. on December 8, 1994 and was addressed in a December 28, 1994 report provided for your review. The intent of this walkdown was to determine if any potential seismic induced flooding sources would impact any of the IPEEE safe shutdown required equipment and therefore effect safe shutdown functions. The walkdown involved all areas of the plant which represented potential flooding sources and could possibly have an impact on safe shutdown equipment and/or electrical wiring (i. e. Cable in Trays & Conduit) leading to this equipment. The report was broken down into specific buildings and plant locations and our discussions addressed these locations individually. The seismically induced flooding issues were reviewed, based upon potential effects to safe shutdown components and the consequences of flood mitigation addressed in the North Anna IPE Final Report, Appendix E, IPE Internal Flooding Analysis. The results of our discussions and the subsequent follow-up issues are addressed below according to building location. It should be noted that not all buildings are included because the December 28, 1994 IPEEE miscellaneous seismic walkdown report screens out several of these buildings as a result of the walkdown. Additionally, a large number of components have been screened out as a result of the walkdown ( i. e. pumps, piping, and valves ) and only the non-screened out items are discussed below.

**Turbine Building:**

The primary sources of flooding identified in the report involved, the Circulation Water Expansion Joints, Large Tanks, and Large Heat Exchangers located on the mezzanine and basement levels of the Turbine Building.

The Circulation Water Expansion Joints are located in the large water boxes. Based upon the IPE Final Report Appendix E, the screening out of Turbine Building Flooding relies heavily on the capability of the flood mitigating systems to automatically trip Circulation Water pumps and valves and warn Operators of the potential flooding problems. The UFSAR page 10.4-6 discusses the flood mitigation control systems. Additionally, there are no safe shutdown components located in the Turbine building at elevation 254' that could be affected.

The tanks that were identified were generally not well supported and their excessive movements could lead to tank rupture at the junction of the connecting piping. The heat exchangers were supported on raised braced frames which may be subject to large lateral motions. The potential for these tanks and heat exchangers to become a flooding source and for affecting safe shutdown equipment, cable trays and conduits was evaluated. The IPE Final Report Appendix E, screened out the majority of tanks and heat exchangers based upon either their location and/or their quantity of fluids that could be released. Additionally there are no safe shutdown components in the vicinity

of the tanks and heat exchangers. The Feedwater Heaters 1(2)-FW-E-1A,1B,2A,2B,3A,3B,4A,4B will require a follow-up review of the support structure by Engineering Mechanics to determine if pipe rupture represents potential flooding.

Additionally, flood propagation pathways to other buildings including the Emergency Switchgear Room, Auxiliary Building Tunnel and Chiller Rooms containing safe shutdown components are contained by 3 foot high dikes which prevent water from entering these areas.

The above follow-up issue will be addressed to determine its impact to Safe Shutdown equipment.

#### **Service Building:**

There were no sources of potential flooding identified by the December 28, 1994 report in this building. The building is protected by 3' high dikes as indicated previously to prevent outside sources from entering, specifically from the Turbine Building basement. The IPE Internal Flood Analysis did not mention any flooding concerns internal to the Service Building, however it did mention the fact that the flood propagation pathways from the Turbine Building were protected by 3' high dikes to the Auxiliary Building Tunnel, Emergency Switchgear Room, and the Chiller and Air Conditioning rooms. There is no flooding sources which could impact Safe Shutdown equipment in the Service Building.

#### **Auxiliary Building:**

The two sources of potential flooding effects were the Service Water Expansion Joints associated with the CCW heat exchangers and the CCW heat exchangers themselves. These items can be screened out by the fact that the surrounding piping leading to the CCW heat exchanger and the CCW heat exchanger are seismically qualified and well supported. Since this item is screened out, there is no impact on surrounding Safe Shutdown equipment. The walkdown report screened out all major Auxiliary Building piping and valves including fire protection piping and valves, since these piping systems were either seismically supported and/or well supported based upon the walkdown of this area.

#### **Quench Spray Pump House:**

The Service Water Expansion Joints in the QSPH basement represented the only potential flooding concern. These Expansion Joints will be reviewed by Engineering Mechanics for the relative movements in relation to the piping. The connecting piping is seismically qualified. Only after review of these Expansion Joints can the impact on Safe Shutdown equipment be assessed.

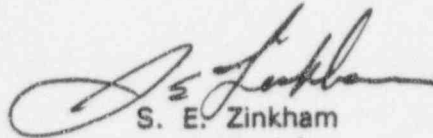
#### **Auxiliary Feedwater Pumphouse:**

An anchorage review on the Casing Cooling tank located next to the AFWPH will be performed by Engineering Mechanics. This item was felt to not have a significant flooding impact on the AFWPH components because there is no direct flow path into the Pumphouse. The results of this review will be used to determine any impact on Safe Shutdown equipment.


#### **Yard:**

The Condensate Storage Tanks 1(2)-CN-TK-2 located in the Yard next to the Turbine Building do not have a significant flooding effect on the Turbine Building. This conclusion is based on the fact that the ground adjacent to the tanks slopes away from the Turbine Building. Additionally, if water entered the Turbine Building, there is adequate sump pump capacity to remove the water before Safe Shutdown equipment becomes vulnerable. In conclusion, there is no impact on Safe Shutdown equipment from these Yard flooding sources. It should be noted that all other yard flooding sources were screened out in the walkdown report.

Based upon the above resolutions to these areas and the subsequent follow-up action required please review and concur if in agreement with these determinations. If you have any questions , please contact me at extension 3450.



S. E. Zinkham



T. W. Hsu

Concurrence: D. M. Bucheit  
D. M. Bucheit

Concurrence: D. B. Roth  
D. B. Roth

CC:

Mr. C. E. Sorrell - IN1NW  
Mr. T. W. Hsu - IN1NW  
Mr. D. Bhargava - IN1NW  
Mr. C. G. Ranganath - IN1NW  
Mr. D. P. Madden - IN1NW  
Mr. K. N. Mehrotra - IN1NW  
Mr. S. E. Zinkham - IN1NW  
IPEEE Miscellaneous file - IN1NW



VIRGINIA POWER

Memorandum

To L. T. Warnick

Innsbrook Technical Center

From S. E. Zinkham/ T. W. Hsu

April 13, 1995

**NORTH ANNA UNIT 1 & 2  
RESOLUTION OF MISCELLANEOUS IPEEE ISSUES  
SEISMIC INDUCED FIRE**

On March 20, 1995 a meeting was held to discuss the impact of the the potential effects of seismic induced fires issues based upon the findings of the IPEEE miscellaneous walkdown. The walkdown was performed by Engineering Mechanics and Dr. R. P. Kennedy of Structural Mechanics, Inc. on December 8, 1994 and was addressed in a December 28, 1994 report provided for your review. The intent of this walkdown was to determine if any potential seismic induced fire sources would impact any of the IPEEE safe shutdown required equipment and therefore affect safe shutdown functions. The walkdown team utilized the North Anna IPEEE Fire Analysis Report section on flammable liquid/gas vessels or piping in Safety Related areas provided by you in a June 3, 1993. The memorandum was addressed to T. W. Hsu and is included as part of the December 28, 1994 walkdown report. The walkdown involved all areas of the plant which represented potential fire sources and could possibly have an impact on safe shutdown equipment and/or electrical equipment (i. e. Cable trays & Conduit) leading to this equipment. The December 28, 1994 report was broken down into specific buildings and plant locations and our discussions addressed these locations individually. The results of our discussions and the subsequent follow-up issues are addressed below based upon building location. It should be noted that not all buildings are included because the December 28, 1994 report screens several of these buildings out based upon the walkdown.

**Turbine Building:**

The primary sources of flammable liquid/gas piping were: the Lube Oil Storage tanks, 1-LO-TK-2,3; Chemical Morpholine Tanks, 1(2)-WT-TK-4; Lube Oil Heat Exchangers, 1(2)-LO-E-1A; Hydrogen Piping associated with the Generator, Turbine Lube Oil, and Seal Oil systems. Additionally, several unsupported 40+ gallon chemical drums near the Chemistry sampling area were found.

The Lube Oil Storage tanks, 1-LO-TK-2,3, were contained within a room with fire retardant material covering the exposed beam ceiling. The room was surrounded by concrete walls approximately 8' high and above this elevation, a block wall spanned to the ceiling. The fire concern was that the tanks could slide rupturing the connected piping and present a fire hazard. Another concern was if the block walls collapsed, then the fire could spread to adjacent areas of the Turbine building. A separate block wall walkdown and evaluation on this wall was performed by EQE in October, 1994 and the results indicate sufficient margin to accomodate the seismic event, therefore no collapse and fire exposure to the Turbine building components. This issue is therefore resolved.

The concern with the Chemical Morpholine tanks is if they contain glass level tube indicators, a brittle fracture could happen, slowly draining the tanks and representing a fire source. Engineering Mechanics will check to determine if the level site tubes are glass or plastic. If they are glass, they will probably be replaced with plastic.



EM A check on the Lube Oil Heat Exchanger anchorage will be performed by Engineering Mechanics (EM) to determine if the exchangers could slide and cause the connecting pipe to rupture.

There are several Hydrogen lines connected between the turbine pedestal and the Turbine building which are independently supported structures. A check on the relative seismic movements will be performed by EM to determine if this piping will remain intact.

EM The unsupported Chemical drum contents will be investigated by EM and the content findings will be provided for your review.

FIRE The Unit 1 & 2 400 cubic foot hydrogen cylinders could not be located as stated on the list provided to us in your June 3, 1993 memorandum. Per our discussions it is our understanding that you will provide us further information on these locations soon.

#### Auxiliary Building:

EM Several Hydrogen bottles that were loosely supported near the chemical sampling area and the roll up doors on elevation 274' will require better restraints per our discussions. EM will provide suggested fixes to these bottles so they will be properly restrained.

EM Per our discussions on Hydrogen Tank, 1-BR-TK-6, which could not be located during our December walkdown is shown on drawing 11715-FAR-205 Sh 3. EM will walk this tank down based upon this location drawing.

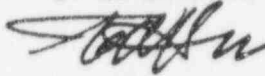
FIRE An unanchored Paint & Flammables cabinet was located on elevation 274' next to the Liquid Waste Tank area. Per our discussions you will provide us an evaluation as to its potential as a fire source.

#### Fuel Oil Pumphouse & Yard:

FIRE An unanchored 5000 BBL above ground Fuel Oil storage tank was located in the Yard next to the Fuel Oil Pumphouse. The tank is surrounded by an approximately 8' high retaining wall. In our discussions, it was your opinion that if the tank/piping ruptured and presented a significant fire source, that with its location and retaining wall and the fact that the Pumphouse is constructed of concrete it should not affect any internal Pumphouse components. However there was a concern that fire could penetrate the Pumphouse possibly entering through the doors and/or ventilation openings. It is our understanding that you will investigate this possibility and provide us with a follow-up answer to this concern.

Based upon the above resolutions to these areas and the subsequent follow-up action required please review and concur if in agreement with these determinations. If you have any questions, please contact S. E. Zinkham at extension 3450 or T. W. Hsu at ext. 3095.

  
S. E. Zinkham

  
T. W. Hsu

Concurrence: \_\_\_\_\_

  
L. T. Warnick

CC:

Mr. C. E. Sorrell - IN1NW  
Mr. T. W. Hsu - IN1NW  
Mr. D. Bhargava - IN1NW  
Mr. C. G. Ranganath - IN1NW  
Mr. D. P. Madden - IN1NW  
Mr. K. N. Mehrotra - IN1NW  
Mr. S. E. Zinkham - IN1NW  
IPEEE Miscellaneous file - IN1NW

List of Open Action Items for Resolution of  
Miscellaneous IPEEE Issues on Seismic Induced Flood & Fire at NAPS

5/30/95

Outstanding Open Action Items for EM:

Seismic Induced Flood:

**Turbine Building**

1. Feed Water Heaters 1/2-FW-E-1A/1B/2A/2B/3A/3B/4A/4B - Review heater support structure to determine if heater tank/piping rupture due to anchorage failure that could represent potential flooding. 4 manhours are required.

**Quench Spray Pump House**

2. Service Water Expansion Joints in the basement - Review for potential rupture of expansion joints due to their relative motions with respect to piping. 4 manhours.

**Auxiliary Feedwater Pumphouse**

3. Casing Cooling tank next to AFWPH - Review tank anchorage to prevent flooding to AFWPH. 4 manhours are required.

Seismic Induced Fire:

**Turbine Building:**

1. Chemical Morpholine tank level site tube - Determine if it is made of glass or plastic. The glass site will probably be replaced with plastic. 4 - 24 manhours.
2. Lube Oil Heat Exchanger - Evaluate its anchorage to ensure the displacement/slide of heat exchanger will not cause rupture at juncture of connecting pipe. 8 manhours.
3. Several Hydrogen lines connecting Turbine pedestal and Turbine Building that has independent foundation - Evaluate the relative seismic movements between the pedestal and the building to ensure the lines will remain intact. 4 manhours.
4. Unsupported Chemical Drums - Find out the drum contents for any hazardous material and consult with expert as required. 4 manhours.

(Continue)

**Auxiliary Building**

5. Several Hydrogen bottles near the chemical sampling area and the rolled up doors at elevation 274' are loosely supported - Design proper restraints for those bottles. 40 manhours.
6. Hydrogen tank 1-BR-TK-6 could not located for walkdown in December 1994 - Perform the walkdown since we found the DWG 11715-FAR 205, Sh.3. 4 manhours.

**A total manhour requirement for EM is 96 manhours.**

**Outstanding Open Action Items for Fire Protection Group (FPG)****Turbine Building**

1. 400 cubic feet Hydrogen tanks for Units 1&2 indicated in seismic/fire interaction walkdown list but could not find - FPG to locate the tanks.4 manhours.

**Auxiliary Building**

2. Cabinets for Paint & Flammable at elevation 274' next to the Liquid Waste Tank area - FPG is to evaluate their potential hazard. 4 manhours.

**Fuel Oil Pumphouse & Yard**

3. 5000 BBL Fuel Oil storage tank in the yard , next to the Fuel Oil Pumphouse, and surrounded by 8' high concrete retaining - FPG is to investigate the possible hazard if tank rupture at piping juncture and the fire penetrate the pumphouse door and/or ventilation opening. 4 manhours.

**A Total manhour requirement for FPG is 12 manhours.**

By T. W. Hsu 5/30/95

## APPENDIX B

### **Miscellaneous Walkdown Reports**

This Appendix provides the reports prepared for plant area walkdowns (excluding detailed component walkdowns) for miscellaneous IPEEE-seismic issues, such as seismic induced fire and flood, piping issues and other issues.

## APPENDIX C

### **Peer Review Report**

The Peer review report, conducted by Dr. R. P. Kennedy of Structural Mechanics Consulting, Inc. is included in this Appendix.

## APPENDIX C

### **Peer Review Report**

The Peer review report, conducted by Dr. R. P. Kennedy of Structural Mechanics Consulting, Inc. is included in this Appendix.

NORTH ANNA POWER STATION UNITS 1 AND 2

USI A-46 AND IPEEE(SEISMIC) PROGRAMS

SUMMARY OF WALKDOWNS, REVIEW OF SEWS AND  
OBSERVATIONS NOTED DURING PEER REVIEW

by

**Robert P. Kennedy**  
**March 1996**

Introduction

I conducted a Peer Review walkdown of Virginia Power's implementation of USI A-46 Program - Generic Letter 87-02, and IPEEE (Seismic) Program - Generic Letter 88-20, Supplements 4 and 5 on February 19, 20 and 21, 1996 at North Anna Power Station. During my peer review walkdown, I was accompanied by Mr. C.E. Sorrell (Part-time), Mr. D.P. Madden and Mr. D. Bhargava of Virginia Power. I wish to thank each of these individuals for their assistance during my peer review.

About 20% of the items from the Unit 1 and Unit 2 USI A-46/IPEEE SSELs representing all classes of equipment were pre-selected by myself, with assistance from Virginia Power Engineers. During the walkdown, minor changes to the list were made based on observations at the site, as appropriate. For the components which were walked down, most of the SEWS sheets and a few of the anchorage calculations were also reviewed.

My walkdown concentrated on Unit 1 because this unit was in a planned outage at the time of my walkdown. However, I also reviewed sufficient components in Unit 2 to confirm the similarity between Unit 2 and Unit 1 components. A list of components that were walked down and the corresponding peer review comments are provided in the attached summary lists for North Anna Units 1 and 2. Review Comments are made on 110 components in Unit 1, and 38 components in Unit 2. In addition to the components in the attached lists, several wall mounted ASCO solenoid operated valves in the Unit 2 QSPH building were walked down and determined to be adequate. Also, in the Unit 2 QSPH, instrument racks 2-EI-CB-113 and 114 were walked down and appeared rigid and adequate. Several other transmitters, temperature elements, valves and other components were walked down in several areas of the plant and no concern were noted during the review.



During my walkdown, Mr. D. Bhargava took extensive notes of my walkdown comments. He prepared draft summary lists for my review. The attached summary lists are based primarily on his excellent notes as supplemented by my own notes. These summary lists accurately reflect my summary comments on each reviewed component.

