



PSE&G Public Service
Electric and Gas
Company

80 Park Plaza, Newark, NJ 07101 / 201 430-8217 MAILING ADDRESS / P.O. Box 570, Newark, NJ 07101

Robert L. Mittl General Manager
Nuclear Assurance and Regulation

February 1, 1985

Director of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
7920 Norfolk Avenue
Bethesda, Maryland 20814

Attention: Mr. Albert Schwencer, Chief
Licensing Branch 2
Division of Licensing

Gentlemen:

EQUIPMENT QUALIFICATION
HOPE CREEK GENERATING STATION
DOCKET NO. 50-354

In response to NRC request for additional information regarding equipment qualification (letter from A. Schwencer, NRC to R. L. Mittl, PSE&G, dated November 21, 1984), enclosed for your review is Public Service Electric and Gas Company's response to the following items:

<u>Enclosure</u>	<u>EQ Topic</u>
1	Dependability of containment isolation - containment purge and vent operability.
2	Performance testing of BWR safety/relief valves.
3	Environmental Qualification.

Please note, the response to Item No. 3 of Enclosure 2 will be provided by March 1, 1985.

Should you have any questions in this regard, please contact us.

Very truly yours,

ADD: R. WRIGHT, EQB
H. GALEY, EQB
G. BINGOLI, EQB
R. LABANDE, EQB
AOKS
1/1

8502050578 850201
PDR ADOCK 05000354
A PDR

JES:mr

The Attachment

Mr. Albert Schwencer

2

2/1/85

C D. H. Wagner
USNRC Licensing Project Manager (w/attach.)

A. R. Blough
USNRC Senior Resident Inspector (w/attach.)

NJ 7 1/2d

ENCLOSURE I
OPERABILITY QUALIFICATION OF
PURGE AND VENT VALVES

QUESTION NO. 1

For each purge and vent valve covered in the scope of this review, the following documentation demonstrating compliance with the "Guidelines for Demonstration of Operability of Purge and Vent Valves" is to be submitted for staff review:

- A. Dynamic Torque Coefficient Test Reports (Butterfly valves only) - including a description of the test setup.
- B. Operability Demonstration or In-situ Test Reports (when used).
- C. Stress Reports.
- D. Seismic Reports for Valve Assembly, (valve and operator) and associated parts.
- E. Sketch or description of each valve installation showing the following (Butterfly valves only):
 - 1. Direction of flow.
 - 2. Disc closure direction.
 - 3. Curved side of disc, upstream or downstream (asymmetric discs).
 - 4. Orientation and distance of elbows, tees, bends, etc., within twenty (20) pipe diameters of valve.
 - 5. Shaft orientation.
 - 6. Distance between valves.
- F. Demonstration that the maximum combined torque developed by the valve is below the actuator rating.

RESPONSE

The containment vent and purge valves are sealed closed and under administrative control during operational conditions 1, 2, and 3 as described in FSAR Section 6.2.5.2.2. The in-board purge valve in conjunction with the 2-inch bypass

RESPONSE (Cont'd)

valve in series are opened as required to vent thermal expansion of the air volume. The flow rate in this path is limited by the 2-inch globe valve and would be less than the normal purge flow of 9000 CFM even with accident pressure in the containment. This is discussed in FSAR Sections 1.14.1.71.2.6, 6.2.4.3.2.1, and 6.2.5.2.2.

The purge valves will be sealed closed during operational conditions 1, 2, and 3, therefore, the information requested concerning valve operability is not applicable. If it is determined in the future that these valves will be opened during operational conditions 1, 2, and 3, the requested information will be provided.

- A. No test was performed for Dynamic Torque Coefficient since the valves are only subjected to less than normal purge flow during an accident.
- B, C, D. The following information concerning the qualification of the purge and bypass valves is provided in responses to your request.

1. Air-operated 2-inch globe valves -

Assembly Numbers 1-KP-HV6056 and 1-KL-HV5175 to be retagged 1-GS-HV-4951, and 1-GS-HV-4963 respectively.

- a. Operability Test Report - 10855-P303(Q)A-270-2
 - b. Design Report - 10855-P303(Q)A-259-3
 - c. Seismic Report - 10855-P303A(Q)-267-2
2. Purge isolation valves 1-GS-HV-4964 (Item 1.1) and 1-GS-HV-4952 (Item 1.3).
- a. Operability Test Item 1.1 - 10855-P305(Q)-305-1
 - b. Operability Test Item 1.3 - 10855-P305(Q)-318-2

RESPONSE (Cont'd)

- c. Seismic Anal. - 10855-P305(Q)-248-4
Items 1.1 & 1.3
 - d. Seismic Qualif. - 10855-P305(Q)-317-2
Report Item 1.1
Actuator
 - e. Seismic Report - 10855-P305(Q)-315-2
Item 1.1 Opera.
 - f. Seismic Anal. Rpt. - 10855-P305(Q)-314-2
Item 1.3 Opera.
- E. 1. Piping isometric showing the valve arrangement
10855-1-P-GS-01Q, Revision 17.
- 2. Valve General - 10855-P305(Q)-50-15
Arrangement Item 1.1
 - 3. Valve General - 10855-P305(Q)-54-13
arrangement Item 1.3
- F. Operability test demonstrates that maximum combined
torque for the currently specified operating
conditions is below the actuator rating.

QUESTION NO. 2

The applicant should respond to the "Specific Valve Type Questions" (attached) which relate to his valve.

Specific Valve Type Questions

The following questions apply to specific valve types only and need to be answered only where applicable. If not applicable, state so.

A. Torque Due to Containment Backpressure Effect (TCB)

For those air operated valves located inside containment, is the operator design of a type that can be affected by the containment pressure rise (backpressure effect) i.e., where the containment pressure acts to reduce the operator torque capability

QUESTION NO. 2 (Cont'd)

due to TCB. Discuss the operator design with respect to the air vent and bleeds. Show how TCB was calculated (if applicable).

- B. Where air operated valve assemblies use accumulators as the fail-safe feature, describe the accumulator air system configuration and its operation. Discuss active electrical components in the accumulator system, and the basis used to determine their qualification for the environmental conditions experienced. Is this system seismically designed? How is the allowable leakage from the accumulators determined and monitored?
- C. For valve assemblies requiring a seal pressurization system (inflatable main seal), describe the air pressurization system configuration and operation including means used to determine that valve closure and seal pressurization have taken place. Discuss active electrical components in this system, and the basis used to determine their qualification for the environmental condition experienced. Is this system seismically designed?
- D. Where electric motor operators are used to close the valve has the minimum available voltage to the electric operator under both normal or emergency modes been determined and specified to the operator manufacturer to assure the adequacy of the operator to stroke the valve at accident conditions with these lower limit voltages available? Does this reduced voltage operation result in any significant change in stroke timing? Describe the emergency mode power source used.
- E. Where electric motor and air operator units are equipped with handwheels, does their design provide for automatic re-engagement of the motor operator following the handwheel mode of operation? If not, what steps are taken to preclude the possibility of the valve being left in the handwheel mode following some maintenance, test, etc. type operation?

QUESTION NO. 2 (Cont'd)

- F. For electric motor operated valves have the torques developed during operation been found to be less than torque limiting settings?

RESPONSESpecific Valve Type Questions

- A. Torque due to containment backpressure effect. Not applicable because valves are outside containment.
- B. The valves are fail closed and do not depend on air accumulators for fail-safe actuation.
- C. The valves do not depend upon an inflatable seal or seal pressurization system.
- D. The valves are air operated and fail closed so reduced voltage operation is not applicable.
- E. The air operated 2-inch valves have handwheels that must be manually disengaged. The air operated butterfly valves have a hydraulic pump system to manually open the valve. This must be manually disengaged for normal operation. Administrative control will be used to ensure that handwheels and hydraulic system are disengaged when the valves are returned to service.
- F. The valves are air operated, therefore, the torque information is not applicable.

QUESTION NO. 3

Analysis, if used, should be supported by tests which establish torque coefficients of the valve at various angles. As torque coefficients in butterfly valves are dependent on disc shape aspect ratio, angle of closure flow direction and approach flow, these things should be accurately represented during tests. Specifically, piping installations (upstream and downstream of the valve) during the test should be representative of actual field installations. For example, non-symmetric approach flow from an elbow upstream of a valve

QUESTION NO. 3 (Cont'd)

can result in fluid dynamic torques of double the magnitude of those found for a valve with straight piping upstream and downstream.

RESPONSE

The purge valves will be sealed closed during operational conditions 1, 2, and 3, therefore, the torque information for the butterfly valves is not applicable.

QUESTION NO. 4

In-situ tests, when performed on a representative valve, should be performed on a valve of each size/type which is determined to represent the worst case load. Worst case flow direction, for example, should be considered.

For two (2) valves in series where the second valve is a butterfly valve, the effect of non-symmetric flow from the first valve should be considered if the valves are within fifteen (15) pipe diameters of each other.

RESPONSE

The purge valves will be sealed closed during operational conditions 1, 2, and 3, therefore, the flow information is not applicable.

QUESTION NO. 5

If the applicant takes credit for closure time vs. the buildup of containment pressure, he must demonstrate that the method is conservative with respect to the actual valve closure rate. Actual valve closure rate is to be determined under both loaded and unloaded conditions and periodic inspection under tech. spec. requirements should be performed to assure closure rate does not increase with time or use.

RESPONSE

The valve closure was determined by static deflection tests. The valves are sealed closed during operational conditions 1, 2, and 3 except to vent the pressure change as discussed in FSAR Section 6.2.5.2.2. The valves are designed to close with the containment at the maximum accident pressure and flow limited by the maximum flow through the 2-inch bypass valve.

ENCLOSURE 2
REQUEST FOR ADDITIONAL INFORMATION BY
THE EQUIPMENT QUALIFICATION BRANCH
TMI ACTION II.D.1

Question #1

The test program utilized a "rams head" discharge pipe configuration. Most plants utilize a "tee" quencher configuration at the end of the discharge line. Describe the discharge pipe configuration used at your plant and compare the anticipated loads on valve internals in the plant configuration to the measured loads in the test program. Discuss the impact of any differences in loads on valve operability.