#### Overall Peer Review Conclusions

Based upon my review, I have concluded that the Seismic Review Teams (SRT) that conducted these walkdowns conducted their work in a highly competent, very conscientious, and thorough manner. With only a few minor exceptions as discussed in the following sections, I found no shortcomings in their review and took no exceptions with their findings and conclusions. All of the SRTs involved should be commended for doing an excellent seismic walkdown review of North Anna Power Station.

#### Potential Problems With Equipment Caveats

Even though these walkdown teams were very conscientious and competent, it appears that they had some difficulty in fully understanding some of the caveats on switchgear and large transformers as well as fully understanding what they had to do to resolve these caveats. I question whether these caveats have been adequately covered in the SQUG training course and I believe that the following discussed issues may represent a generic deficiency in this training course.

Low Voltage Switchgear- One of the caveats on low voltage switchgear requires that the SRT confirm that potential relative side-to-side motion between the draw-out type circuit breaker and the cabinet is limited such that the secondary contacts are not disconnected. It is not clear to me that the SRT carefully checked this caveat since the SRT noted this issue as acceptable without any indication of their basis on the SEWS for the Westinghouse DB-50 Reactor Trip Breakers which were the specific breakers for which this issue was a concern.

With the exception of the Reactor Trip Breakers, I was able to confirm that the breakers in all other low voltage switchgear were adequately restrained laterally by a subsequent careful review of identical breakers at the Surry Training Center. Furthermore, it is my understanding that as a follow-up after my Peer review, Virginia Power engineers reviewed the UFSAR and Westinghouse's seismic test report of the Reactor Trip Breakers. Westinghouse performed sine beat tests which envelope North Anna's seismic levels. These tests conclude that

although there was some distortion of the secondary contact fingers, no operational malfunction was noted. The replacement shunt trip attachments and associated components were also tested per IEEE STD. 344-1975. Therefore, I now consider this issue to be appropriately closed.

Medium Voltage Switchgear - One of the caveats on medium voltage switchgear requires that the SRT confirm that the potential transformers and/or control power transformers not be trunnion-mounted, or if trunnion-mounted that they be restrained so as to have limited vertical displacement. I was unable to confirm that the SRT had inspected these transformers, and I was not permitted to do so at North Anna. However, subsequently I inspected these transformers on identical medium voltage switchgear at Surry and found them to be rigidly mounted in the rear of the cabinet. Therefore, I now consider this issue to be appropriately closed.

Large Transformers - The SRTs seemed to be uncertain and had differing opinions on whether the heavy coils in the large transformers were laterally braced at their top. The heavy coils in these large transformers are not laterally braced at their top. Therefore, an evaluation of the capacity of the base support to withstand the overturning moment applied by the lateral inertial load from these coils is required. Application of such a load can result in torsional twisting of the base channel.

Also, nuts on some of the bolts connecting the heavy coils to the base channel were loose by up to about 1/4-inch. Although, I don't expect that any serious negative consequences would result from these loose bolts, loose bolts will result in the effective lateral natural frequency of the coils being less than 8 Hz. I recommend that these nuts be tightened the next time that these transformers are de-energized for servicing.

#### Issues Left Unresolved or Uncertain

In completing the SEWS, the SRT left many issues unresolved or uncertain. It should be noted that Virginia Power's current schedule for the completion of IPEEE-Seismic and USI A-46 projects is 2/97 and 5/97 respectively, however, both Virginia Power and I concurred that I should conduct my peer review walkdown before all work was completed so that:

1. any deficiencies that I might find could be corrected before the SRTs had completed their work, and
2. to enable me to conduct my review during the Unit 1 planned outage.

Therefore, it is reasonable to expect that some issues were left unresolved or still open at the time of my review. However, I found more open issues than I expected.

Very few anchorage calculations were attached or referenced on the SEWS. Therefore, the SEWS correctly defined anchorage as uncertain or open. However, as a result, I was unable to review more than a few anchorage assessments. In most cases during my walkdown, I found components to be adequately anchored and I found that the SEWS properly identified anchorage. The few exceptions that I found are noted in the attached summary list.

Two minor generic issues (covers on fluorescent lights and hooks for hanging fire extinguishers) were left open and unresolved. The responsible SRTs should determine whether covers on fluorescent lights are needed and should reflect any proposed solution, if needed, in the SEWS/OSVS forms accordingly. In my opinion, it is sufficient to determine that the light fixture won't fall (done at North Anna), and it is unnecessary to have covers under individual light tubes. I don't believe that individual light tubes are heavy enough so that random dropping of a couple of tubes from light fixtures constitutes a significant hazard to adjacent SSEL components.

In addition, the responsible SRTs should determine whether hooks for attaching fire extinguishers in the vicinity of SSEL components need to be modified. The SEWS were unclear and the resolution method, if any, should be reflected on the OSVS sheet. Shaking tests conducted by me on a sample of these fire extinguishers during the peer review indicated to me that it was not credible that they would become unattached during an earthquake.

The SEWS identify a number of cabinets that are sufficiently close to adjacent cabinets that impact between these cabinets which are not tied together might occur. During my peer review walkdown, I noted that most of these potential cabinet interaction issues have been corrected by tying adjacent cabinets together. These modifications were made subsequent to the SRT walkdown and prior to my peer review. However, a few situations exist where these cabinet interaction issues identified on the SEWS have not been corrected. Since OSVS sheets have not been completed on these cabinets and there is no indication on the SEWS that the potential interaction has been resolved, it is not clear to me whether the SRT has subsequently resolved that no modification is necessary, or whether a modification is still needed. I did not find any cabinet interaction issues not previously identified by the SRTs. Therefore my concern is only with the disposition of these interaction issues.

On some of the batteries, no spacers between cells exist at locations where two rods go through to tie the front and rear longitudinal battens together. This issue has been identified on the SEWS, but no resolution method has been defined on an OSVS. It is my understanding from test reports for another plant that the battery manufacturer has seismically qualified their batteries without spacers being needed at locations where these two rods pass through. Therefore, either spacers can be placed at these locations, or the necessary qualification test information can be obtained to document that no spacers are needed. Whichever method of resolution is selected, it should be defined on an OSVS.

Some other issues which have been left unresolved are described in the peer review comments on the attached summary lists.

### Control Room Issues

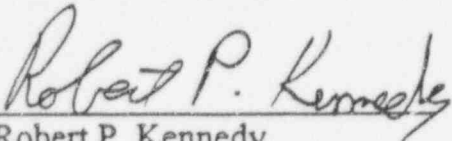
For the control room ceiling, the T-bars are connected and adequately supported, however, diffuser panels need to be tied to the T-bars, since they may come out during an earthquake and injure operators. I understand that Virginia Power has a plan to address this issue in 1996. I strongly recommend that an OSVS be filled out requiring a modification to correct this issue.

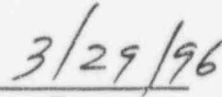
Secondly, it was not clear whether the indicator lights on the vertical control boards are being relied upon after an earthquake by the operators. If so, the operators should be made aware that a small fraction of them are likely to burn out and thus not function as a result of strong seismic shaking.

Very little seismic interaction from unanchored cabinets exist in the control room. However, I noted:

- 1) an unanchored rack for hard hats is located in the control room, next to cabinet 1-EI-CB-97, and
- 2) unanchored tables are near Panels V and Q in the control room.

I understand that neither cabinet 1-EI-CB-97 nor Panels V and Q are on the SSEL so that these interactions are not likely to be an issue.

  
Robert P. Kennedy

  
Date

USI A-46 AND IPEEE (SEISMIC) - NORTH ANNA UNIT 1  
 PEER REVIEW COMPONENTS - FEBRUARY 19, 1996 THROUGH FEBRUARY 21, 1996

LIST SORTED BY CLASS, BUILDING, MARK NO.

#	Class Mark No.	Description	Bldng	Elev.	Peer Review Comments	
1	0	1-HV-S-1A	HV/SELF CLEANING STRAINER	SB	254'	No concern. It was noted that the Gas bottles in the room are well supported.
2	0	1-HV-S-1B	HV/SELF CLEANING STRAINER	SB	254'	No concern. It was noted that the Gas bottles in the room are well supported.
3	01	1-EP-MC-19	EP/EMERGENCY MCC 1H1-2N	AUX	260'	No concern. SEWS OK (#Hz. caveat not applicable)
4	01	1-EP-MC-21	EP/EMERGENCY MCC 1J1-2N	AUX	260'	No concern. SEWS OK
5	01	1-EP-MC-22	EP/EMERGENCY MCC 1J1-2S	AUX	260'	No concern. SEWS OK
6	01	1-EP-MC-12	EP/EMERGENCY MCC 1H1-1A	EDG	--	Opened and saw 1 bolt in front and 1 in rear. No concern. SEWS reviewed. Anch. sketch in SEWS is OK. No anch. calc in SEWS package.
7	01	1-EP-MC-10	EP/EMERGENCY MCC 1H1-1	SB	254'	No concern. SEWS OK. Gap in channel >1/4" for anch. bolts can be evaluated per SQUG guidelines and does not need to be classified as an outlier.
8	01	1-EP-MC-41	EP/EMERGENCY MCC 1H1-4	SB	254'	No concern. Top/bottom bolted to adjacent cabinets as noted on SEWS. Anchorage same as noted on SEWS. Gap in channel >1/4" for anch. bolts can be evaluated per SQUG guidelines and need not be classified as an outlier.

USI A-46 AND IPEEE (SEISMIC) - NORTH ANNA UNIT 1  
PEER REVIEW COMPONENTS - FEBRUARY 19, 1996 THROUGH FEBRUARY 21, 1996

LIST SORTED BY CLASS, BUILDING, MARK NO.

#	Class	Mark No.	Description	Blng	Elev.	Peer Review Comments
9	02	1-EE-BKR-BYA	CR*/REACTOR TRIP BREAKER BYPASS A	AUX	280'	Saw 3/8" bolts in front. (2 in each panel) . Did not open the back. SEWS OK. Anchorage calc reviewed and determined OK. Side-to-side restraint of the breakers should be further evaluated.
10	02	1-EE-BKR-BYB	CR*/REACTOR TRIP BREAKER BYPASS B	AUX	280'	Saw 3/8" bolts in front. (2 in each panel) . Did not open the back. SEWS OK. Anchorage calc reviewed and determined OK. Side-to-side restraint of the breakers should be further evaluated.
11	02	1-EE-BKR-RTA	CR*/REACTOR TRIP BREAKER A	AUX	280'	Saw 3/8" bolts in front. (2 in each panel) . Did not open the back. SEWS OK. Anchorage calc reviewed and determined OK. Side-to-side restraint of the breakers should be further evaluated.
12	02	1-EE-BKR-RTB	CR*/REACTOR TRIP BREAKER B	AUX	280'	Saw 3/8" bolts in front. (2 in each panel) . Did not open the back. SEWS OK. Anchorage calc reviewed and determined OK. Side-to-side restraint of the breakers should be further evaluated.
13	02	1-EE-SS-03	EE/480V EMERGENCY BUS 1H1	AUX	274'	No concern. J-Box on top is 40"x36"x27" and calculated to be about 106 lbs. Judged to be within the caveat. SEWS noted all issues. EPRI frequency guidelines for switchgears can be used to show $f_n > 8$ Hz. since in-structure spectra is $>$ ref. spectra.
14	02	1-EE-SS-04	EE/480V EMERGENCY BUS 1J1	AUX	274'	No concern. SEWS noted all issues. EPRI frequency guidelines for switchgears can be used to show $f_n > 8$ Hz. since in-structure spectra is $>$ ref. spectra.
15	02	1-EE-SS-01	EE/480V EMERGENCY BUS 1H	SB	252'	Saw anchorage in front and back of one cabinet. No concern. Tug test showed no lateral motion of secondary contacts in breakers. SEWS OK, but should note this.
16	02	1-EE-SS-02	EE/480V EMERGENCY BUS 1J	SB	252'	No concern. SEWS OK.

USI A-46 AND IPEEE (SMIC) - NORTH ANNA UNIT 1  
 PEER REVIEW COMPONENTS - FEBRUARY 19, 1996 THROUGH FEBRUARY 21, 1996

LIST SORTED BY CLASS, BUILDING, MARK NO.

#	Class Mark No.	Description	Bldng	Relv.	Peer Review Comments
17	02 1-EP-CB-12D	EP/125V VITAL DC BUS (1-IV)	SB	252'	4 bolts, shim plates below bolt. This was also noted in the SEWS. Analysis not reviewed. Load path judged OK. SEWS says 'U' for load path, however, no description of load path concern and how this issue will be resolved was stated.
18	03 1-EE-SW-01	EE/4KV EMERGENCY BUS 1H (ORANGE)	SB	252'	Panels are bolted together side to side at three places. SEWS reviewed and OK.
19	04 1-EE-ST-1H1	EE/4160/480 SERVICE TRANSFORMER 1H1	AUX	274'	Coils not top braced, SEWS OK but OSVS should be written. SCE to reevaluate load path because of friction clips. Friction not to be used for long. shear. Nuts with lock-washer on bolts connecting channel were OK. Use flexibility of base anchorage and base channel to determine whether coil natural frequency exceeds 8 hz.
20	04 1-EE-ST-1J1	EE/4160/480 SERVICE TRANSFORMER 1J1	AUX	274'	Viewed from outside. Coils not top braced. SEWS OK but OSVS should be written. SCE to reevaluate load path because of friction clips. Friction not to be used for long. shear. Tighten nuts with lock-washer on bolts connecting channel if needed. Use flexibility of base anchorage and base channel to determine whether coil fn > 8 hz.
21	04 1-EE-ST-1H	EE/4160/480 SERVICE TRANSFORMER 1H	SB	252'	Coils not top braced. SEWS OK but OSVS should be written. SCE to reevaluate load path because of friction clips. Friction should not be used for long. shear. Nuts with lock-washer on bolts connecting channel were about 1/4" loose and were tightened.
22	04 1-EE-ST-1J	EE/4160/480 SERVICE TRANSFORMER 1J	SB	252'	Viewed from outside. Coils not top braced. SEWS OK but OSVS should be written. SCE to reevaluate load path because of friction clips. Friction should not be used for long. shear. Tighten nuts with lock-washer on bolts connecting channel if needed.
23	04 1-EP-TRAN-79A	EP/480/120 VOLT. REG. TRANSFORMER (79A)	SB	252'	GE X-former. Opened and saw coils are well attached with 2 bolts on each side.
24	05 1-FW-P-2	FW/TURBINE-DRIV APPL EN AUXILIARY FEEDWATER PUMP (TDAFWP)	--	--	No concern

USI A-46 AND IPEEE (SEISMIC) - NORTH ANNA UNIT 1  
 PEER REVIEW COMPONENTS - FEBRUARY 19, 1996 THROUGH FEBRUARY 21, 1996

LIST SORTED BY CLASS, BUILDING, MARK NO.

#	Class Mark No.	Description	Bldng	Elev.	Peer Review Comments
25	05 1-FW-P-3A	FW/MOTOR-DRIVEN AFPH AUXILIARY FEEDWATER PUMP (MDAFWP)	--	--	No concern
26	05 1-FW-P-3B	FW/MOTOR-DRIVEN AFPH AUXILIARY FEEDWATER PUMP (MDAFWP)	--	--	No concern
27	05 1-CH-P-1A	CH/CENTRIFUGAL CHARGING PUMP A; (CCP A)	AUX	245'	No concern
28	05 1-SW-P-9A	SW/RADIATION MONITORING PUMP	AUX	263'	No concern
29	05 1-SW-P-9B	SW/RADIATION MONITORING PUMP	AUX	263'	No concern
30	06 1-HV-P-20A	HV/CHILLED WATER PUMP	SB	254'	No concern noted.
31	06 1-RS-P-2A	RS/OUTSIDE RECIRC SPRAY PUMP A	SFGD	267'	SEWS reviewed. Anchorage calc. has been done. Casing/shaft was noted by SCEs to be >20'. Disposition of this issue was not included in SEWS package.
32	06 1-RS-P-2B	RS/OUTSIDE RECIRC SPRAY PUMP B	SFGD	267'	SEWS reviewed. Anchorage calc. has been done. Casing/shaft was noted by SCRs to be >20'. Disposition of this issue was not included in SEWS package.



USI A-46 AND IPEKE (SEWAGE) - NORTH ANNA UNIT 1  
 PEER REVIEW COMPONENTS - FEBRUARY 19, 1996 THROUGH FEBRUARY 21, 1996

LIST SORTED BY CLASS, BUILDING, MARK NO.

#	Class Mark No.	Description	Bldng	Elev.	Peer Review Comments
33	06 1-SI-P-1A	SI/LHSI PUMP A	SFGD	255'	No concern. SEWS reviewed, open issues are well described.
34	06 1-SW-P-1A	SW/SERVICE WATER PUMP A	SWPH	328'	No concern. SEWS reviewed and found to be properly completed and dispositioned.
35	06 1-SW-P-1B	SW/SERVICE WATER PUMP B	SWPH	328'	No concern. SEWS reviewed and found to be properly completed and dispositioned.
36	07 1-FW-HCV-100A	FW/AFWP HEADER TO SG A	AFPH	275'	No concern
37	07 1-FW-HCV-100C	FW/AFWP HEADER TO SG C	AFPH	275'	No concern
38	07 1-MS-PCV-101A	MS/SG A ATMOSPHERIC STEAM DUMP VALVE	MSVH	306'	No concern
39	07 1-MS-PCV-101B	MS/SG B ATMOSPHERIC STEAM DUMP VALVE	MSVH	306'	No concern
40	07 1-MS-PCV-101C	MS/SG C ATMOSPHERIC STEAM DUMP VALVE	MSVH	308'	No concern

USI A-46 AND IPEEE (SEISMIC) - NORTH ANNA UNIT 1  
 PEER REVIEW COMPONENTS - FEBRUARY 19, 1996 THROUGH FEBRUARY 21, 1996

LIST SORTED BY CLASS, BUILDING, MARK NO.