Response

The safety-relief valve discharge piping configuration at HCGS utilizes a "tee" quencher at the discharge pipe exit. The average length of the 14 SRV discharge lines (SRVDL) is 125 feet and the submergence length in the suppression pool ranges between approximately 7 to 10 feet depending on torus water level. The SRV test program utilized ramshead at the discharge pipe exit, a pipe length of 112 feet and a submergence length of approximately 13 feet. Loads on valve internals during the test program are larger than loads on valve internals in the HCGS configuration for the following reasons:

1. No dynamic mechanical load originating at the "tee" quencher is transmitted to the valve in the HCGS configuration because there is at least one anchor point between the valve and the tee quencher.
2. The first length of the segment of piping downstream of the SRV in the test facility was longer than the HCGS piping, thereby resulting in a bounding dynamic mechanical load on the valve in the test program due to the larger moment arm between the SRV and the first elbow. The first segment length in the test facility is 12 feet whereas this length is a maximum of 10 ft-2 in. with an average of approximately 3 ft-6 in. in the plant configuration.
3. Dynamic hydraulic loads (backpressure) are experienced by the valve internals in the HCGS configuration. The backpressure loads may be either (i) transient backpressures occurring during valve actuation, or (ii) steady-state backpressures occurring during steady-state flow following valve actuation.

Response (Cont'd)

The key parameters affecting the transient backpressures are the fluid pressure upstream of the valve, the valve opening time, the fluid inertia in the submerged SRVDL and the SRVDL air volume. Transient backpressures increase with higher upstream pressure, shorter valve opening times, greater line submergence, and smaller SRVDL air volume. The transient backpressure in the test program was maximized by utilizing a submergence of 13 feet, which is greater than HCGS and a pipe length of 112 feet which is less than HCGS. The maximum transient backpressure occurs with high pressure steam flow conditions. The transient backpressure for the alternate shutdown cooling mode of operation is always much less than the design for steam flow conditions because of the lower upstream pressure and the longer valve opening time.

Maximum S.S. Backpressure:

A1.1 - 441.6 PSIA
A1.2 - 476.6 PSIA
C3.1 - 490.3 PSIA
C3.2 - 489.4 PSIA

An additional consideration in the selection of the ramhead for the test facility was to allow more direct measurement of the thrust load in the final pipe segment. Utilization of a "tee" quencher in the test program would have required quencher supports that would unnecessarily obscure accurate measurement of the pipe thrust loads. For the reasons stated above, differences between the SRVDL configurations in HCGS and the test facility will not have any adverse effect on SRV operability at HCGS relative to the test facility.

Question #2

The test configuration utilized no spring hangers as pipe supports. Plant specific configurations do use spring hangers in conjunction with snubber and rigid supports. Describe the safety relief valve pipe supports used at your plant and compare the anticipated loads on valve internals for the plant pipe supports to the measured loads in the test program. Describe the impact of any differences in loads on valve operability.

Response

The HCGS safety-relief valve discharge lines (SRVDLs) are supported by a combination of snubbers, rigid supports, and spring hangers. These supports were designed to accommodate combinations of loads resulting from piping dead weight, thermal conditions, seismic and suppression pool hydrodynamic events, and a high pressure steam discharge transient. Additionally, each SRVDL at HCGS has only 2 to 4 spring hangers, all of which are located in the drywell.

The dynamic load effects on the piping and supports of the test facility due to the water discharge event (the alternate shutdown cooling mode) were found to be significantly lower than corresponding loads resulting from the high pressure steam discharge event. As stated in NEDE-24988-P, this finding is considered generic to all BWRs since the test facility was designed to be prototypical of the features pertinent to this issue.

During the water discharge transient there will be significantly lower dynamic loads acting on the snubbers and rigid supports than during the steam discharge transient. This will more than offset the small increase in the dead load on these supports due to the weight of the water during the alternate shutdown cooling mode of operation. Therefore, design adequacy of the snubbers and rigid supports is assured as they are designed for the larger steam discharge transient loads.

This question addresses the design adequacy of the spring hangers with respect to the increased dead load due to the weight of the water during the liquid discharge transient. As was discussed with respect to snubbers and rigid supports, the dynamic loads resulting from liquid discharge during the alternate shutdown cooling mode of operation are significantly lower than those from the high pressure steam discharge. The spring hangers have been reviewed for the deflections resulting from the steam discharge and found to be acceptable. In addition, the spring hangers have been evaluated for the increased dead load due to a water filled condition. Both the spring hangers and the piping stresses were acceptable. Furthermore, the effect of the water dead weight load does not affect the ability of the SRVs to open to establish the alternate shutdown cooling path since the loads occur in the SRVDL only after valve opening.

Question #3

The purpose of the test program was to determine valve performance under conditions anticipated to be encountered in the plants. Describe the events and anticipated conditions at the plant for which the valves are required to operate and compare these plant conditions to the conditions in the test program. Describe the plant features assumed in the event evaluations used to scope the test program and compare them to the features at your plant. For example, describe high level trips to prevent water from entering the steam lines under high pressure operating conditions as assumed in the test event and compare them to trips used at your plant.

Response

The information requested above will be provided by March 1, 1985.

Question #4

Describe how the values of valve C_v 's in report NEDE-24988-P will be used at your plant. Show that the methodology used in the test program to determine the valve C_v will be consistent with the application at your plant.

Response

The flow coefficient, C_v , for the Target-Rock 2-stage safety relief valve (SRV) utilized in HCGS was determined in the generic SRV test program (NEDE-24988-P). The average flow coefficient calculated from the test results for the Target-Rock 2 stage valve, is reported in Table 5.2-1 of NEDE-24988-P. This test value has been used by Public Service Electric and Gas Company to confirm that the liquid discharge flow capacity of the HCGS SRVs will be sufficient to remove core decay heat when injecting into the reactor pressure vessel (RPV) in the alternate shutdown cooling mode. The C_v value determined in the SRV test demonstrates that the HCGS SRVs are capable of returning the flow injected by the RHR or CS pump to the suppression pool.

If it were necessary for the operator to place the HCGS plant in the alternate shutdown cooling mode, he would assure that adequate core cooling was being provided by monitoring the following parameters: RHR or CS flow rate, reactor vessel pressure and reactor vessel temperature.

Response (Cont'd)

The flow coefficient for the Target-Rock 2-stage valve reported in NEDE-24988-P was determined from the SRV flow rate when the valve inlet was pressurized to approximately 250 psig. The valve flow rate was measured with the supply line flow venturi upstream of the steam chest. The C_v for the valve was calculated using the nominal measured pressure differential between the valve inlet (steam chest) and 3 ft downstream of the valve and the corresponding measured flowrate. Furthermore, the test conditions and test configuration were representative of the HCGS plant conditions for the alternate shutdown cooling mode, e.g., pressure upstream of the valve, fluid temperature, friction losses and liquid flowrate. Therefore, the reported C_v values are appropriate for application to the HCGS plant.

ENCLOSURE 3

REQUEST FOR ADDITIONAL INFORMATION
HOPE CREEK GENERATING STATION
ENVIRONMENTAL QUALIFICATION PROGRAM

Question #1.

"Item 12, of FSAR Table 3.11-3, states that spray impingement will be evaluated to determine if testing under spray conditions in addition to 100 percent relative humidity conditions is required. It should be noted that 100 percent humidity test is not an acceptable alternative to spray testing. Provide a list of equipment which are subjected to spray but are not qualified by subjecting them to the spray. The list should include the justification for all such components to describe why it is not necessary to subject these equipment to spray conditions."

Response:

No equipment is currently identified as requiring spray qualification. The final field walkdown for hazards analysis verification will identify any exposed equipment. Any such equipment will be protected, unless it is already qualified for direct water spray.

Question #2.

"Item 14, FSAR Table 3.11-3, states that aging is included -- except where equipment is not considered to be age sensitive. Confirm that you have included aging during the qualification testing for all equipment which are qualified to category I requirements, and have considered aging and established qualified life for all equipment qualified to category II requirements."

Response:

Section 3.11.2.7.2 of the FSAR describes the overall approach to aging. Equipment qualified to category I includes aging. There is currently no equipment which is expected to be qualified in category II. If category II is used, the qualification will consider aging and will establish a qualified life. If equipment was determined by analysis to be insensitive to aging mechanism, it was not necessary to age it.

Question #3.

"Item 15, FSAR Table 3.11-3, states that equipment that could be submerged have been identified and demonstrated to be qualified by test for the duration required. Provide a list of all the equipment which could be submerged along with the identification for the equipment which are qualified by test and the ones which are exempted from the qualification. Provide the basis for exempting individual equipment from submergence qualification. Also, discuss the qualification method used to qualify the equipment for submergence."

Response:

A list of submerged equipment is shown on Attachment 1. Any other equipment potentially subjected to flooding will be identified during the field hazard analysis walkdown.

The Rotork Class 1E motor-operated valves have been qualified by testing for submergence since they are required to operate in response to the event which causes them to be submerged. The method of submergence qualification is described as follows.

The Rotork Class 1E motor-operated valve was successfully demonstrated to function during and following complete submersion at a pressure of 70 psig which was decreased over a 26 day period to 15 psig.

These test conditions exceeded the actual Hope Creek requirement for submergence to a depth of about 19 feet of water.

All other equipment which may be submerged is not qualified by test because it performs no safety function during the events which cause submergence. These devices are provided with Class 1E primary and backup protective devices which are located in a hazard-free area.

This design provides assurance that failure of a device due to submergence, coupled with the worst case single failure will not affect safe shutdown.

Question #4.

"Provide a discussion on how the normal/abnormal environmental condition (temperature) has been used in aging consideration."

Response:

Normal and abnormal temperature aging factors have been considered to place the equipment in an end-of-life condition prior to qualification at DBE conditions. The normal environment factor and the abnormal environment factor are combined to determine an accelerated aging temperature. This method uses Arrhenius techniques.

Question #5.

"Provide the temperature and radiation dose limit used to distinguish between the harsh and mild environmental zone."

Response:

The harsh environment zones are those in which the abnormal or DBE values of temperature or radiation exceed 120°F and 1×10^3 RADS, respectively.

Question #6.

"Page VI-1 of Reference 2 lists the DBAs causing the worst case harsh environmental condition. However, the list does not include fuel handling accidents which may result in a higher radiation dose for some equipment. Provide the reason for not including this accident into the list of DBAs considered."

Response:

The fuel handling accident event is considered as one of the DBA's. The EQ Summary Report will be revised to clarify this item.