#	Class Mark No.	Description	Bldng	Elev.	Peer Review Comments
41	07 1-MS-TV-101C	MS/SG C MSIV	MSVH	285'	Air supply line interaction with grating was noted. The SEWS also noted this concern and adequately resolved it by determining that air supply line is not needed and can fail.
42	07 1-MS-TV-109	MS/STEAM DRAIN CONTMT ISOL	MSVH	273'	Interaction of a conduit with the diaphragm. SCEs noted this concern but no OSVS or resolution method stated.
43	07 1-MS-TV-110	MS/SG BLOWDOWN CONTMT ISOL	MSVH	271'	About 3/8" clearance near the diaphragm to an adjacent Unistrut. SCEs have noted this but no OSVS or resolution method stated.
44	07 1-AS-FCV-100A	AS/AIR EJECTOR STM INLET CONTMT ISOL	TB	279'	No concern
45	08A 1-FW-MOV-100B	FW/AFWP HEADER TO SG B	AFPH	278'	No concern
46	08A 1-FW-MOV-100C	FW/AFWP HEADER TO SG C	AFPH	276'	Possible interaction, but judged OK. No concern.
47	08A 1-CH-MOV-1350	CH/EMERGENCY BORATE VALVE	AUX	276'	No concern
48	11 1-HV-E-4A	HV/CHILLER UNIT	SB	254'	Equip. and SEWS OK, however, no anchorage calc in the SEWS package as of 2/19/96.

USI A-46 AND IPEEE (S M I C) - NORTH ANNA UNIT 1  
 PEER REVIEW COMPONENTS - FEBRUARY 9, 1996 THROUGH FEBRUARY 21, 1996

LIST SORTED BY CLASS, BUILDING, MARK NO.

#	Class Mark No.	Description	Bldng	Elev.	Peer Review Comments
49	14	1-EP-CB-41AN EP/HEAT TRACE DISTRIBUTION CABINET	AFPH	271'	No concern. Did not open this cabinet.
50	14	1-EP-CB-41AR EP/HEAT TRACE DISTRIBUTION CABINET	AFPH	271'	No concern. Did not open this cabinet.
51	14	1-EP-CB-41BN EP/HEAT TRACE DISTRIBUTION CABINET	AFPH	271'	No concern. Did not open this cabinet.
52	14	1-EP-CB-41BR EP/HEAT TRACE DISTRIBUTION CABINET	AFPH	271'	No concern. Did not open this cabinet.
53	14	1-BP-SW-3 BP/BY-PASS SWITCH 3 (MANUAL)	SB	277'	Distribution panel. No concern
54	14	1-EP-CB-04C EP/120V VITAL AC 1-III BUS (BLUE & PURPLE)	SB	277'	Distribution panel. No concern
55	14	1-EP-CB-16A EP/120V SEMI-VITAL AC 1A BUS	SB	277'	Distribution panel. No concern
56	15	1-BY-B-02 BY/125V BATTERY 1-II	SB	252'	Racks well supported. No Styrofoam spacers between cells at those locations where two rods go through. This was noted on the SEWS as unknown, but no resolution method was stated.

USI A-46 AND IPEEE (SEISMIC) - NORTH ANNA UNIT 1  
 PEER REVIEW COMPONENTS - FEBRUARY 19, 1996 THROUGH FEBRUARY 21, 1996

LIST SORTED BY CLASS, BUILDING, MARK NO.

#	Class Mark No.	Description	Bldng	Elev.	Peer Review Comments
57	15 1-EG-B-01A	AP/EDG BATTERIES AND RACKS	SB	272'	No concern. SEWS OK. Anchorage should be evaluated by the SCEs.
58	16 1-BY-C-02	BY/BATTERY CHARGER 1-I	SB	254'	No concerns noted
59	16 1-BY-C-03	BY/BATTERY CHARGER 1C-I	SB	254'	No concerns noted. Size of bolts was not sketched by SCEs on SEWS, however, 3/4" size was found in QC document and included in SEWS package.
60	16 1-BY-C-04	BY/BATTERY CHARGER 1-II	SB	254'	No concerns noted.
61	16 1-BY-C-05	BY/BATTERY CHARGER 1-III	SB	254'	No concerns noted.
62	16 1-BY-C-06	BY/BATTERY CHARGER 1C-II	SB	254'	No concerns noted.
63	16 1-BY-C-07	BY/BATTERY CHARGER 1-IV	SB	254'	No concerns noted.
64	16 1-VB-I-02	VB/INVERTER TO VITAL 1-II BUS	SB	252'	Floor mounted with 4 channels, two center channels not anchored to floor. Transformer well mounted to the channel in the center. Load path through the frame to outer channels, judged OK. SEWS reviewed and did not note any concern.

USI A-46 AND IPEEE (MIC) - NORTH ANNA UNIT 1  
 PEER REVIEW COMPONENTS - FEBRUARY 19, 1996 THROUGH FEBRUARY 21, 1996

LIST SORTED BY CLASS, BUILDING, MARK NO.

#	Class Mark No.	Description	Bldng	Elev.	Peer Review Comments
65	16	1-VB-I-04	VB/INVERTER TO SB VITAL 1-IV BUS	252'	4 small bolts, anchorage calc required. SEWS did not have any anch. calc yet.
66	18	1-FW-FT-100B	FW/AFWP TO SG B AFPH FLOW	273'	No concern
67	18	1-FW-FT-100C	FW/AFWP TO SG C AFPH FLOW	273'	No concern
68	18	1-CH-FT-1113	CH/BAST TO VCT AUX FLOW	278'	No concern
69	18	1-CH-LT-1115	CH/VCT LEVEL AUX	280'	No concern
70	18	1-CH-LT-1161	CH/BAST A LEVEL AUX	285'	No concern.
71	18	1-HV-FS-1215	CHV/CND WTR PUMP SB SEAL FLOW SWITCH	256'	Unistrut will hit the equipment - SCEs have noted this on the SEWS
72	19	1-CC-TE-101A	CC/CCW PUMPS AUX SUCTION HEADER TEMP	257'	No concern

USI A-46 AND IPEEE (SEISMIC) - NORTH ANNA UNIT 1  
 PEER REVIEW COMPONENTS - FEBRUARY 19, 1996 THROUGH FEBRUARY 21, 1996

LIST SORTED BY CLASS, BUILDING, MARK NO.

#	Class Mark No.	Description	Bldng	Elev.	Peer Review Comments
73	20 1-EP-CB-41N1	EP/HEAT TRACE CONTROL CABINET	APPH	271'	No concern
74	20 1-EP-CB-13AN	EP/HEAT TRACE DISTRIBUTION CABINET	AUX	274'	No concern.
75	20 1-EB-EG-01C	EG/CRE PANEL 1H SB	SB	272'	4 anchor bolts in front. Back of cabinet not opened. SEWS OK, but did not have sketch of anch. in the back. Calc. reviewed, it used anch. in the back per drawing. Gap of 1/2' with an adjacent MCC considered OK.
76	20 1-EI-CB-03	EI/VERTICAL BOARD 1-1	SB	277'	No concerns noted.
77	20 1-EI-CB-04	EI/VERTICAL BOARD 1-2	SB	277'	No concerns noted.
78	20 1-EI-CB-05	EI/VERTICAL BOARD 1-3	SB	277'	No concerns noted.
79	20 1-EI-CB-06A	EI/AUXILIARY SHUTDOWN PANEL	SB	254'	Opened front of cabinet. 3 anchor bolts in front. Sketch in SEWS OK
80	20 1-EI-CB-06B	EI/AUXILIARY SHUTDOWN PANEL	SB	254'	Opened front of cabinet. 3 anchor bolts in front. Sketch in SEWS OK

USI A-46 AND IPEEE (SEISMIC) - NORTH ANNA UNIT 1  
 PEER REVIEW COMPONENTS - FEBRUARY 19, 1996 THROUGH FEBRUARY 21, 1996

LIST SORTED BY CLASS, BUILDING, MARK NO.

#	Class Mark No.	Description	Bldng	Elev.	Peer Review Comments
81	20 1-EI-CB-08A	EG/EMERG DG CONTROL PANEL (H-TRAIN)	SB	277'	No concern noted.
82	20 1-EI-CB-18A	EI/COMPUTER I/O CABINET 00	SB	277'	It was unclear whether cards in the cabinet are well restrained. SEWS has noted this concern. A tug test by hand should be performed if these cabinets can not be removed from the SSEL.
83	20 1-EI-CB-18B	EI/COMPUTER I/O CABINET 01	SB	277'	It was unclear whether cards in the cabinet are well restrained. SEWS has noted this concern. A tug test by hand should be performed if these cabinets can not be removed from the SSEL.
84	20 1-EI-CB-18C	EI/COMPUTER I/O CABINET 02	SB	277'	It was unclear whether cards in the cabinet are well restrained. SEWS has noted this concern. A tug test by hand should be performed if these cabinets can not be removed from the SSEL.
85	20 1-EI-CB-23A	EI/PROCESS CABINET A	SB	252'	Cabinet similar to others, has been connected at the top to adjacent cabinets.
86	20 1-EI-CB-23B	EI/PROCESS CABINET B	SB	252'	Cabinet similar to others, has been connected at the top to adjacent cabinets.
87	20 1-EI-CB-47D	EI/SOLID STATE PROTECTION LOGIC CABINET (TRAIN B)	SB	252'	Two friction clips in front, two anchor bolts in back. SEWS OK. Prying action was considered in anchorage calc. Initially, Peer reviewer thought that shear (due to torsion) in back bolts may need to be re-evaluated. However, existing calc. was judged OK since A-325 bolts were used in the friction connection.
88	20 1-EI-CB-47F	EI/SOLID STATE PROTECTION OUTPUT CABINET (TRAIN B)	SB	252'	Two friction clips in front, two anchor bolts in back. SEWS OK. Prying action was considered in anchorage calc. Initially, Peer reviewer thought that shear (due to torsion) in back bolts may need to be re-evaluated. However, existing calc. was judged OK since A-325 bolts were used in the friction connection.

USI A-46 AND IPEEE (SEISMIC) - NORTH ANNA UNIT 1  
PEER REVIEW COMPONENTS - FEBRUARY 19, 1996 THROUGH FEBRUARY 21, 1996

LIST SORTED BY CLASS, BUILDING, MARK NO.

#	Class Mark No.	Description	Bldng	Elev.	Peer Review Comments
89	20 1-EI-CB-51	EI/PRIMARY PLANT PROCESS CABINET 1	SB	252'	Cabinet has been connected at the top to adjacent cabinets. Cards inside well restrained. 4 anchor bolts. SEWS reviewed and found OK.
90	20 1-EI-CB-52	EI/PRIMARY PLANT PROCESS CABINET 2	SB	252'	Cabinet similar to others, has been connected at the top to adjacent cabinets.
91	20 1-EI-CB-56	EI/PRIMARY PLANT PROCESS CABINET 6	SB	252'	Cabinet similar to others, has been connected at the top to adjacent cabinets.
92	20 1-EI-CB-64A	EI/SOLID STATE PROT SYS AUX RELAY RACK	SB	252'	Cabinet similar to others, has been connected at the top with tie rods to adjacent cabinets. 4 bolts, one in each corner. SEWS reviewed - OK
93	20 1-EI-CB-64B	EI/SOLID STATE PROT SYS AUX RELAY RACK	SB	252'	Cabinet similar to others, has been connected at the top to adjacent cabinets.
94	20 1-EP-CB-28A	EP/AUXILIARY RELAY RACK A	SB	252'	Cabinet was opened. Three anchor bolts in the front. Relays well attached. SEWS reviewed and found OK. No anchorage calculation in SEWS package.
95	20 1-EP-CB-28H	EP/SW LOGIC CABINET 1A	SB	252'	3 anchors on each side - same were sketched on SEWS. Anchorage not analyzed in SEWS package. Gap noted in the front as 3/8" and back 3/16" with an adjacent side-to-side cabinet. SEWS lists this concern but no resolution method was noted on OSVS.
96	20 1-EI-CB-301C	EI/CONTROL PANEL	SW	252'	All devices properly attached. Gap with adj. cabinet >1/2" and floures. lights look OK, fire extinguisher near cabinet tug tested. SEWS noted these concerns. No OSVS, resolution method or anch. calc in SEWS package. SCEs should resolve these issues.



USI A-46 AND IPEEE (SEISMIC) - NORTH ANNA UNIT 1  
 PEER REVIEW COMPONENTS - FEBRUARY 19, 1996 THROUGH FEBRUARY 21, 1996

LIST SORTED BY CLASS, BUILDING, MARK NO.

#	Class	Mark No.	Description	Bldng	Elev.	Peer Review Comments
97	21	1-CC-E-1A	CC/COMPONENT COOLING WATER HX	AUX	263'	Well supported laterally at top and bottom. Reviewed calculation, demonstrates adequate margin.
98	21	1-CC-E-1B	CC/COMPONENT COOLING WATER HX	AUX	263'	Well supported laterally at top and bottom. Reviewed calculation, demonstrates adequate margin.
99	21	1-CC-TK-1	CC/CC SURGE TANK	AUX	298'	Possible interaction of tank near the top with a handrail. Judged OK, but was not noted on the SEWS. SEWS package was complete and OK.
100	21	1-CH-TK-1A	CH/BORIC ACID STORAGE TANK A (BAST)	AUX	274'	No concern. Analysis should be done for legs and support.
101	21	1-CH-TK-1B	CH/BORIC ACID STORAGE TANK B (BAST)	AUX	274'	No concern. Analysis should be done for legs and support.
102	21	1-SS-E-3A	SS/LOOP 1 SGBD HX	AUX	284'	No concern
103	21	1-SS-E-3B	SS/LOOP 2 SGBD HX	AUX	284'	No concern
104	21	1-SS-E-3C	SS/LOOP 3 SGBD HX	AUX	284'	No concern

USI A-46 AND IPEER (MIC) - NORTH ANNA UNIT 1  
 PEER REVIEW COMPONENTS - FEBRUARY 19, 1996 THROUGH FEBRUARY 21, 1996

LIST SORTED BY CLASS, BUILDING, MARK NO.

#	Class Mark No.	Description	Bldng	Elev.	Peer Review Comments
105	21 1-EG-TK-1H	EG/FUEL OIL DAY TANK	SB	270'	Good saddle support noted.
106	21 1-EG-TK-1HA	EG/AIR COMPRESSOR AIR RECEIVER	SB	270'	Well anchored
107	21 1-EG-TK-1HB	EG/AIR COMPRESSOR AIR RECEIVER	SB	270'	Well anchored
108	21 1-CN-TK-1	CN/CONDENSATE STORAGE TANK	YARD	271'	No concern
109	21 1-QS-TK-1	QS/REFUELING WATER STORAGE TANK (RWST)	YARD	271'	No concerns noted. Calculation was reviewed following the walkdowns.
110	21 1-QS-TK-2	QS/REFUELING WATER CHEM ADD TANK	YARD/TU NL	272'	No concern

USI A-46 AND IPEEE (SIC) - NORTH ANNA UNIT 2  
 PEER REVIEW COMPONENTS - FEBRUARY 19, 1996 THROUGH FEBRUARY 21, 1996

LIST SORTED BY CLASS, BUILDING, MARK NO.

#	Class Mark No.	Description	Bldng	Elev.	Peer Review Comments
1	01 2-EP-MC-11	EP/EMERGENCY MCC 2J1-1	SB	254'	Anchorage OK. Cabinet connected to adjacent cabinets at top and bottom.. No concern. SEWS OK. Other MCCs reviewed from outside and appear similar.
2	04 TRANS-118-2*	EP/480/120 SEMI-VITAL TRANSFORMER (118-2)	SB	254'	Did not open cabinet and reviewed from outside. No concern noted. SEWS OK. Picture shows load path appears adequate.
3	04 TRANS-119-2*	EP/480/120 SEMI-VITAL TRANSFORMER (119-2)	SB	254'	Did not open cabinet and reviewed from outside. No concern noted. SEWS OK. Picture shows load path appears adequate.
4	05 2-CH-P-1C	CH/CENTRIFUGAL CHARGING PUMP C; (CCP C)	AUX	244'	No concern. Other valves in this cubical OK.
5	05 2-RS-P-3A	RS/CASING COOLING PUMP A	CSCPH	271'	No concern.
6	05 2-RS-P-3B	RS/CASING COOLING PUMP B	CSCPH	271'	No concern.
7	05 2-QS-P-1A	QS/QS PUMP A	QSPH	274'	No concern. Lube oil site bulb adequately mounted.
8	05 2-QS-P-1B	QS/QS PUMP B	QSPH	274'	No concern. Lube oil site bulb adequately mounted.

USI A-46 AND IPEEE (SEISMIC) - NORTH ANNA UNIT 2  
PEER REVIEW COMPONENTS - FEBRUARY 19, 1996 THROUGH FEBRUARY 21, 1996

LIST SORTED BY CLASS, BUILDING, MARK NO.

#	Class Mark No.	Description	Bldng	Elev.	Peer Review Comments
9	06 2-RS-P-2A	RS/OUTSIDE RECIRC SPRAY PUMP A	SFGD	267'	SEWS reviewed. Anch. calc was part of the SEWS package. SEWS states casing/shaft >20' but no disposition/OSVS was provided in the SEWS package regarding evaluation.
10	06 2-RS-P-2B	RS/OUTSIDE RECIRC SPRAY PUMP B	SFGD	267'	SEWS reviewed. Anch. calc was part of the SEWS package. SEWS states casing/shaft >20' but no disposition/OSVS was provided in the SEWS package regarding evaluation.
11	06 2-SI-P-1A	SI/LHSI PUMP A	SFGD	255'	No concern
12	06 2-SI-P-1B	SI/LHSI PUMP B	SFGD	255'	No concern
13	07 2-BD-TV-200A	BD/SG BLOWDOWN CONTMT ISOL	AUX	244'	Long operator length was an outlier and has been evaluated by Virginia Power.
14	07 2-CC-TV-200A	CC/CC RETURN FROM COOLING COIL CONTMT ISOL	AUX	244'	No concern.
15	07 2-CC-TV-200C	CC/CC RETURN FROM COOLING COIL CONTMT ISOL	AUX	244'	Potential interaction. This was also identified by SCEs. Method of resolution should be determined.
16	07 2-CC-TV-201A	CC/THERMAL BARRIER DISCH CONTMT ISOL	AUX	244'	No concern.

USI A-46 AND IPEEE (SEISMIC) - NORTH ANNA UNIT 2  
 PEER REVIEW COMPONENTS - FEBRUARY 19, 1996 THROUGH FEBRUARY 21, 1996

LIST SORTED BY CLASS, BUILDING, MARK NO.

#	Class Mark No.	Description	Bldng	Elev.	Peer Review Comments
17	07 2-CC-TV-203B	CC/RHR HX OUTLET CONTMT ISOL	AUX	252'	AOV may be of a different type than those contained in the experience database, but was judged OK.
18	07 2-CV-TV-250C	CV/ATMOS CLEANUP CONTMT ISOL	AUX	244'	No concern.
19	08A 2-CH-MOV-2115 D	CH/RWST TO CCP INLET ISOL	AUX	246'	No concern
20	08A 2-CH-MOV-2350	CH/EMERGENCY BORATE VALVE	AUX	278'	No concern.
21	08A 2-SJ-MOV-2869 B	SI/CCP TO HOT LEGS 1, 2, 3	AUX	244'	No concern.
22	08B 2-SS-TV-202B	SS/RC COLD LEG SAMPLE ISOL	AUX	245'	No concern.
23	08B 2-SS-TV-203B	SS/SAMPLING SYSTEM ISOL	AUX	259'	No concern.
24	08B 2-SS-TV-206B	SS/HOT LEG SAMPLE ISOL	AUX	249'	No concern.

USI A-46 AND IPEEE (SEISMIC) - NORTH ANNA UNIT 2  
 PEER REVIEW COMPONENTS - FEBRUARY 19, 1996 THROUGH FEBRUARY 21, 1996

LIST SORTED BY CLASS, BUILDING, MARK NO.

#	Class Mark No.	Description	Bldng	Elev.	Peer Review Comments
25	10 1-HV-AC-1	HV/CONTROL ROOM SB AIR CONDITIONER		277'	No concern. SEWS was reviewed, shows 'N' in an anchorage caveat, but 'Y' for overall anchorage based on the evaluation of anchorage. An OSVS form should be completed for this item.
26	10 1-HV-AC-2	HV/CONTROL ROOM SB AIR CONDITIONER		277'	No concern. SEWS was reviewed, shows 'N' in an anchorage caveat, but 'Y' for overall anchorage based on the evaluation of anchorage. An OSVS form should be completed for this item.
27	10 2-HV-AC-8	HV/CONTROL ROOM SB AIR CONDITIONER		277'	No concern. SEWS was reviewed, shows 'N' in an anchorage caveat, but 'Y' for overall anchorage based on the evaluation of anchorage. An OSVS form should be completed for this item.
28	10 2-HV-AC-9	HV/CONTROL ROOM SB AIR CONDITIONER		277'	No concern. SEWS was reviewed, shows 'N' in an anchorage caveat, but 'Y' for overall anchorage based on the evaluation of anchorage. An OSVS form should be completed for this item.
29	15 2-BY-B-02	BY/125V BATTERY SB 2-II		252'	Racks well supported. No Styrofoam spacers between cells at those locations where two rods go through. This was noted on the SEWS as unknown, but no resolution method was stated.
30	19 2-CC-TE-249A	CC/RHR HX COOLING WATER OUTLET TEMP	AUX	251'	No concern
31	19 2-CC-TE-249B	CC/RHR HX COOLING WATER OUTLET TEMP	AUX	251'	No concern
32	20 2-EI-CB-06A	EI/AUXILIARY SHUTDOWN PANEL	SB	254'	3 bolts in the front. No concern.

PEER REVIEW COMPONENTS - FEBRUARY 19, 1996 THROUGH FEBRUARY 21, 1996

LIST SORTED BY CLASS, BUILDING, MARK NO.

#	Class Mark No.	Description	Bldng	Elev.	Peer Review Comments	
33	20	2-EI-CB-06B	EI/AUXILIARY SHUTDOWN PANEL	SB	254'	Anchorage OK (6 anchor bolts). No concern
34	20	2-EI-CB-23A	EI/PROCESS CABINET A	SB	252'	3 bolts in front with 3/4" shims. One friction clip. 3 anchor bolts in back. Reviewed SEWS - OK. No concern.
35	20	2-EI-CB-51	EI/PRIMARY PLANT PROCESS CABINET 1	SB	252'	4 bolts in front and 4 in back. SEWS OK. No concern.
36	21	2-CC-E-1A	CC/COMPONENT COOLING WATER HX	AUX	274'	Well supported laterally at top and bottom. Reviewed calculation, it demonstrates adequate safety margin.
37	21	2-CC-E-1B	CC/COMPONENT COOLING WATER HX	AUX	274'	Well supported laterally at top and bottom. Reviewed calculation, it demonstrates adequate margin of safety.
38	21	2-SI-TK-2	SI/BORON INJECTION TANK (BIT)	AUX	244'	Tank on legs. To be evaluated. No concern.

## APPENDIX D

### **Resumes of Key Personnel**

The resumes of key personnel, including the Seismic Review Team members, and the Peer Reviewer are included in this Appendix.



## Appendix D: Resumes and Training Records of Key Personnel

### Seismic Capability Engineers

Mr. D. Bhargava (Virginia Power)  
Mr. R. D. Campbell (EQE International)  
Mr. T. W. Hsu (Virginia Power)  
Dr. J. J. Johnson (EQE International)  
Mr. D. P. Madden (Virginia Power)  
Mr. K. N. Meherotra (Virginia Power)  
Mr. C. G. Ranganath (Virginia Power)  
Mr. M. Salmon (EQE International)  
Mr. S. E. Zinkham (Virginia Power)

### Independent Reviewers

Dr. K. K. Dwivedy (Virginia Power)  
Dr. R. P. Kennedy (Structural Mechanics Consulting, Inc.)  
Mr. C. E. Sorrell (Virginia Power)

Divakar Bhargava  
2412 Cedar Cone Drive  
Richmond, VA 23233  
(804) 527-0804

- Objective:** To provide documentation of education and experience level for qualification as a Seismic Capability Engineer for the resolution of USI A-46 and IPEEE (seismic).
- Experience:** Twenty-two years of experience in U.S. Nuclear Power Plant industry, primarily in the Engineering Mechanics area. Responsibilities include static and dynamic analyses of major equipment supports, components, structures and systems; seismic evaluation of components, thermal analyses, hydrodynamic load analyses, etc.
- Education:** Indian Institute of Technology, Delhi  
B.S. Mechanical Engineering, 1967
- Syracuse University  
M.S. Mechanical Engineering, 1971
- Completed course work for Ph.D. at Syracuse University, 1973  
Several graduate level courses at NJIT, MIT, and UVA.
- License:** Professional Engineer, Texas, 1989
- Skills:** Knowledge of several engineering and non-engineering computer programs.



# Certificate of Achievement

This is to Certify that

**Divakar Bhargava**

has Completed the SQUG Walkdown Screening  
and Seismic Evaluation Training Course  
Held November 9-13, 1992



*Neil P. Smith*

Neil P. Smith, Commonwealth Edison  
SQUG CHAIRMAN

*Robert P. Kassara*

Robert P. Kassara, EPRI  
SQUG Program Manager

*David A. Freed*  
David A. Freed, MPR Associates  
SQUG Training Coordinator

## ROBERT D. CAMPBELL

### PROFESSIONAL HISTORY

*EQE International, Inc.*, Irvine, CA, Sr. Vice President, 1989-Present  
*EQE International, Inc.*, Costa Mesa, CA, Senior Consultant, 1987-1989  
*NTS Engineering*, Long Beach, CA, Manager, Energy Programs, 1986-1987  
*NTS/Structural Mechanics Associates*, Newport Beach, CA, Project Manager, 1984-1986  
*Structural Mechanics Associates*, Newport Beach, CA, Project Manager, 1980-1984  
*Engineering Decision Analysis Company*, Irvine, CA, Manager, Mechanical Systems, 1976-1980  
*Holmes and Narver, Inc.*, Anaheim, CA, Manager, Nuclear Code Analysis, 1974-1976  
*Rockwell International, Liquid Metal Engineering Center*, Canoga Park, CA, Member of Technical Staff, 1968-1972, Manager, Stress Analysis, 1972-1974  
*Consultant*, Stress Analysis and Structural Testing, 1966-1968  
*Rockwell International, Rocketdyne Division*, Canoga Park, CA, Senior Stress Analyst, 1965-1966  
*Rockwell International, Atomic International Division*, Canoga Park, CA, Design Engineer, 1961-1965

### PROFESSIONAL HISTORY

Mr. Campbell has over 30 years experience in engineering design, analysis, risk assessment and management. His areas of expertise is focused on mechanical systems for power stations, hazardous chemical facilities, high temperature liquid metal facilities, and propulsion systems. Since 1980, his emphasis has been in probabilistic evaluation of power plant equipment and subsystems. As part of this work, he has been involved in the detailed walkdowns and evaluations of over 40 power stations. He was a principal participant in the development and application of seismic margin criteria in an EPRI sponsored research program and has participated in the development of methodology and its application to over 20 seismic probabilistic risk assessments for nuclear power stations. He is also active in ASME Boiler and Pressure Vessel Code Committees which establish design and fabrication requirements for elevated-temperature power plant components.

### PROFESSIONAL EXPERIENCE

Mr. Campbell is involved in diverse programs for evaluating risk from natural and man-made hazards to nuclear and acutely hazardous chemical facilities. His most recent projects include the seismic evaluation and design of upgrades for Soviet-designed reactors in Eastern Europe. He has participated in several training courses on seismic PSA and seismic evaluation of NPP's. These courses were sponsored by IAEA, USNRC and private industry. He serves as a technical consultant on several other risk assessment programs in the U.S., Europe and Asia.

Mr. Campbell was project manager of an EPRI-sponsored research program on evaluation of seismic margin in existing power stations. The program objective was to develop and apply criteria to reevaluate existing power stations for earthquakes significantly larger than those for which the plants were originally designed.

## PROFESSIONAL EXPERIENCE (CONTINUED)

Past major assignments include principal investigator in the Subsystems Fragility Project and Subsystem Response Project of the Seismic Safety Margin Research Program. The aim of this USNRC-sponsored program was to develop and apply methodology for seismic risk assessment of nuclear power plants. His responsibilities included developing methodology for subsystem response and equipment fragility and applying the methodology to development of a probabilistic distribution of equipment capacities and a probabilistic distribution of equipment dynamic responses for all safety-related equipment in a reference PWR. A similar activity was conducted for a reference BWR. Mr. Campbell also performed probability studies for indirectly-induced Loss-of-Coolant Accident in support of the USNRC Load Combination Program.

Mr. Campbell has participated in seismic risk and seismic margin assessments on over 30 PWR and BWR plants. This activity involved detailed walkdowns and development of seismic fragility descriptions of subsystems and components. He conducted a study on the applicability of LWR seismic risk methodology to Liquid Metal Fast Breeder Reactors in Japan and directed the fragility development for that project. He was manager of design analysis of auxiliary liquid metal piping for the Clinch River Breeder Reactor Project. He managed over 20 stress engineers, thermal analysts, and design engineers in the design of a major liquid metal component test facility.

Other diversified projects include the evaluation of the internal components of a sodium-heated steam generator subjected to severe thermal transients, design of a scale model fluid-structure interaction test of a MARK I vent header system, and a life evaluation of HTGR steam tubes, and a fracture mechanics failure analysis of a 38-inch-diameter pipe closure. He has performed dynamic and thermodynamic analyses of special machinery for nuclear kinetics testing, including a test to destruction of a compact nuclear reactor.

In the aerospace field, Mr. Campbell has designed high-temperature high-vacuum test apparatus for Space Nuclear Auxiliary Power (SNAP) reactor components, conducted stress, thermal, and dynamic analyses of liquid and solid rocket engines, propellant tanks, graphite composite thrust chambers, spacecraft structures, solar arrays, and a large antenna structure. He designed and constructed elevated temperature fatigue tests of titanium aircraft structures and structural tests of a missile propellant feed system.

In addition, Mr. Campbell served a four-year apprenticeship as a tool and die maker. He has built tools, dies, jigs, fixtures, and plastic and rubber molds.

## EDUCATION

UNIVERSITY OF SOUTHERN CALIFORNIA, Los Angeles: M.S. Mechanical Engineering, 1967  
 UNIVERSITY OF WASHINGTON: B.S. Mechanical Engineering, 1961

## REGISTRATIONS

Mechanical Engineer: California  
 Professional Engineer: Colorado  
 Professional Engineer: Tennessee

## COMMITTEE MEMBERSHIPS

ASME Boiler and Pressure Vessel Code, Past Chairman of Working Group on Creep Fatigue  
 ASME Boiler and Pressure Vessel Code, Member of Subgroup on Elevated Temperature Design

## PUBLICATIONS

*Risk and Decision Analysis*

With S. Short, M. Ravindra, G. Hardy and J. Johnson, "Seismic Reevaluation and Upgrading of Nuclear Power Facilities Outside the U.S. Using U.S.-Developed Methodologies," Sixth Symposium on Current Issues Related to Nuclear Power Plant Structures, Equipment and Piping, December 1996, Raleigh, N.C.

"Seismic PRA, Approach and Results," SMiRT 13, Post Conference Seminar 16, Iguazu, Argentina, August 1995.

With O. Mazlenkov and J. Johnson, "Comparison of Design and Probabilistic Analysis of Nuclear Power Plants," SMiRT 13, Paper 10, Porto Alegre, Brazil, August 1995.

"A Comparison of Seismic Risk of Two Soviet-Designed Reactors," ASME Pressure Vessel and Piping Conference, Honolulu, HI, July 1995.

"Use of Seismic Experience Data for Seismic Verification of VVER Reactors," IAEA Coordinated Research Program, St. Petersburg, Russia, June 1995.

With S. P. Harris, "Seismic-Fire Interaction," International Conference on Fire Protection and Prevention in Nuclear Facilities," Fire and Safety 94, Barcelona, Spain, December 1994.

With R. Hookway, G. Dellopoulos, P. Monette, "Paks NPP Seismic Evaluation and Retrofit Design for Safety Important Components," 10th European Conference on Earthquake Engineering, Vienna, Austria, August 1994.

With J. Johnson, "Overview of Seismic Re-Evaluation Methodologies," SMiRT 12, Post Conference Seminar 16, Vienna, Austria, August 1993.

"Insights from Probabilistic Risk Assessments Regarding the Variance of Design Margins for Seismic Events," Technology for the 90s, American Society of Mechanical Engineers, July 1993.

With A. Yamaguchi and M.K. Ravindra, "Bayesian Methodology for Generic Seismic Fragility Evaluation of Components in Nuclear Power Plants," Paper MO4/3, Structural Mechanics in Reactor Technology, Tokyo, Japan, August 1991.

With A. Yamaguchi, T. Kipp, L. Tiong and W. Tong, "Seismic Fragility Methodology for Evaluation of Liquid Metal Reactors," Paper M11(H)1, Structural Mechanics in Reactor Technology, Tokyo, Japan, August 1991.

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With P. Monette, R. Baltus, P. Yanev and H. Stigler, "Seismic Ruggedness Evaluation of Kozloduy VVER Units 1-4," IAEA Technical Committee Meeting, Tokyo, Japan, August 1991.

With P. Yanev, M.K. Ravindra and P. Monette, "Methodologies for Seismic Verification of Existing Nuclear Power Plants," IAEA Technical Committee Meeting, Tokyo, Japan, August 1991.