Question #7.

"Reference 2, page VII-8, item 5, states that exception to qualification is taken in those cases where safety function can be accomplished by some other designated equipment that has been adequately qualified and satisfies the single failure criterion. Provide a list of all such equipment which have been exempted from qualification based on this criterion and explain how it affects the defense in depth concept (redundancy and diversity)."

Response:

All equipment is qualified to perform its intended safety function during events which require the operation of the equipment. In some cases, equipment may be exposed to environmental conditions during events which do not require the equipment to operate, and for which the equipment is not qualified. In these cases, the equipment is protected by redundant, qualified devices which are not subject to the same hazard. This design does not affect the concepts of redundancy and diversity since the isolated equipment in these cases is permitted to fail with no resultant effect on the safety function.

This equipment is identified on revised FSAR Table 3.11-6 which will be submitted as an FSAR change and is shown on Attachment 4.

Question #8.

"Reference 2, page VIII-3, GE/HCGS Response to Item 4, does not define the acceptable time margin for the equipment which do not have the one hour required time margin. Provide the minimum time margin accepted by you and the basis for your acceptance."

Response:

A standard minimum time margin for equipment which does not have a one-hour margin has not been established. The actual time margins are based upon individual component's "Time-to-Completion" of its safety function and the time at which a harsh environment is experienced by the equipment. All cases of this type are analyzed and shown on the Equipment Evaluation Summary Sheets.

Question #9.

"Regarding Reference 2, note 2 on figures 2, 4, and 8 should be clarified to explain the reasons for not establishing harsh environment for these rooms."

Response:

The following information clarifies Note 2 shown on figures 2, 4, and 8 of the summary report.

Figure 2

Note 2 is incorrect. Room 4220 and 4221 are within the drywell and experience the drywell environment

Figure 4

Rooms 4418 and 4419 are not identified separately because they are part of Room 4416 which has a mild environment.

Figure 8

Note 2 is incorrect. Room 4703 has the same environment as Room 4710.

The next revision of the EQ Summary Report will clarify the room environments described above.

Question #10.

"Conform that you have not utilized thermal equivalence analysis to qualify some equipment at HCGS. If you have, then confirm that you have utilized the method identified in NUREG-0588. Provide one example with the bases and criteria used in the thermal equivalence analysis."

Response:

Thermal equivalence analysis has not been used to qualify Hope Creek equipment. The method of NUREG-0588, Appendix C was used to determine the Hope Creek containment conditions.

Question #11.

"Confirm that all category I and II equipment per Reg. Guide 1.97 which are located in a harsh environment are included in your environmental qualification program."

Response:

The PSE&G commitment to Reg. Guide 1.97 is contained in the HCGS FSAR Section 1.8.1.97. The category I and II equipment located in a harsh environment is included in the E.O. program. Justification of differences between Reg. Guide 1.97 recommended variables and Hope Creek specific instruments is also provided in FSAR Section 1.8.1.97.

Question #12.

"Your response to the staff's request for additional information item 270.2b does not completely address the staff's concern. Justification should be provided for each system individually which is identified as safety related in FSAR Table 3.2-1 and is not included in your EQ program."

Response:

Justification of all items in FSAR Table 3.2-1 (Amendment 8) which do not appear in Tables 3.11-5 or 3.11-6, is contained in the proposed Table 3.11-8 which will be submitted as an FSAR change and is shown on Attachment 2.

Question #13.

"Radiation environment for HCGS is low compared to similar plant. Provide the basis, assumption and a sample calculation to determine the acceptability of the radiation environment for HCGS. Also, if credit is taken for any equipment because of the location of the equipment in a room, a sample calculation with the basis and assumption should also be provided."

Response:

The radiation environment for HCGS is not low compared with other similar plants. The FSAR tables list only the shine contribution due to equipment operation. Notes on the FSAR

tables identify the airborne cloud contributions which must be added to the table values to obtain the total dose. The summed doses are comparable to other plants.

Question #14.

"FSAR Table 3.11-4 lists mechanical equipment required for harsh environment qualification. This table should be expanded to include individual tag numbers with functional description, manufacturer, model numbers, and location for individual equipment."

Response:

FSAR Table 3.11-4 has been expanded to include the required information and is shown on Attachment 3. The proposed revision will be submitted as an FSAR change.

Question #15.

"Confirm that you plan to add the qualification status with the identification as to which category (I or II per NUREG-0588) it was qualified to. In addition to this, maintenance/replacement schedules to maintain the qualified life should also be identified."

Response:

An identification of qualification status (i.e. NUREG-0588 category I or II) will be included on the Equipment Evaluation Summary Sheets (EESS) which will be available in April 1985. The EESS will also identify any required maintenance/replacement schedule information.