With V.M. Bier and G.H. Sarmanian, "Development and Applications of a Comprehensive Framework for Assessing Alternative Approaches to Snubber Reduction." Paper presented at the International Topical Conference on Probabilistic Safety Assessment and Risk Management, Zurich, Switzerland, September 1987.

"Walkdown Criteria for Evaluating Seismic Margin in Nuclear Power Plants," with R.P. Kennedy and R.P. Kassawara. Paper K11-2 presented at Structural Mechanics in Reactor Technology Conference, August 1987.

With R.P. Kennedy and R.P. Kassawara, "An Overview of Seismic Margin Assessments for Nuclear Power Plants." Paper M11-1 presented at Structural Mechanics in Reactor Technology Conference, August 1987.

With R.H. Sues and P.J. Amico, "Contributions of Earthquake Initiating Events to Nuclear Power Plant Public Risk," paper M2-2 presented at Structural Mechanics in Reactor Technology Conference, August 1987.

With R.P. Kennedy and R.H. Sues, "Overview of Seismic Margin Insights Gained from Seismic PRA Results." In *Proceedings of the Sixth International ANS/ENS Conference on Thermal Reactor Safety*, San Diego, CA, June 1986.

With D. Bley, L. Sarmanian, R. Sues, and H. Peria, "Seismic Risk Assessment of Systems Interactions," Paper M22-3 presented at *Structural Mechanics in Reactor Technology Conference*, February 1986.

With R.P. Kennedy, "Comments on Seismic Fragility of Nuclear Power Plant Components." In *Proceedings of the Workshop on Fragility of Nuclear Power Plant Components*. Brookhaven National Laboratory, June 1985.

With R.P. Kennedy, "Reliability of Pressure Vessels and Piping Under Seismic Loads." *ASME Decade of Progress*, 1985.

With M.K. Ravindra, "Treatment of Gross Design and Construction Errors in Seismic PRAs." In *Proceedings of the ASCE Specialty Conference on Civil Engineering in Operating Nuclear Facilities*, Raleigh, NC, September 1984.

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"Development of Seismic Fragilities for Mechanical and Electrical Equipment." In *Proceedings of the ASCE Specialty Conference on Probabilistic Mechanics and Structural Reliability*. University of California, Berkeley, January 1984.

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Joint Author with G. Hardy, "Development of Fragility Descriptions for Seismic Risk Assessment of Nuclear Power Plants." Paper presented at the ASME Pressure Vessel and Piping Conference, Portland, OR, 1983.

Joint Author, "Development of Probabilistic Seismic Failure Relationships of Nuclear Components for the SSMRP." Paper K16/4 presented at the Sixth Structural Mechanics in Reactor Technology (SMiRT) Conference, Paris, France, 1981.

Joint Author, "Probabilistic Seismic Safety Study of an Existing Nuclear Power Plant," *Nuclear Engineering and Design* 59, No. 2: 315-338, August 1980.

With R.P. Kennedy, "Fragility Levels of Equipment," Post-SMiRT 5 Presentation, Session 9, August 20, 1979.

*Design Analysis*

With L.W. Tiong and J.O. Dizon, "Response Predictions for Piping Systems Which Have Experienced Strong Motion Earthquakes," *Proceedings of ASME PV & Piping Conference*, Nashville, TN, May 1990.

With R.P. Kennedy and R.D. Thrasher, "Dynamic Reserve Margin in Piping Systems Subjected to Seismic Loading." *ASME Decade of Progress*, 1985.

With R.P. Kennedy and R.D. Thrasher, "Inelastic Response of Piping Systems Subjected to In-Structure Seismic Excitation." Paper 83PVP-50 presented at the ASME Piping and Pressure Vessel Conference, June 1983.

With R.L. Cloud and D. Bushnell, "Creep Instability in Flexible Piping Joints." In *Metallic Bellows and Expansion Joints*, American Society of Mechanical Engineers, New York, 1981.

With R.P. Kennedy, "Load Combination as Seen by Industry." Presentation to Lawrence Livermore National Laboratory Workshop on Load Combination, November 1979.

"Creep/Fatigue Calculation Procedures for Code Case 1592." In *Advances in Design for Elevated Temperature Environment*, American Society of Mechanical Engineers, New York.



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With J.B. McCarthy and P.S. McDonald, "Inelastic Analysis of a Branch Shell Junction." In *Proceedings of the ASME Conference on Pressure Vessels and Piping, Analysis, and Computers*, 1974.

*Testing*

With T.R. Kipp, "Accelerated Testing of Flexible Piping Joints Operating at Creep Temperature." In *Metallic Bellows and Expansion Joints*, American Society of Mechanical Engineers, New York, 1981.

With R. Vasudevan, "Variability Associated with Seismic Testing Methods." SAE Paper 801130, October 1980.

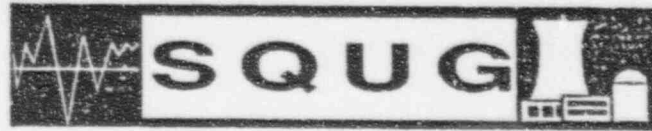
*Machine Design*

With T.L. Anderson and J.D. Rochfort, "High Rate Reactivity Insertion Device for Snap 10A Reactor Testing." Paper presented at the ASME Winter Annual Meeting, 1965.

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*Material Behavior*

"Creep/Fatigue Interaction Correlation for 304 Stainless Steel Subjected to Strain-Controlled Cycling with Hold Times at Peak Strain," *Journal of Engineering for Industry*, November 1971.



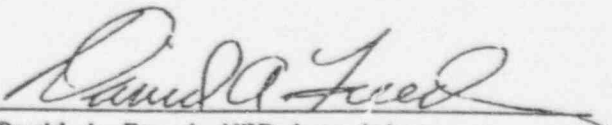
# Certificate of Achievement

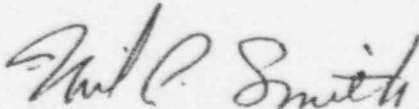
This is to Certify that

**Robert Campbell**

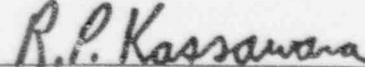
has Completed the SQUG Walkdown Screening  
and Seismic Evaluation Training Course  
Held January 15-20, 1993



  
David A. Freed, MPR Associates  
SQUG Training Coordinator



Neil P. Smith, Commonwealth Edison  
SQUG Chairman



Robert P. Kassawara, EPRI  
SQUG Program Manager

T. W. Hsu  
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(804) 747-9418

**Objective:** To provide documentation of education and experience level for qualification of Seismic Capability Engineers for resolution of USI A-46 and IPEEE (seismic).

**Experience:** Virginia Power  
Systems Engineer, 1981 - Present  
Performed pipe stress analyses, fracture mechanics, in-service inspection of piping and equipment from 1981 through 1985. Performed seismic qualification of equipment since 1984. Retained by EPRI/Virginia Power to investigate seismic experience data of nuclear power plants in Japan from 1986 and 1987 for one year. SQUG representative for Virginia Power since 1985. performed pilot USI A-46 seismic verification walkdowns at Nine Mile Point Unit 1 with the NRC staff and SQUG consultants in February 1989. Attended the training courses on A-46 walkdowns, relay evaluations NARE, EQE and NUS seismic PRA.

Westinghouse Electric  
Senior Stress Analyst, 1976 - 1981  
Performed reactor vessel and reactor internals stress analyses for Crinch River fast Breeder reactor using WECAN/ANSYS program.

Babcock and Wilcox Co.  
Stress Analyst, 1967 - 1976  
Performed piping analyses for Navy and Westinghouse nuclear atomic submarine using Mel-21 Los Alamos piping program.

**Education** Taiwan College of Engineering  
B.S. Mechanical Engineering, 1962

University of Akron  
M.S. Mechanical Engineering, 1967

University of Southern California  
Earthquake Engineering Course, 1972

Westinghouse Fracture Mechanical Training Course, 1978

Wyle Laboratories Seismic Qualification Training Course, 1983

EPRI Seismic Hazard symposium several times in 1987-1989, etc.

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(Cont'd)

**License:** Professional Engineer, Ohio 1967  
Professional Engineer, Virginia 1985

**Skill:**

- Seismic Engineering
- Seismic PRA
- Seismic qualification of equipment using IEEE 344-1975
- Seismic verification of equipment using experience data
- Stress analyses for solid, structure, fracture mechanics, and piping



# Certificate of Achievement

This is to Certify that

**Tom W. Tsu**

has Completed the SQUG Walkdown Screening  
and Seismic Evaluation Training Course  
held September 14-18, 1992



*Neil P. Smith*

Neil P. Smith, Commonwealth Edison  
SQUG Chairman

*R. L. Krasner*

Robert P. Krasnawara, EPRI  
SQUG Program Manager

*David A. Fred*

David A. Fred, MPR Associates  
SQUG Training Coordinator

JAMES J. JOHNSON

#### PROFESSIONAL HISTORY

*EQE International*, San Francisco, California, Division President, 1986-present  
*NTS/Structural Mechanics Associates*, San Ramon, California, Vice President,  
1984-1986  
*Structural Mechanics Associates*, San Ramon, California, Vice President, Project  
Manager, 1980-1984  
*Lawrence Livermore National Laboratory*, Livermore, California, Project Manager,  
1978-1980  
*General Atomic Company*, San Diego, California, Branch Manager, Staff Engineer,  
Senior Engineer, 1972-1978

#### PROFESSIONAL EXPERIENCE

Dr. Johnson has participated in the development, implementation, and teaching of seismic risk and seismic margin assessment methodologies. He has participated in seismic PRAs of over 20 nuclear power plants. His participation encompasses many aspects including hazard definition, seismic response and uncertainty determination, detailed walkdowns, and fragility assessment. A major element of seismic PRAs and seismic margin assessments is best estimate response analyses. Dr. Johnson participated in the development of best estimate or median-centered response procedures and has participated in its application to over 60 nuclear facilities. Dr. Johnson was responsible for several portions of the U.S. Nuclear Regulatory Commission Seismic Safety Margins Research Program (SSMRP) -- soil-structure interaction, major structure response, subsystem response, and the seismic analysis calculational procedures (SMACS). Dr. Johnson has presented numerous seminars and training courses on seismic PRA and seismic margin methodologies.

Dr. Johnson has played a significant role in the development of general and plant-specific seismic evaluation procedures. This project participation has ranged from the SQUG General Implementation Procedure (GIP) to plant-specific procedures for the Savannah River Site. Procedures include criteria for assessing equipment and component functionality and structural integrity, seismic systems interaction, anchorage, and other issues.

Dr. Johnson has extensive theoretical and practical experience in the soil-structure interaction (SSI) analysis of major facilities and has written a comprehensive assessment of the state-of-the-art of SSI. Most recently, Dr. Johnson was principal investigator for EQE on the SSI modeling, predictive analysis, and resolution of measured and predicted response for the combined EPRI/NRC Lotung, Taiwan scale model project. He has performed SSI analyses of a wide variety of surface and embedded structures using simplified to sophisticated substructure methods and linear and nonlinear finite element techniques. Nonlinear analyses included geometric effects (sliding and separation) and soil material behavior. He has made extensive use of comparative analyses and parametric studies to benchmark techniques and soil and structure configurations. Dr. Johnson was a consultant to

**PROFESSIONAL EXPERIENCE (Continued)**

the U.S. Nuclear Regulatory Commission (NRC) concerning revisions to the Standard Review Plan for seismic analysis and design.

Dr. Johnson has developed, verified, maintained, and extensively applied several large computer programs to perform stress and seismic analysis. Among these are: MODSAP, a general purpose finite element program with special capability in the dynamic analysis of structures with localized nonlinearities; and SMACS, a probabilistic response analysis program for soil, structures, equipment, and piping systems.

Dr. Johnson was responsible for the analysis and design of components subjected to extreme internally and externally generated loading conditions. This work includes seismic qualification of control room equipment and motor control centers, fuel handling components, core and core support structures, heat exchanger shell and tubes subjected to a tube burst loading, and shipping casks of irradiated fuel and equipment subjected to impact loading.

Dr. Johnson has taught Earthquake Engineering of Major Facilities at the University of California, Berkeley. This course covered all phases of the earthquake engineering process, including seismic hazard definition; seismic analysis and design of structures, equipment and tanks; and seismic risk analysis. Dr. Johnson coordinated and taught portions of the SQUG training course that covered the seismic evaluation of equipment, cable trays and conduit, piping, anchorage, and seismic systems interaction.

Dr. Johnson is a member and chairman of the Working Group on Input to Secondary Systems of the ASCE Nuclear Structures and Materials Committee, Dynamic Analysis Committee, and the ASCE Committee on Nuclear Standards, Seismic Analysis of Safety Class Structures.

**EDUCATION**

UNIVERSITY OF ILLINOIS: Ph.D. Civil Engineering, 1972

UNIVERSITY OF ILLINOIS: M.S. Civil Engineering, 1969

UNIVERSITY OF MINNESOTA: B.C.E. Civil Engineering, 1967

**REGISTRATION**

California: Civil Engineer

**SECURITY CLEARANCE**

Department of Energy: Q-Clearance

## AFFILIATIONS

Phi Kappa Phi Honor Society  
Sigma Xi  
American Society of Civil Engineers  
Earthquake Engineering Research Institute

## PUBLICATIONS AND REPORTS

Dr. Johnson has contributed to over 40 technical reports and journal articles. The following is a selection of documents for which he is the principal author.

### *Seismic Margin Studies and Risk Analyses*

"A Methodology for Assessment of Nuclear Power Plant Seismic Margin." October 1988. Electric Power Research Institute. EPRI NP-6041.

With M. K. Ravindra. June 1991. "Treatment of Seismically Induced Common Cause Failures in Nuclear Power Plant PSA." In *Proceedings of Sixth International Conference on Applications of Statistics and Probability in Civil Engineering*. Mexico City, Mexico.

With D. P. Moore et al. 1990. "Seismic Margin Assessment of Edwin I. Hatch Nuclear Plant Unit 1." Electric Power Research Institute.

With O. R. Maslenikov and D. J. Doyle. 1987. "Review of Seismic Analysis of Hatch Units 1 and 2: In-Structure Response Spectra." UCID-21015. Lawrence Livermore National Laboratory.

With O. R. Maslenikov et al. 1987. "Soil-Structure Interaction Analysis and In-Structure Response Spectra Generation for the N-Reactor Facility." Vol. 1 and 2. Prepared for UNC Nuclear Industries. San Ramon, CA: EQE Engineering.

With P. S. Hashimoto et al. March 1988. "N-Reactor River Pump House and Gantry Crane (181-N) Seismic and Tornado Analysis." Prepared for Westinghouse Hanford Company. Newport Beach, CA: EQE Engineering.

With B. J. Benda et al. June 1988. "Quantification of Computational Margins in Piping System Seismic Response: Methodologies and Damping." *Seismic Engineering, 1988*, The Pressure Vessels and Piping Division, ASME, PVP-Vol. 144. (Received "Certificate of Recognition," July 1989.) San Ramon, CA: EQE Engineering.

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With O. R. Maslenikov et al. March 1989. "Analysis of Large-Scale Containment Model in Lotung, Taiwan: Forced Vibration and Earthquake Response Analysis and Comparison." In *Proceedings: EPRI/NRC/TPC Workshop on Seismic Soil-Structure Interaction Analysis Techniques Using Data From Lotung, Taiwan*. NP-6154, Vol. 1, Paper 13. Electric Power Research Institute.



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With A. P. Asfura et al. March 1990. "Pilot Study of Reactor/Containment Building: Oskarshamn 2 and Barsebeck 1 and 2, Probabilistic Response and Capacity." Rev. 1. Prepared for Sydkraft and OKG Aktiebolag, Sweden. San Francisco, CA: EQE Engineering.

With O. R. Maslenikov et al. 1989. "Seismic Analysis of the Vertical Tube Storage System Monorail Support Frames in Buildings 105-L, 105-K, and 105-P." Prepared for Westinghouse Savannah River Company. San Francisco, CA: EQE Engineering.

With G. E. Cummings and R. J. Budrietz. October 1984. "NRC Seismic Design Margins Program Plan." UCID-20247. Lawrence Livermore National Laboratory.

With L. C. Shieh et al. August 1985. "Simplified Seismic Probabilistic Risk Assessment: Procedures and Limitations." NUREG/CR-4331. UCID-20468. Lawrence Livermore National Laboratory.

With A. P. Asfura and O. R. Maslenikov. 1990. "Topics in Soil-Structure Interaction." Paper presented at the Ninth Earthquake Engineering Conference, December 1990, Roorkee, India.

With B. J. Benda et al. 1988. "SSC Dipole Magnet System: Stress Analysis for Seismic and Transportation Loading." Prepared for the University Research Association. San Ramon, CA: EQE Engineering.

With O. R. Maslenikov et al. 1991. "Seismic Analysis of the Vertical Tube Storage System Monorail Support Frame in Building 105-K at the Savannah River Plant Using Upgraded Seismic Input Motions, Volume 1: Soil-Structure Interaction Analysis of Building 105-K, Volume 2: Response Spectrum Analysis of the VTS Monorail Support Frame." Prepared for Westinghouse Savannah River Company. San Francisco, CA: EQE International.