ENCLOSURE 3

Attachment 11E Equipment Subject to Submergence

<u>Tag Number</u>	<u>Description</u>	<u>Qualified</u>	<u>Exempt</u>
1-SK-TE-NO16	Temperature Elements		X
1-SK-TE-NO12A	Temperature Elements		X
1-SK-TE-NO12C	Temperature Elements		X
1-SK-TE-NO10A	Temperature Elements		X
1-SK-TE-NO10B	Temperature Elements		X
1-SK-TE-NO10C	Temperature Elements		X
1-SK-TE-NO10D	Temperature Elements		X
1-SK-TE-NO12B	Temperature Elements		X
1-SK-TE-NO12D	Temperature Elements		X
1-GU-TE-9428-1	Temperature Elements		X
1-GU-TE-9428-2	Temperature Elements		X
1-AE-HV-F039	Motor Operated Valves		X
1-AB-HV-F071	Motor Operated Valves		X
1-KP-HV-5829A,B	Motor Operated Valves		X
1-KP-HV-5834A,B	Motor Operated Valves		X
1-KP-HV-5835A,B	Motor Operated Valves		X
1-KP-HV-5836A,B	Motor Operated Valves		X
1-KP-HV-5837A,B	Motor Operated Valves		X
1-BJ-HV-8278	Motor Operated Valves		X
1-AB-HV-F067A	Motor Operated Valves	X	
1-AB-HV-F067B	Motor Operated Valves	X	
1-AB-HV-F067C	Motor Operated Valves	X	
1-AB-HV-F067D	Motor Operated Valves	X	

ENCLOSURE 3

ATTACHMENT 2

PROPOSED FSAR TABLE 3.11-8

HCGS FSAR
TABLE 3.11-8

SYSTEMS FROM HCGS FSAR TABLE 3.2-1 NOT INCLUDED IN TABLE 3.11-5 OR 3.11-6

<u>DESCRIPTION</u>	<u>REF. TO TABLE 3.2-1</u>	<u>REASON</u>
1. Reactor System	I	Mechanical
2. Fuel Handling and Storage System	VIII	Mechanical
3. Fuel Servicing Equipment	VIII (a)	Mechanical
3.1 Fuel Preparation Machines	VIII (a) 3.	NON-1E
4. Reactor Vessel Servicing Equipment	VIII (b)	Mechanical
4.1 Reactor Bldg. Polar Crane	VIII (b) 4.	NON-1E
5. In-Vessel Service Equipment	VIII (c)	Mechanical
6. Refueling Equipment	VIII (d)	Mechanical
7. Storage Equipment	VIII (e)	Mechanical
8. Undervessel Service Equipment	VIII (f)	Mechanical
9. Fuel Oil Storage and Transfer System	XII (a)	Mechanical
10. Lubricant System	XII (e)	Mechanical
10.1 Heater	XII (e) 5.	NON-1E
10.2 Pump, Motor Driven Prelube Keepwarm	XII (e) 7.	NON-1E
10.3 Motors, Prelube/Keepwarm & Prelube Pumps	XII (e) 11.	NON-1E
11. Starting and Control Air System	XII (f)	Mechanical
12. Cooling Water System	XII (g)	Mechanical
13. Combustion Air Intake and Exhaust System	XII (h)	Mechanical
14. Main Steam and Power Conversion System	XIV	Mechanical
15. Main Steam Supply System	XIV (a)	Mechanical
16. Main Condenser Evacuation System	XIV (b)	Mechanical
17. Feedwater and Condensate System	XIV (c)	Mechanical
18. Condensate Cleanup System	XIV (d)	Mechanical
19. Circulating Water System	XIV (e)	Mechanical
20. Steam Seal System	XIV (f)	Mechanical
21. Lube Oil System	XIV (g)	Mechanical
21.1 Motors	XIV (g) 3.	Non-1E
22. Gen. H ₂ and CO ₂ Purge System	XIV (h)	Mechanical
23. Buildings	XVIII	Mechanical
24. Primary Containment	XVIII (a)	Mechanical
25. Auxiliary Building (Diesel Area)	XVIII (b)	Mechanical
26. Auxiliary Building (Containment Area)	XVIII (c)	Mechanical

HCGS FSAR
TABLE 3.11-8 (Cont'd)
SYSTEMS FROM HCGS FSAR TABLE 3.2-1 NOT INCLUDED IN TABLE 3.11-5 OR 3.11-6

<u>DESCRIPTION</u>	<u>REF. TO TABLE 3.2-1</u>	<u>REASON</u>
27. Auxiliary Building (Radwaste Area)	XVIII (d)	Mechanical
28. Turbine Building	XVIII (e)	Mechanical
29. Administration Facility	XVIII (f)	Mechanical
30. Circ. Water Pump House	XVIII (g)	Mechanical
31. Reactor Building, Including Pressure- Retaining Door	XVIII (h)	Mechanical
32. Plant Cancelled Area	XVIII (i)	Mechanical
33. Structures	XIX	Mechanical
34. Station Service Water Intake Structure	XIX (a)	Mechanical
35. Condensate Storage Tank	XIX (b)	Mechanical
36. Diesel Gen. Fuel Tank Room	XIX (c)	Mechanical
37. Station Battery Rooms	XIX (d)	Mechanical
38. Spent Fuel Pool, Reactor Well, New Fuel Vault, Dryer, Separator Pool and Tank Cask Pit	XIX (e)	Mechanical
39. Circulating Water Structures	XIX (f)	Mechanical
40. Unit Vent, North and South	XIX (g)	Mechanical
41. Condensate Storage Tank Dike	XIX (h)	Mechanical
42. Spent Fuel Pool Liner	XIX (i)	Mechanical
43. Skimmer Surge Tank	XIX (j)	Mechanical
44. Missile/Jet Barriers	XIX (k)	Mechanical
45. Structural Backfill	XIX (l)	Mechanical
46. Post-Accident Shielding	XIX (m)	Mechanical
47. Seismic Category I, Electrical Duct Bank; Manholes	XIX (n)	Mechanical
48. Nitrogen System	V (d3)	NON-IE
49. Primary Containment Leakage Rate Testing System	V (e)	NON-IE
50. Gaseous Radwaste System	X (b)	NON-IE
51. Turbine Auxiliary Cooling System	XI (d)	NON-IE
52. Portable and Sanitary Water System	XI (h)	NON-IE
53. Primary Containment Ventilating System	XIII (b)	NON-IE
54. Auxiliary Building Serv. and Radwaste Area Ventilating System	XIII (d)	NON-IE