With L. J. Bragagnolo and S. J. Eder. February 1991. "Seismic Evaluation of the Energy Management System." Prepared for Pacific Gas & Electric Company. San Francisco, CA: EQE Engineering

With G. S. Hardy. August 1988. "Technical Basis, Procedures, and Guidelines for Seismic Characterization of SRP Reactors." Savannah River Report RTR 2582. Costa Mesa, CA: EQE Engineering.

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With R. P. Kennedy. 1985. "Summary of Observations on Control Point Location and Spatial Variation of Free-Field Ground Motion." Report SMA 46001.02. Prepared for United Engineers and Constructors. San Ramon, CA: Structural Mechanics Associates.

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With B. J. Benda et al. 1984. "Response Margins of the Dynamic Analysis of Piping Systems." UCID-20067, rev. 1; NUREG/CR-3996. Livermore, CA: Lawrence Livermore National Laboratory.

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With J. C. Chen et al. 1984. "Uncertainty in Soil-Structure Interaction Analysis of a Nuclear Power Plant Due to Different Analytical Techniques." In *Proceedings of the Eighth World Conference on Earthquake Engineering*.

With B. J. Benda and L. Y. Cheng. 1983. "Evaluation of PVRC Proposed Changes for the Seismic Analysis and Design of Piping Systems: Damping and Peak Broadening." Report SMA 12209.03-01. Prepared for Lawrence Livermore National Laboratory. San Ramon, CA: Structural Mechanics Associates.

With T. Y. Chuang et al. 1983. "Impact of Changes in Damping and Spectrum Peak Broadening on the Seismic Response of Piping Systems." UCRL-53491; NUREG/CR-3526. Livermore, CA: Lawrence Livermore National Laboratory.

With M. P. Bohn et al. August 22-26, 1983. "Application of the SSMRP Methodology to the Seismic Probabilistic Risk Analysis at the Zion Nuclear Power Plant." In *Proceedings Seventh SMiRT Conference*. Chicago, Illinois.

With J. C. Chen and D. L. Bernreuter. August 22-26, 1983. "The Effect of Local Soil Conditions on Site Amplification." Paper presented at the Seventh SMiRT Conference, Chicago, Illinois.

With O. R. Maslenikov and J. C. Chen. 1983. "Uncertainty in Soil-Structure Interaction Analysis Arising from Differences in Analytical Techniques." UCRL-53026; NUREG/CR-2077. Livermore, CA: Lawrence Livermore National Laboratory.

With P. D. Smith et al. 1981. "SSMRP Phase I Final Report: Overview." UCRL-53021, vol. 1; NUREG/CR-2015, vol. 1. Livermore, CA: Lawrence Livermore National Laboratory.

With O. R. Maslenikov et al. 1982. "SSMRP Phase I Final Report: Soil Structure Interaction (Project III)." UCRL-53021, vol 4; NUREG/CR-2015, vol. 4. Livermore, CA: Lawrence Livermore National Laboratory.

PUBLICATIONS AND REPORTS (Continued)

With B. J. Benda and T. Y. Lo. 1981. "SSMRP Phase I Final Report: Major Structure Response (Project IV)." UCRL-53021, vol. 5; NUREG/CR-2015, vol. 5. Livermore, CA: Lawrence Livermore National Laboratory.

With G. L. Goudreau et al. 1981. "SSMRP Phase I Final Report: SMACS (Seismic Methodology Analysis Chain with Statistics) (Project VIII)." UCRL-53021, vol. 9; NUREG/CR-2015, vol. 9. Livermore, CA: Lawrence Livermore National Laboratory.

"Soil Structure Interaction: the Status of Current Analysis Methods and Research." 1981. UCRL-53011, NUREG/CR-1780. Livermore, CA: Lawrence Livermore National Laboratory.

With B. J. Benda and P. D. Smith. 1981. "Variability in Dynamic Characteristics and Seismic Response Due to the Mathematical Modeling of Nuclear Power Plant Structures." UCRL-85713. Preprint submitted to *Nuclear Engineering and Design*. Livermore, CA: Lawrence Livermore National Laboratory.

With P. D. Smith et al. 1981. "A Review of a Seismic Risk Analysis of the Decay Heat Removal Capability of Nuclear Power Plants." UCID-18692. Livermore, CA: Lawrence Livermore National Laboratory.

With C.M. Charman. August 17-21, 1981. "An Isoparametric Shell of Revolution Finite Element for Harmonic Loadings of Any Order." In *Proceedings Sixth SMiRT Conference*. Paris, France.

"Seismic Response Calculations for the U.S. NRC Seismic Safety Margins Research Program." August 17-22, 1981. In *Proceedings Sixth SMiRT Conference*. Paris, France.

With R. C. Chun et al. August 17-21, 1981. "Uncertainty in Soil-Structure Interaction Analysis of a Nuclear Power Plant: a Comparison of Linear and Nonlinear Analysis Methods." In *Proceedings Sixth SMiRT Conference*. Paris, France.

With B. J. Benda. August 17-21, 1981. "Uncertainty in Mathematical Models of a Typical Nuclear Power Plant Structure." In *Proceedings Sixth SMiRT Conference*. Paris, France.

With S. E. Bumpus and P. D. Smith. August 17-21, 1981. "Best Estimate vs. Evaluation Method Seismic (BE-EMS): an Introduction and Demonstration." In *Proceedings Sixth SMiRT Conference*. Paris, France.

With P. D. Smith et al. 1980. "An Overview of Seismic Risk Analysis for Nuclear Power Plants." UCID-18680. Livermore, CA: Lawrence Livermore National Laboratory.

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With S. E. Bumpus and P. D. Smith. 1980. "Best Estimate Method vs. Evaluation Method: a Comparison of Two Techniques in Evaluating Seismic Analysis and Design." UCID-52746; NUREG/CR-1489. Livermore, CA: Lawrence Livermore National Laboratory.

"Soil Structure Interaction Analysis for the U.S. NRC Seismic Safety Margins Research Program." August 13-17, 1979. In *Proceedings Fifth SMiRT Conference*. Berlin, Germany.

"Subsystem Response Determination for the U.S. NRC Seismic Safety Margins Research Program." August 13-17, 1979. In *Proceedings Fifth SMiRT Conference*. Berlin, Germany.

With W. Schlafer III and D. Tow. August 13-17, 1979. "Seismic Response Comparisons for an Embedded High Temperature Gas-Cooled Reactor (HTGR) on a High Seismic Site." In *Proceedings Fifth SMiRT Conference*. Berlin, Germany.

"SOILST: a Computer Program for Soil-Structure Interaction Analysis." 1979. GA-A15067 UC-77. San Diego, CA: General Atomic Company.

"MODSAP: a Modified Version of the Structural Analysis Program SAPIV for the Static and Dynamic Response of Linear and Localized Nonlinear Structures." GA-A-14006. San Diego, CA: General Atomic Company.

"Preliminary Seismic Analysis of the GCFR Core and Core Support Structure." June 22-23, 1978. Paper presented at the Third SAP User's Conference, University of Southern California, Los Angeles, California.

With R. P. Kennedy. October 17-21, 1977. "Earthquake Response of Nuclear Power Facilities." Paper presented at the ASCE Fall Convention and Exhibit, San Francisco, California.

With D. A. Wesley and I. T. Almajan. August 15-19, 1977. "The Effects of Soil-Structure Interaction Modeling Techniques on In-Structure Response Spectra." In *Proceedings Fourth SMiRT Conference*. San Francisco, CA.

"MODSAP: a Modified Version of the Program SAPIV for the Static and Dynamic Response of Linear and Localized Nonlinear Structures." June 22-23, 1977. Paper presented at the Second SAP User's Conference, University of Southern California, Los Angeles, California.

Dr. Johnson was also a contributing author to the following publications:

"Shutdown Decay Heat Removal Analysis of a Combustion Engineering 2-Loop Pressurized Water Reactor -- Case Study (St. Lucie)." August 1987. NUREG/CR-4710, SAND86-1797. Sandia National Laboratories. Albuquerque, New Mexico.

"Shutdown Decay Heat Removal Analysis of a Westinghouse 3-Loop Pressurized Water Reactor -- Case Study (Turkey Point)." March 1987. NUREG/CR-4762, SAND86-2377. Sandia National Laboratories. Albuquerque, New Mexico.

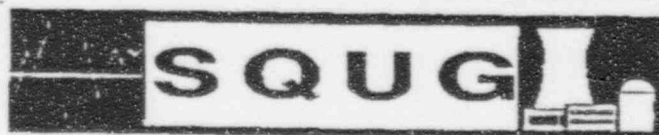
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"Shutdown Decay Heat Removal Analysis of a General Electric BWR4/Mark 1 -- Case Study (Cooper)." July 1987. NUREG/CR-4767, SAND86-2419. Sandia National Laboratories. Albuquerque, New Mexico.

"Shutdown Decay Heat Removal Analysis of a General Electric BWR3/Mark 1 -- Case Study (Quad Cities)." March 1987. NUREG/CR-4448, SAND85-2373. Sandia National Laboratories. Albuquerque, New Mexico.

"Shutdown Decay Heat Removal Analysis of a Babcock and Wilcox Pressurized Water Reactor -- Case Study (ANO-1)." March 1987. NUREG/CR-4713, SAND86-1832. Sandia National Laboratories. Albuquerque, New Mexico.

"Shutdown Decay Heat Removal Analysis of a Westinghouse 2-Loop Pressurized Water Reactor -- Case Study (Point Beach)." March 1987. NUREG/CR-4458, SAND86-2496. Sandia National Laboratories. Albuquerque, New Mexico.



# Certificate of Achievement

This is to Certify that

**James J. Johnson**

has Completed the SQUG Walkdown Screening  
and Seismic Evaluation Training Course  
Held June 22-26, 1992



David A. Freed, MPR Associates  
SQUG Training Coordinator

Neil P. Smith, Commonwealth Edison  
SQUG Chairman

Robert P. Kassawara, EPRI  
SQUG Program Manager



**Daniel P. Madden**  
**11100 Fox Meadow Dr.**  
**Richmond, VA 23233**  
**(804) 360-1526**

**Objective:** To provide documentation of education and experience level for qualification as Seismic Capability Engineers for resolution of USI A-46 and IPEEE (seismic).

**Experience:** Virginia Power, 1981 - Present  
Structural Engineer, Engineering Mechanics Group  
Current Position: Staff Engineer

Lynchburg Foundry  
Co-Op Student, 1977 - 1980  
Civil Engineering work study program

**Education:** VPI&SU  
B.S., Civil Engineering, 1981

University of Virginia  
M.E., Civil Engineering, 1987

**License:** Professional Engineer, Virginia 1985

**Skills:**

- Pipe stress analysis
- Pipe support analysis
- Equipment qualification
- Structural steel design
- Baseplate analysis
- Reinforced concrete design
- have used several structural/finite element analysis computer programs (NUPIPE, GTSTRUDL, STARDYNE, etc.)

**USI A-46 Training:** June 1992, Charlotte, N.C.



# Certificate of Achievement

This is to Certify that

**Daniel B. Madden**

has Completed the SQUG Walkdown Screening  
and Seismic Evaluation Training Course  
Held June 22-26, 1992



*Neil P. Smith*

Neil P. Smith, Commonwealth Edison  
SQUG Chairman

*David A. Freed*

David A. Freed, MPR Associates  
SQUG Training Coordinator

*Robert P. Kasawara*

Robert P. Kasawara, EPRI  
SQUG Program Manager

Kamal N. Mehrotra  
4904 Macilroy Court  
Richmond, VA 23228  
(804) 270-7439

**Objective:** To provide documentation and experience level for qualification as a Seismic Capability Engineer for resolution of USI A-46 and IPEEE (seismic).

**Experience:** Virginia Power  
Staff Engineer, 1991 - Present  
Responsibilities include seismic walkdown and evaluation of components associated with the USI A-46 and IPEEE efforts, seismic equipment qualification, analysis and seismic qualification of pipe supports and structural evaluation of tanks, anchorage, and structural modifications/enhancement to mechanical and electrical equipment to meet/exceed seismic performance criteria. Perform conduit and cable tray walkdowns inside and outside containment at Surry and North Anna Nuclear Power Stations and resolve seismic issues.

Staff Designer, 1982 - 1991  
Performed seismic structural analysis and design of pipe supports, anchorages for various mechanical and electrical equipment.

Performed non-seismic structural analysis and design for concrete and masonry buildings including foundations.

Nance Corporation - Richmond, Virginia  
Engineer, 1977 - 1982

Responsibilities included structural analysis and design of structural support and foundation for material handling equipment for coal, aggregate, etc. Performed structural analysis and designed structural steel towers; screen structures; crusher base; bins and hoppers; conveyor trusses and supports and foundations.

Was responsible for designing turn-key projects for Lone Star Bauxite plant at Chesapeake, VA; Saunder's quarry at Warrenton, VA; stone plant at Marion, WVA; Genstar Stone plant at Frederick, MD

**Education:** University of Virginia  
M.E. Civil Engineering, 1995

Birla Institute of Technology  
Mesra, Ranchi University, Bihar, India  
B.S. Civil Engineering, 1966

Kamal N. Mehrotra  
4904 Macilroy Court  
Richmond, VA 23228  
(804) 270-7439  
(Cont'd)

**License:** Professional Engineer, Virginia, 1979  
Professional Engineer, Maryland, 1987

**Additional Information:**

Trained Seismic Capability Engineer  
Attended and completed SQUG Walkdown Screening and Seismic Evaluation  
Training Course in February, 1993  
Attended and completed the Seismic IPE Add-On Training Course in March, 1993  
Attended the SQUG workshop in Chicago, 1994  
Attended the SQUG workshop in Knoxville, 1995



# Certificate of Achievement

This is to Certify that

**Ramal N. Mehrotra**

has Completed the SQUG Walkdown Screening  
and Seismic Evaluation Training Course  
held February 1-5, 1993



*Paul R. Smith*

Neil P. Smith, Commonwealth Edison  
SQUG Chairman

*David A. Freed*

David A. Freed, MPR Associates  
SQUG Training Coordinator

*R.P. Kassawara*

Robert P. Kassawara, EPRI  
SQUG Program Manager

Casaba G. Ranganath  
2721 Newquay Lane  
Richmond, VA 23236  
(804) 276-4937

**Objective:** To provide documentation of education and experience level for qualification as Seismic Capability Engineers for resolution of USI A-46 and IPEEE (seismic).

**Experience:** 1981 - Present - Virginia Electric and Power Company  
Involved with seismic qualification of electrical/mechanical equipment and structures for resolution of USI A-46 and IPEEE (seismic) issues. Performing walkdown of electrical/mechanical equipment, and raceway system for seismic verification.

Knowledgeable of nuclear design standards, seismic design practices, and equipment qualification practices for nuclear power plant.

Performed seismic margin evaluations of several electrical and mechanical equipment and their supports.

Working as a coordinator for developing technical standards, procedures, and specifications for Engineering Mechanics related work.

Was involved for 3 years in the Steam Generator Replacement Project for North Anna Unit 1. Resolved many Engineering Mechanics and Civil Engineering related issues during this period.

1975 - 1981 - Combustion Engineering

Involved in the analysis of NSSS supports and primary reactor coolant pipe whip restraints. Worked on primary reactor coolant cold pipe break analysis using dynamic analysis of gap structure non-linear computer code. Prepared and reviewed Class I stress reports for NSSS supports, such as reactor vessel, reactor coolant pump, steam generator, and pressurizer.

1973 - 1975 - Ebasco Services, Inc.

Lead Engineer - Concrete Hydraulics Division. Involved in the development of dynamic analysis mathematical model for nuclear power plant structures. Provided direction to 10 engineers in this project for the seismic analysis of structure and structural analysis. Worked on development of floor response spectras for Auxiliary Building floors.

Casaba G. Ranganath  
2721 Newquay Lane  
Richmond, VA 23236  
(804) 276-4937  
(Cont'd)

1963 - 1973

Engineer - Worked in architectural and engineering offices. Involved with the design of structural steel and concrete buildings for heavy-industrial, commercial, and public facilities. During this period, prepared structural calculations, drawings, and provided construction support.

**Education:** University of Mysore, India  
B.S., Physics, Chemistry and Mathematics, 1958

M.S. University of Baroda, India  
B.S., Civil Engineering, 1963

Polytechnic Institute of New York, N.Y.  
M.E., Civil Engineering, 1973

Completed additional 5 graduate courses in Civil engineering, 2 graduate courses in Business Administration and 2 courses in Computer Science.

**License:** Professional Engineer, New York, 1978  
Professional Engineer, Virginia, 1984

**Skills:**

- Involved with the seismic qualification of electrical and mechanical equipment and their supports.
- Developed mathematical model for the dynamic analysis of nuclear power plant building structures.
- Developed technical standards and specifications related to nuclear power plant pipe supports, equipment and raceway supports.
- Involved with the Civil Engineering and Engineering Mechanics issues during the steam generator replacement project.



# Certificate of Achievement

This is to Certify that

**Wasaha G. Rangarath**

has Completed the SQUG Workdown Screening  
and Seismic Evaluation Training Course  
held February 1-5, 1993



*Neil P. Smith*

Neil P. Smith, Commonwealth Edison  
SQUG Chairman

*David A. Freed*

David A. Freed, MPR Associates  
SQUG Training Coordinator

*Robert P. Kaszware*

Robert P. Kaszware, EPRI  
SQUG Program Manager



**MICHAEL W. SALMON****PROFESSIONAL HISTORY**

*EQE International, Inc.*, Irvine, California, Principal Engineer, 1991-present  
*ABB Impell Corporation*, Mission Viejo, California, Principal Engineer, 1987-1991  
*NTS/Structural Mechanics Associates*, Long Beach, California, Engineer, 1986-1987  
*University of Illinois*, Champaign-Urbana, Illinois, Research Assistant, 1985-1986  
*Bectel Power Corporation*, Norwalk, California, Intern, 1980-1985

**PROFESSIONAL EXPERIENCE***Seismic Margins Evaluations and Probabilistic Risk Assessments:*

- Los Alamos National Laboratory: Project manager and key technical contributor to the PHA (seismic) of the Plutonium Processing Facility (PF-4). Key technical contributor to the seismic margins evaluation of the Plutonium Processing Facility (PF-4).
- Idaho National Engineering Laboratory: Key technical contributor to the seismic vulnerability assessment of safety class systems and components at the Advanced Test Reactor (ATR).
- Savannah River Plant: Conducted seismic walkdowns, performed fragility evaluations and provided training for site personnel for DWPF fragilities project.
- Key technical contributor for seismic Individual Plant Examinations for External Events (IPEEE) at H.B. Robinson and North Anna nuclear power plants.

*Seismic Upgrade Design:*

- Los Alamos National Laboratory: Project manager and key technical contributor to the Chemistry and Metallurgy Research (CMR) Building Wing 9 Hot Cells Upgrade project, as well as the CMR Building Seismic/Tertiary Confinement Conceptual Design Report project.

*Blast Effects Evaluations*

- Nevada Test Site: Key technical contributor to the dynamic and thermal stress analysis of line of site vent closures subject to underground nuclear blast effects. Performed inelastic dynamic response of buried structures and tunnels subject to underground blast effects. Key contributor to development of a probabilistically based methodology for blast induced ground motion.

*Research Programs:*

- Developed a methodology to extend seismic experience based component capacities to probabilistic space.

MICHAEL W. SALMON

- Developed a methodology for estimating damage causing strong ground motion duration of earthquakes for use with seismic design and analysis.

#### *Teaching Assignments:*

- Instructor at "Department of Energy Training Course on SQUG/EPRF Walkdown Screening and Seismic Evaluation Material." Presented course modules on evaluation of tanks and heat exchangers, and meeting performance goals through the use of experience data. Walkdown instructor.
- Led the trial application of walkdown screening guidelines at the Los Alamos National Laboratory (PF-4, SM-66, PF-8), Argonne West National Laboratory (HFEP-N), and at Idaho National Laboratory (ICPP).

#### *Seismic Criteria Compliance Evaluations:*

- Savannah River Plant: Responsible for the evaluation of the structural design of the New Special Recovery Facility Building 221-F for compliance with Department of Energy (DOE) Order 6430.1A. This work was completed as part of the team formed to review the adequacy of SAR documentation in accordance with DOE Order 5481.1B for the New Special Recovery Facility. The results of the analysis were documented in a Safety Evaluation Report (SER). Additional responsibilities as the team member in charge of review for natural phenomena hazards included the evaluation of equipment anchorage, systems interactions, and seismic methodologies as compared with national design standards (UBC-1988, UCRL-15910).
- Idaho National Engineering Laboratory: Responsible for the evaluation of the structural design of the Process Experimental Pilot Plant (PREPP) facility for compliance with current DOE seismic design criteria (UCRL-15910). Responsibilities of this work included the review of dynamic analysis, review of preliminary seismic risk methodologies, and the review of equipment anchorage and systems interactions in the facility. The results of the review were documented in a technical report for members of EG&G, Idaho.

#### **EDUCATION**

UNIVERSITY OF ILLINOIS, Champaign-Urbana, IL: M.S. Civil and Structural Engineering, 1986  
 PURDUE UNIVERSITY, West Lafayette, IN: B.S. Civil and Structural Engineering, 1984, with Honors

#### **REGISTRATION AND AFFILIATIONS**

California: Professional Engineer  
 Tau Beta Pi  
 Member, ASCE, Dynamic Analysis Committee  
 Earthquake Engineering Research Institute  
 Seismological Society of America

### SELECTED PUBLICATIONS

EQE Engineering, "Walkdown of Los Alamos National Laboratory Plutonium Processing Facility (PF-4)," prepared for Los Alamos National Laboratory, NMT-8 and ESA-13, July, 1994.

EQE Engineering, "Walkdown Procedure for Seismic Adequacy Review of the PF-4 Facility," prepared for Los Alamos National Laboratory, NMT-8 and ESA-13, August, 1994.

EQE Engineering, "Systematic Identification of Seismic Hazards and Seismic Margins Evaluation of PF-4, Task 2: Selection of Components for Walkdown," prepared for Los Alamos National Laboratory, NMT-8 and ESA-13, August, 1994.

EQE Engineering, "Summary Report, Seismic and Wind Evaluation and Upgrade Concepts for CMR Building Tertiary Confinement, Volume 1: Soil Structure Interaction Effects," prepared for Los Alamos National Laboratory, ENG-3, Draft, August 5, 1994.

EQE Engineering, "Summary Report, Seismic and Wind Evaluation and Upgrade Concepts for CMR Building Tertiary Confinement, Volume 2: Fixed Base Structural Analysis and Development of Upgrade Concepts," prepared for Los Alamos National Laboratory, ENG-3, Draft, August 16, 1994.

Salmon, M.W., and R.P. Kennedy, "Meeting Performance Goals by the Use of Experience Data," Prepared for Lawrence Livermore National Laboratory, Fission Energy and Systems Safety Program, Livermore, California, March 8, 1994.

Eder, S.J., Eli, M.W., and Salmon, M.W., "Walkthrough Screening Evaluation Field Guide, Natural Phenomena Hazards and Department of Energy Facilities," UCRL-ID-115714, Rev. 2, Lawrence Livermore National Laboratory, Livermore, California, November, 1993.

Farrar, C.R., Reed, J.W., and M.W. Salmon, "Failure Modes of Low-Rise Shear Walls," American Society of Civil Engineers, Journal of Energy Engineering, Vol. 110, No. 2, August, 1993.

Salmon, M.W., and Kennedy, R.P., "Meeting Performance Goals by the Use of Experience Data," Proceedings Fourth DOE Natural Phenomena Hazards Mitigation Conference, Atlanta, Georgia, October, 1993.

Salmon, M.W., and S. Short, "Response Spectra," Phenomenal News, Natural Phenomenal Hazards Newsletter, Available from Office of Scientific and Technical Information, Oak Ridge, Tennessee, July 1993.

"Earthquake Magnitude Relationships," Prepared for Lawrence Livermore National Laboratory, Fission Energy and Systems Safety Program, Livermore, California, June, 1992.

Salmon, M.W., and Kulianoff, G.W., "Generation of Artificial Earthquake Time Histories for Seismic Design at Hanford, Washington," Proceedings Third DOE Natural Phenomena Hazards Mitigation Conference, St. Louis, Missouri, October, 1991.

Salmon, M.W., and S. A. Short, "Block Motion Research: Advancements in the Wave-Fault Interaction Method." Defense Nuclear Agency Report No. DNA 001-84-C-0426, Washington, D.C., November, 1987.

Salmon, M.W., and D. K. Nakaki, "Seismic Fragilities of Selected Structures and Components at the Three Mile Island Unit 2 Nuclear Power Plant." Report No. 1644. Prepared for GPU Nuclear Corporation. Long Beach, CA: NTS Engineering, November, 1987.

With D. A. Wesley, R. D. Campbell, G. S. Hardy, et al. June 1986. "Seismic Fragilities of Structures and Components at the Seabrook Generating Station, Units 1 and 2. Prepared for Public Service, New Hampshire, June, 1986.

Campbell, R.D., Maslenikov, O.R., and M.W. Salmon, "Thermal Stress Fatigue Analysis of Big Rock Point Emergency Condenser Outlet Nozzle." Prepared for Consumers Power, July, 1986.



# Certificate of Achievement

This is to Certify that

**Michael W. Salmon**

has Completed the SQUG Walkdown Screening  
and Seismic Evaluation Training Course  
Held January 15-20, 1993



David A. Freed, MPR Associates  
SQUG Training Coordinator

Neil P. Smith, Commonwealth Edison  
SQUG Chairman

Robert P. Kassawara, EPRI  
SQUG Program Manager

Scott Edward Zinkham  
12411 Stone Horse Court  
Glen Allen, VA 23060  
(804) 360-2371

**Objective:** To provide documentation and experience level for qualification as Seismic Capability Engineers for resolution of USI A-46 and IPEEE (seismic).

**Experience:** Virginia Electric & Power Company - Engineering Mechanics - 1981 - Present

Staff Engineer, 1993 - Present

Responsibilities included seismic walkdowns and evaluations associated with the USI A-46 and IPEEE efforts, seismic equipment qualifications, seismic analysis of buried piping systems, structural modifications and enhancements to mechanical and electrical equipment to meet seismic performance criteria. Provided technical support to North Anna and Surry in response to Operational Concerns and Seismic Procurement Questions.

Senior Engineer, 1989 - 1993

Design and seismic qualification of piping and pipe support systems, conduit and cable tray systems, and electrical and mechanical equipment. Provided pipe wall thinning evaluations and life projections on safety related piping systems.

Engineer, 1984 - 1989

Provided temporary support to North Anna nuclear power station 1987 - 1989, duties included seismic design of conduit and cable tray systems, structural modifications to equipment in support of Design Change Packages (DCP's), seismic qualification of electrical and mechanical equipment, valves, MOVs, etc. in accordance with IPEEE 344-1975 methods. Wrote and reviewed several standards on piping, pipe support and equipment qualification. Design piping supports, structural supports, equipment supports. Supported many DCP's which provided resolution to RG 1.97 and Appendix R issues.

Associate Engineer, 1981 - 1984

Responsible for modifications to piping and pipe support delay related systems. Supported work associated with IE Bulletin 79-14, 79-02, and Show Cause efforts. Wrote design criteria for seismic evaluation of piping supports, integrally welded attachments. Provided outage support for installation of DCP packages.

Scott Edward Zinkham  
12411 Stone Horse Court  
Glen Allen, VA 23060  
(804) 360-2371  
(Cont'd)

**Education:** University of Virginia  
Currently Completing M.E. Structural Engineering, Civil 1990 - Present

VPI&SU  
B.S. Mechanical Engineering, 1981

University of Richmond  
B.S. Biology, 1978

- Skills:**
- Structural evaluations using Finite Element programs: ANSYS, STAAD, GTSTRUDL, NUPIPE, STARDYNE.
  - Code seismic qualification of electrical and mechanical equipment using IEEE-344-1975 methodology.
  - Trained in IPEEE and USI A-46 as Seismic Capability Engineer.
  - 14+ years experience in seismic qualification of piping, pipe supports, equipment supports, mechanical and electrical equipment.
  - Working member on several PVRC committees since 1983, including Piping Dynamics, Reinforced Openings and External Loadings, and Piping, Pumps and Valves.
  - Training in basic nuclear systems and a working knowledge of systems from plant experience and analytical experience.

**License:** Professional Engineer, Virginia 1985



# Certificate of Achievement

This is to Certify that

**Scott E. Zinkham**

has Completed the SQUG Walkdown Screening  
and Seismic Evaluation Training Course  
Held June 22-26, 1992



A handwritten signature in cursive script.

Neil P. Smith, Commonwealth Edison  
SQUG Chairman

A handwritten signature in cursive script.

David A. Freed, MPR Associates  
SQUG Training Coordinator

A handwritten signature in cursive script.

Robert P. Kassawara, EPRI  
SQUG Program Manager

Keshab K. Dwivedy, Ph.D., P.E.  
11807 Crown Prince Circle  
Richmond, VA 23233  
(804) 740-0353

**Objective:** To provide documentation of education and experience level for qualification as Seismic Capability Engineers for resolution of USI A-46 and IPEEE (seismic).

**Experience:** 1984 - Present - Virginia Electric and Power Company  
System Engineer, Engineering Mechanics Group  
Mathematical modeling and computer aided stress analysis and analytical design of nuclear power plant components, equipment and structures: Review of specifications, standards, and regulatory issues: Plant design changes: Plant improvement and plant reliability studies.

1979 - 1984 - President, PDC, Inc., Charlotte, North Carolina  
Engineering analysis and design consultancy to Utilities: Supervising stress analysis and analytical design work: Marketing stress analysis and analytical design work: Running consulting engineering business. Accounting, financing, employee benefit, and pension: Developed and organized several short courses and training seminars in Universities and at Utility sites.

1979 - 1979 - Supervising Engineer - Burns & Roe, Inc., New Jersey  
Supervising stress analysis and analytical design work.

1975 - 1979 - Manager. Stress Analysis Group, Nuclear Power Services, New Jersey  
Mathematical modeling and computer aided stress analysis and analytical design of nuclear power plant components, equipment and structures: Review of specifications, standards, and regulatory issues: Development of computer codes: Planning, budgeting and scheduling of work: Supervising Stress Analysis work.

1972 - 1975 - Teaching & Research Assistant. Dept. of Mechanical Engineering, State University of New York, Stonybrook  
Teaching undergraduate courses on Structural Analysis and Model analysis: Graduate Studies and Research on Stress Wave Propagation.

1973 - 1973 - Adjunct Faculty. Dept. of Physics, State University of New York, Farmingdale  
Teaching Physics Laboratory classes.



**Keshab K. Dwivedy, Ph.D., P.E.**  
**11807 Crown Prince Circle**  
**Richmond, VA 23233**  
**(804) 740-0353**  
**(Cont'd)**

1968 - 1972 - Sr. Lecturer, Dept. of Applied Mechanics, Regional Engineering College, Rourkela, India  
Teaching Undergraduate and Graduate courses in Applied Mechanics, Strength of Materials, Elasticity and Vibration

1965 - 1968 Sr. Teaching Fellow, Indian Institute of Technology, Kharagpur  
Teaching, Research and Graduate Studies

**Education:** State University of New York, Stonybrook  
Ph.D., Engineering Mechanics, 1975

Indian Institute of Technology, Kharagpur  
M.E., Structural Engineering, 1968  
Best All Around Graduate Student, 1968

Indian Institute of Technology, Kharagpur  
B.S. with honors Civil Engineering, 1965

**License &** Professional Engineer, New York and Virginia  
**Professional** Member, American Society of Mechanical Engineers (ASME)  
**Affiliations** Member PVRC Committee on Dynamic Analysis and Testing



# Certificate of Achievement

This is to Certify that

**Beghab R. Bwivedy**

has Completed the SQUG Walkdown Screening  
and Seismic Evaluation Training Course  
held November 9-13, 1992



Neil P. Smith, Commonwealth Edison  
SQUG Chairman

Robert P. Kasaywa, EPRJ  
SQUG Program Manager

David A. Freed, MPR Associates  
SQUG Training Coordinator

*Neil P. Smith*

*David A. Freed*

*Robert P. Kasaywa*

**Plants for Which R.P. Kennedy  
Performed A-46 and/or IPEEE Seismic Peer Review**

Almaraz II, Spain  
Garonna, Spain  
Hatch  
Millstone 2  
Monticello  
Nine Mile Point 1  
Palisades  
V.C. Summer

**Dr. Robert P. Kennedy - Consultant**  
 18971 Villa Terrace  
 Yorba Linda, CA 92686  
 (714) 777-2163

### EDUCATION

B.S. - Civil Engineering, Stanford University  
 M.S. - Structural Engineering, Stanford University  
 Ph.D. - Structural Engineering, Stanford University

### REGISTRATION

Civil Engineer, States of California and Alabama

### SUMMARY

Over thirty years experience in static and dynamic analysis plus design of special purpose civil and mechanical-type structures, particularly for the nuclear, industrial, petroleum, and defense industries: design of structures to resist extreme loadings including seismic, missile impact, extreme wind, impulsive loads, and nuclear environmental effects; development of computerized structural analysis methods; administrative and program management; and teaching.

### PROFESSIONAL EXPERIENCE

#### Seismic Ruggedness - Nuclear Facilities

Chairman, Senior Seismic Review and Advisory Panel (SSRAP), jointly advising both nuclear power utilities and the U.S. NRC on issues relating to seismic ruggedness of existing nuclear power plants. Member of NRC Expert Panel on Seismic Margin for nuclear power plants. Co-author of Electric Power Research Institute (EPRI) Seismic Margin Methodology Report (EPRI-6041). Provided technical direction on seismic fragility portion of seismic probabilistic risk assessments and seismic margin evaluations for more than 30 nuclear power plants. Developed the methodology most commonly used for such studies and author of many technical papers thereon. Taught numerous short courses on seismic PRA methodology in U.S., Spain, Taiwan, and People's Republic of China. Consultant on seismic evaluation or design for more than 50 nuclear facilities throughout world. Directed seismic analysis of many nuclear power plant buildings and components. Directed many nonlinear seismic response analyses investigations. Evaluated effects of differential earth movement (faulting) on nuclear facility. Performed a number of dynamic soil-structure interaction analyses of nuclear reactor containment building accounting for the nonlinear effects of base slab uplift. Directed nonlinear seismic evaluation of nuclear facility to demonstrate increased seismic capacity. Evaluated concepts for seismic response mitigation and increased energy absorption. Chairman, ASCE committee on seismic analysis of nuclear facilities. Chairman, ASCE committee which wrote ASCE Standard 4-86 "Seismic Analysis of Safety Related Nuclear Structures".