HCGS FSAR
TABLE 3.11-8 (Cont'd)
SYSTEMS FROM HCGS FSAR TABLE 3.2-1 NOT INCLUDED IN TABLE 3.11-5 OR 3.11-6

<u>DESCRIPTION</u>	<u>REF. TO TABLE 3.2-1</u>	<u>REASON</u>
55. Turbine Building Ventilation System	XIII (f)	NON-IE
56. Miscellaneous Structures Ventilating System	XIII (h)	NON-IE
57. Turbine Bypass System	XIV (i)	NON-IE
58. Safety-Related Display Instrumentation	XV (d)	NON-IE/Mild
59. Control & Instrumentation for Systems Not Required for Safety	XV (f)	NON-IE
60. Process Sampling System	XVII (c)	NON-IE
61. Fire Protection System	XVII (e)	NON-IE
62. Auxiliary Boiler System	XVII (f)	NON-IE
63. Equipment and Floor Drain System	XVII (g)	NON-IE
64. Breathing Air	XVII (i)	NON-IE
65. Lighting System	XVII (j)	NON-IE
66. Auxiliary Building Control Area Chilled Water System	XI (g)	Mild
67. Standby Diesel Generator and Auxiliary System	XII	Mild
68. Diesel Generator	XII (b)	Mild
69. Electrical Modules with Safety Functions	XII (c)	Mild
70. Cable with Safety Function	XII (d)	Mild
71. Main Control Room and Control Building HVAC System	XIII (a)	Mild
72. Standby Diesel Gen. Area Ventilation System	XIII (e)	Mild
73. Serv. Water Intake Structure Ventilating System	XIII (g)	Mild
74. Reactor Trip System (Reactor Protection System)	XIV (a)	Mild
75. Control Complex Panels	XV (g)	Mild
76. Local Panels and Racks	XV (h)	Mild
77. 120-V Vital AC System Equipment	XVI (c)	Mild
78. 125V, and 250V Station Batteries and Racks	XVI (b)	Mild

ENCLOSURE 3

ATTACHMENT 3

PROPOSED FSAR TABLE 3.11-4

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

P.O. # M001 Component: Safety Relief Valves (B21-F013)

Manufacturer: Target Rock Corp.

PAGE 1 OF 88
SHEET 1 of 1

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u> (Typical for all Valves on this Sheet)	<u>Location</u>
1SN PSV F013A	7567F Gen'l. Config. (7567F-010-10)	Dual function safety and relief valves: self actuating at the spring safety set pressure (safety mode) and permit remote manual or automatic relief opening at pressure below the set point with the electro-pneumatic actuator.	Reactor Bldg. EL 121'
1SN PSV F013B	7567F Gen'l. Config. (7567F-010-10)		Reactor Bldg. EL 121'
1SN PSV F013C	7567F Gen'l. Config. (7567F-010-10)	<u>Safety Functions:</u>	Reactor Bldg. EL 121'
1SN PSV F013D	7567F Gen'l. Config. (7567F-010-10)	To open to its ASME rated capacity position, as a minimum, and permit depressurization of the reactor pressure vessel to provide:	Reactor Bldg. EL 121'
1SN PSV F013E	7567F Gen'l. Config. (7567F-010-10)	1. Operation of the valve at a vessel pressure at or above the valve's (inlet pressure) spring safety set point (safety mode) to provide overpressure protection.	Reactor Bldg. EL 121'
1AB PSV F013F	7567F Gen'l. Config. (7567F-010-10)	2. A manual means of relieving steam generated by core decay heat to the suppression pool in the event that the main condenser is not available as a heat sink after reactor shutdown and until the RHR steam condensing mode of operation is initiated (relief mode).	Reactor Bldg. EL 121'
1AB PSV F013G	7567F Gen'l. Config. (7567F-010-10)		Reactor Bldg. EL 121'
1AB PSV F013H	7567F Gen'l. Config. (7567F-010-10)	3. Automatic depressurization (ADS) of the reactor pressure vessel under an assumed loss-of-coolant condition (relief mode).	Reactor Bldg. EL 121'
1AB PSV F013J	7567F Gen'l. Config. (7567F-010-10)		Reactor Bldg. EL 121'
1AB PSV F013K	7567F Gen'l. Config. (7567F-010-10)	4. An alternate means to cool and shutdown the reactor by passing water from the reactor to the suppression pool in the unlikely event that the RHR shutdown suction line is not available to transmit water from the reactor to the RHR heat exchanger while the RHR/LPCI pumps are injecting water into the reactor (relief mode).	Reactor Bldg. EL 121'
1AB PSV F013L	7567F Gen'l. Config. (7567F-010-10)		Reactor Bldg. EL 121'
1AB PSV F013M	7567F Gen'l. Config. (7567F-010-10)		Reactor Bldg. EL 121'
1AB PSV F013P	7567F Gen'l. Config. (7567F-010-10)		Reactor Bldg. EL 121'
1AB PSV F013R	7567F Gen'l. Config. (7567F-010-10)		Reactor Bldg. EL 121'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 2 OF 88
SHEET 1 of 1