#### Seismic Design - Pipeline, Tunnels, Tankage, and Industrial Facilities

Seismic consultant on Metropolitan Water District Inland Feeder, CPA tunnel project, and pipeline #6 feasibility studies for water pipelines and tunnels. Seismic consultant to Nuclear Waste

Repository Technical Review Board on seismic design of tunnels for nuclear waste repository. Seismic consultant to World Bank for repair of tunnels and pipelines after earthquake damage. Prime author of seismic design and evaluation standard for Department of Energy Facilities (i.e., DOE Std 1020 and UCRL -15910). Co-author of the seismic design criteria for the Alaska segment of the ANGTS Pipeline project (Alaskan natural gas pipeline). Consultant on the seismic design of compressor stations for the Yukon segment of ANGTS. In responsible charge of the development of all seismic design criteria for SOHIO West Coast/Mid-Continent Pipeline including belowground and aboveground large diameter pipe, pump stations, equipment, and tank farms plus large oil storage tanks. Developed design criteria and designs for pipeline crossings of active faults for several projects. In charge of the development of seismic design criteria for berthing structures at the Port of Long Beach. Conducted seismic analyses of trestle-supported pipeline at the Port of Long Beach. Conducted evaluation of past earthquake records to determine basis for selecting design ground acceleration for the Northwest Alaska gas pipeline project. Consultant on seismic analysis and design to Alyeska on the Alaskan Pipeline. Responsible for seismic and structural audit of offshore berthing structures for Alaskan Pipeline. Responsible for seismic evaluation of gathering lines at Prudhoe Bay. Performed seismic analyses for several pipeline systems including aboveground, buried and seabed configurations. Conducted seismic evaluations of pipeline river crossings, both aboveground and buried. Developed design criteria and seismic design calculations for large diameter water storage tanks in the Antelope Valley. Consultant on LNG storage tanks for seismic considerations including soil-structure interaction. Responsible for major seismic audit program of plutonium storage and handling facilities throughout the United States. Responsible for developing seismic design criteria including the design basis earthquake ground motion and structural response spectra for several large industrial and test facilities. Directed evaluation of site seismicity and establishment of seismic design criteria for major industrial and nuclear facilities as well as for several large diameter gas transmission pipelines, including the influence of traveling seismic waves. Former chairman, ASCE committee on seismic design of gas and liquid fuel lifelines. Member AWAA subgroup for seismic design of water storage tanks.

### Hardened Structures

Member, Defense Nuclear Agency Hardened Structures Experiments Review Panel. Consultant to DNA since 1980 on the design of tunnels to withstand ground motion. Consultant to DNA since 1971 on the design of structures and mechanical equipment subjected to high pressure, missile debris impact, temperature, and ground shock from underground nuclear detonations. Responsible since 1971 for the design of containment structures for DNA to contain the effects of underground nuclear explosions. Responsible for hardened structures portion of TRW preliminary design of SANGUINE system for U.S. Navy. Participated in conceptual design of hardened missile shelters. Developed the structural design basis for several COMSAT and Pacific T&T hardened communication facilities. Designed numerous shock mounting systems to protect equipment from effects of ground shock. Responsible for the design of many defense, nuclear facility, and heavy industrial facility structures to withstand the effects of explosive generated missiles and debris. Participated in design of hardened aircraft shelters to withstand effects of conventional explosions. Directed analytical and experimental program to develop methodology for predicting occurrence and magnitude of ground shock induced fault movement (block motion) in rock. Directed program to document the performance of minimally hardened tunnels during the passage of ground shock. Directed feasibility and cost study for the mining and support of large underground cavities up to 300 feet in span. Responsible for development of methods to predict peak dynamic response of

structures (both with and without shock mounting) close to surface zero above underground nuclear detonations.

### Other Dynamic Loads

Extensive experience in the analysis of nuclear and industrial facilities subjected to extreme dynamic loads including effects of blast, external missile and aircraft impact, and impulsive loading resulting from loss-of-coolant accident and SRV discharge. Consultant to NRC on blast resistant capacity of structures. Prime developer of the method currently in extensive use by the nuclear industry in the United States for evaluating the local effects of missile impact on concrete. Consultant on the effects of aircraft impact for several nuclear plants. Consultant to General Electric on effects of pool swell loads resulting from LOCA, and on the increased dynamic reserve margin available in structure subjected to pulsive loads. Consultant to G.E. and Mark I, Mark II, and Mark III Owner's Group on combination of responses from multiple dynamic loadings. Consultant on Mark II and Mark III evaluations to address the conservatism and uncertainty associated with standard structural analyses for SRV loadings. Consultant on methods of response combination and expert witness at Black Fox hearings. Consultant to Mark I and Mark III groups on conservatism, uncertainty, structural modeling, and load definition for new dynamic loads. Consultant on three Mark III BWR plants with free-standing steel containment, Leibstadt, Allens Creek, and River Bend, in order to evaluate realistic containment response to SRV loadings as prior approaches were over conservative and lead to serious design problems. Developed floor response spectra for final design of attached piping for Leibstadt plant by coupled analysis such that beneficial effects of energy feedback are included. Developed method to account for the coupling of equipment and piping to the main structure and to account for energy feedback from the subsystem to the structure. Developed method to account for random phasing of multiple harmonics of condensation oscillation loading in order to compute responses more compatible with measured results. Member ASCE committee on impact and impulse analysis of nuclear facilities, and ACI committee which developed code for the design of nuclear safety-related concrete structures subjected to impact and impulse loads.

Previous Special Assignments

Chairman, Seismic Analysis, Nuclear Structure and Materials Committee,  
Structures Division, ASCE.

Chairman, Seismic Analysis of Safety Class Structures Standard Committee,  
Technical Council on Codes and Standards, ASCE.

Chairman, Gas and Liquid Fuel Lifelines Committee,  
Technical Council on Lifeline Earthquake Engineering, ASCE.

Member, Nuclear Structures and Materials Technical and Administrative Committee,  
Structures Division, ASCE.

Member, Impact and Impulse Analysis, Nuclear Structures and Materials Committee,  
Structures Division, ASCE.

Member, Editing Board, ASCE Report entitled "Structural Analysis and Design of Nuclear Plant  
Facilities."

Member, Ad Hoc Group on Soil-Structure Interaction, Nuclear Structures and Materials  
Committee, Structures Division, ASCE.

Member, ACI 349, "Subcommittee on Standard Requirements for Nuclear Safety-Related  
Concrete Structures", Design Committee and Working Group 5 - "Impactive and Impulsive  
Loads".

Member, AWWA D100 Revision Task Force, charged with revising the AWWA Standard for  
Welded Steel Tanks for Water Storage.

Member, National Research Council Subcommittee on Probabilistic Seismic Hazard Assessment.

Awards

Member, National Academy of Engineering

Recipient, 1992 ASCE Stephen Bechtel Energy Engineering Award for seismic  
criteria development work for energy facilities

Attachment 2Dr. Robert P. KennedyDirectly Relevant Experience in Seismic  
PRA Fragility Development, Seismic Margin Reviews,  
and Seismic Walkdowns of Nuclear Power Plants

Since 1966, Dr. Kennedy has been engaged in the analysis and design of civil structures and mechanical equipment to resist earthquake effects. Dr. Kennedy was deeply involved in the development of much of the methodology used in conducting the seismic fragility evaluation portion of the probabilistic risk assessments (PRAs), and seismic margin reviews of nuclear power plants. He developed the two methods most commonly used to determine seismic High-Confidence-Low-Probability-of-Failure (HCLPF) capacities of structures, systems and components. In addition, Dr. Kennedy was Chairman of the Senior Seismic Review and Evaluation Panel which was instrumental in the development and obtaining NRC approval of the seismic walkdown methodology to demonstrate seismic ruggedness of existing equipment in nuclear power plants.

Dr. Kennedy had technical responsibility for the seismic fragility evaluation on essentially every Seismic PRA performed on nuclear power plants between 1978 and 1986 throughout the world. This includes all of the plants listed in Table 1 as having begun the seismic review prior to 1988 except Maine Yankee for which Dr. Kennedy was a consultant to the utility. In addition Dr. Kennedy either had technical responsibility (Limerick, Millstone 3 and Diablo Canyon), or was a consultant to the utility (Maine Yankee, Catawba, and Hatch) on all of the earlier Seismic Margin Reviews.

Since 1986, Dr. Kennedy has concentrated on writing methodology documents, teaching short courses, and consulting on Seismic PRA, Seismic Margin, and Seismic Walkdown Reviews of nuclear power plants in an effort to widen the number of practitioners and increase the technical knowledge of other engineers in this field. Table 1 also lists the nuclear power plants for which Dr. Kennedy has provided either consulting support or peer reviews for Seismic IPEEE PRA, and Margin Reviews and/or A-46 Seismic Walkdowns since 1988. This consulting has either been directly to the utility or to the consulting firm performing the work.

Table 2 lists the EPRI and NRC methodology documents on Seismic PRA Fragilities Development, Seismic Margin Reviews, and Seismic Walkdowns on which Dr. Kennedy was a prime author. Also listed in Table 2 are some of the relevant papers authored by Dr. Kennedy on these topics.

As a result of his efforts to develop and disseminate information on Seismic Fragility, Seismic Margin, and Seismic Walkdown Methodologies, Dr. Kennedy was elected a member of the National Academy of Engineering, and received the 1992 ASCE Stephen Bechtel Energy Award.



Table 1

List of Nuclear Power Plants on Which  
Dr. Kennedy has Performed Seismic PRA, Seismic  
Margin, or Seismic Walkdown Consulting  
(listed in chronological order)

<u>Begun Prior to 1988</u>	<u>Post 1988</u>	
Oyster Creek	Hatch	89-94
Zion	Saint Lucie	91-92
Indian Point 2	Turkey Point	92-93
Indian Point 3	Pilgrim	92-93
Lasalle	Limerick	93
Browns Ferry	Kewanee	93-94
Oconee	Fermi	93-94
Limerick	Connecticut Yankee	93
Susquehanna	Peachbottom	93-95
McGuire	Fort Calhoun	93
Seabrook	Point Beach	93-94
Shoreham	Washington Nuclear II	93-94
Millstone 3	Sequoyah	93-94
Beznau, Switzerland	San Onofree	93-95
Kuosheng, Taiwan	Cook	93
Midland	Paio Verde	93-94
Three Mile Island, Unit 1	GINNA	94
Catawba	Quad Cities	94
Big Rock Point	Byron	94
Maine Yankee	Zion	94
Yankee (Rowe)	Dresden	94
Diablo Canyon	Braidwood	94
Maanshan, Taiwan	Vandellos II, Spain	94
Sellafield, United Kingdom	Almarez II, Spain	94
	Prairie Island	94
	Millstone 2	94
	V.C. Summer	94
	North Anna	94
	Surrey	94
	Pickering 'A', Canada	95
	Garona, Spain	95
	Palisades	95
	Nine Mile Point 1	95
	Monticello	95

Table 2

Seismic IPEEE and Seismic Walkdown Methodology Development Publications  
on Which Dr. Kennedy was a Prime Author

Methodology Documents

1. "A Methodology for Assessment of Nuclear Power Plant Seismic Margin," EPRI NP-6041, Rev. 1, August 1991
2. "Methodology for Developing Seismic Fragilities," EPRI TR-103959, April 1994
3. "An Approach to the Quantification of Seismic Margins in Nuclear Power Plants," NUREG/CR-4334, August 1985
4. "Assessment of Seismic Margin Calculation Methods," NUREG/CR-5270, March 1989
5. "Use of Seismic Experience and Test Data to Show Ruggedness of Equipment in Nuclear Power Plants," Senior Seismic Review and Advisory Panel, SAND 92-0140, UC-523, Sandia National Laboratory, June 1992.

Relevant Papers

6. Kennedy, R.P., et al, "Probabilistic Seismic Safety Study of an Existing Nuclear Power Plant," Nuclear Engineering and Design, Vol. 59, No.2, August 1980
7. Kennedy, R.P. and M.K. Ravindra, "Seismic Fragilities for Nuclear Power Plant Risk Studies," Nuclear Engineering and Design, Vol. 79, No. 1, May 1984
8. Kennedy, R.P., "Various Types of Reported Seismic Margins and their Uses," Proceedings: EPRI/NRC Workshop on Nuclear Power Plant Reevaluations to Quantify Seismic Margins, NP-4101-SR, Oct. 1984
9. Kennedy, R.P., et al, "Dominant Contributors to Seismic Risk-An Appraisal," Proceedings: EPRI/NRC Workshop on Nuclear Power Plant Reevaluations to Quantify Seismic Margins, NP-4101-SR, Oct. 1984
10. Kennedy, R.P., and R.D. Campbell, "Comments on Seismic Fragility of Nuclear Power Plant Components," Proceedings of the Workshop on Seismic and Dynamic Fragility of Nuclear Power Plant Components, NUREG/CP-0070, August 1985
11. Kennedy, R.P., et al, "Overview of Seismic Margin Insights Gained from Seismic PRA Results," 6th International ANS/ENS Conference on Thermal Reactor Safety, Feb. 1986

12. Kennedy, R.P., "A Seismic Margin Assessment Procedure." Proceedings Symposium on Current Issues Related to Nuclear Power Plant Structures, Dec. 1986
13. Kennedy, R.P., Bimal E. Sarkar and Lloyd S. Cluff, "On Some Aspects of Seismic Fragility Evaluation for Diablo Canyon Seismic PRA," Nuclear Engineering and Design 123, North-Holland, 1990

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**Objective:** To provide documentation of education and experience level for qualification as Seismic Capability Engineers for resolution of USI A-46 and IPEEE (seismic).

**Experience:** 1968 - Present - Virginia Electric and Power Company

1994 - Present - NES Design Engineering & Support Department

1989 - 1994 - NES Civil/Mechanical Engineering Department

In November, 1989, work efforts of Engineering Mechanics group (14) were directed to nuclear operating plants only and responsibilities remained essentially the same as previous. In 1991 and 1992, emphasis of responsibilities broadened/increased towards seismic qualification/verification of mechanical and electrical equipment with implementation of program to resolve USI A-46 and IPEEE issues.

1987 - 1989 - E&C Civil Engineering Department

Supervisor Engineering Mechanics directing a staff of (16-20) engineering personnel responsible for pipe stress analysis, pipe support design, structural analysis and design, seismic qualification and similar activities associated primarily with piping systems and equipment supports in both nuclear and fossil operating plants.

1986 - 1987 Engineering and Construction Department. Temporary Assignment to Bath County Pumped Storage Project. Initial responsibilities involved ensuring timely completion of outstanding engineering design and documentation efforts. August 1, 1986 was assigned title of Acting Project Manager responsible for completion of all outstanding construction and other project-related activities required for total project completion and to effect an orderly transition from a construction project to support as an operating plant. This required managing a \$31M construction budget.

1985 - 1986. E&C Transmission and Distribution Engineering Department. Director - Distribution Engineering directing a staff of (12) engineers and support personnel responsible for developing, evaluating and specifying equipment and facilities used on Company distribution system. Section duties also involved the development and maintenance of Standard Construction Manual and Materials Catalog.

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(Cont'd)

1984 - 1985 - E&C Transmission and Distribution (T&D) Projects Department. Project Manager T&D lines responsible for total management of transmission line projects from turnover to completion. Duties involved reviewing and ensuring scheduled completion of such functions as surveying, real estate acquisition, permitting, engineering, material procurement, contract authority, and project construction.

1976 - 1984 - Power Station Engineering Department. Responsible for providing review, direction and coordination of the civil/structural design efforts of Architect/Engineers primarily on nuclear power stations as well as conventional fossil and hydro stations. Supported licensing efforts for nuclear units as required. In 1979, promoted to Supervisor, Civil Engineering responsible for developing and directing a staff of engineers in the design and analysis of structural and civil systems for modifications to existing power station facilities. Modifications involved new facilities as well as changes to existing facilities. Where required, seismic loadings were developed and considered in the design.

1970 - 1976 - Transmission and Distribution Engineering Department. Performed engineering design and analysis and was responsible for all related activities involved in the design of high voltage (69KV-500KV) transmission lines and supporting structures. Project engineer performing design function and coordinating all project activities for several transmission line projects concurrently.

1968 - 1970 - Transmission and Distribution Operations Department. Participated in the design, construction, installation, and operation of transmission, substation, and distribution facilities in an operating district.

**Education:** North Carolina State University  
B.S., Civil Engineering, 1968

VPI&SU  
M.E., Civil Engineering, 1982

**License & Professional Affiliations:** Professional Engineer, Virginia, 1973  
Member, American Society of Civil Engineers



# Certificate of Achievement

This is to Certify that

**Charles E. Sorrell**

has Completed the SQUG Walkdown Screening  
and Seismic Evaluation Training Course  
Held September 14-18, 1992



*Neil P. Smith*  
Neil P. Smith, Commonwealth Edison  
SQUG Chairman

*R.P. Kassara*  
Robert P. Kassara, EPRI  
SQUG Program Manager

*David A. Freed*  
David A. Freed, MPR Associates  
SQUG Training Coordinator