P.O. # M001 Component: Main Steam Isolation Valves
(B21-F-22/F028)

Manufacturer: Atwood & Morrill Co.

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1AB HV F022A	21362H	Inboard: (Typical) (of 4)	Reactor Bldg. EL 102'
1AB HV F022B	21362H	To remain open throughout the normal plant operation. In case of small line break accident, the operator may keep the MSIV's open to utilize the main condenser. In case of a BDE, the MSIV's will be closed within the <u>first hour</u> of the accident and maintained in the closed position throughout the post-accident period. The MSIV's are to limit the leakage through the valve seat. The MSIV's are equipped with limit switches to provide safety signals to the reactor protection system.	Reactor Bldg. EL 102'
1AB HV F022C	21362H		Reactor Bldg. EL 102'
1AB HV F022D	21362H		Reactor Bldg. EL 102'
1AB HV F028A	21362H		Outboard: (Typical) (of 4)
1AB HV F028B	21362H	To remain open throughout the normal plant operation. In case of small line break accident, the operator may keep the MSIV's open to utilize the main condenser. In case of a BDE, the MSIV's will be closed within the <u>first hour</u> of the accident and maintained in the closed position throughout the post-accident period. The MSIV's are to limit the leakage through the valve seat. The MSIV's are equipped with limit switches to provide safety signals to the reactor protection system.	Reactor Bldg. EL 102'
1AB HV F028C	21362H		Reactor Bldg. EL 102'
1AB HV F028D	21362H		Reactor Bldg. EL 102'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

P.O. # M001 Component: Recirculation Pumps (B31-C001)

Manufacturer: Byron Jackson Pump Co.

PAGE 3 OF 88
SHEET 1 of 1

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1BB AP 201	28X28X35EVSS	To provide flow to the jet pump which provides forced coolant flow through the Reactor Core.	Reactor Bldg. EL 077' (Drywell)
1BB BP 201	28X28X35EVSS		Reactor Bldg. EL 077' (Drywell)

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

P.O. # M001 Component: Recirculation System Valves
(B31-F023/F031)

Manufacturer: Lunkenheimer

PAGE 4 OF 88
SHEET 1 of 1

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1BB HV F023A	D-12925	Suction: *	Reactor Bldg. EL 077'
1BB HV F023B	D-12925	Suction: *	Reactor Bldg. EL 077'
1BB HV F031A	D-12926	Discharge: *	Reactor Bldg. EL 100'
1BB HV F031B	D-12926	Discharge: *	Reactor Bldg. EL 100'

*The recirculation block valves stay opened throughout the normal plant operation. They are close only for recirculation pump maintenance. After a confirmed ATWS, it is desirable that one of the block valves stay operable. The valve will be closed to route the shutdown cooling water to the jet pump inlet, but this is not a safety function. These valves have no active safety function they shall maintain pressure integrity of the reactor coolant boundary.

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

P.O. # M001 Component: CRD Hydraulic Control Units
C11-D001

Manufacturer: General Electric Co.

PAGE 5 OF 88
SHEET 1 of 1

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1BF OU 202 (Typical for 185) (Units.) (Each HCU is identified by the appropriate control rod, which has been assigned a coordinate number that defines the location of the rod within the core. All coordinate numbers consist of four digits: Two for row and two for column. Rows are assigned odd numbers and columns assigned even numbers)	761E500G007	Modular assembly of Control Rod Drive directional Control Valve, Scram Valve, and accumulator.	Reactor Bldg. EL 102'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

P.O. # M001 Component: CRD Vent Valves and Drain Valves Manufacturer: Hammel Dehl
C11-F010/F180/F011/F/181

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1 BF HV F010	522FRR62HA29	Inboard: *	Reactor Bldg. EL 102'
1 BF HV F180	522FRR62HA29	Outboard: *	Reactor Bldg. EL 102'
1 BF HV F011	522JRR62HA29	Inboard: *	Reactor Bldg. EL 102'
1 BF HV F011A	522JRR62HA29	Inboard: *	Reactor Bldg. EL 077'
1 BF HV F181A	522JRR62HA29	Outboard: *	Reactor Bldg. EL 077'

*Air operated globe valves utilized to facilitate proper venting and draining of the SDV header, except during scram when the valves are closed to conserve reactor water.

The valves are required to operate and isolate the SDV vent and drain lines within 12 hours after a small break accident (SBA) occurs and remain closed for the post accident duration. After a LOCA, the valves may be delayed up to 40 seconds prior to required operation.

TABLE 3.11-4
 MECHANICAL EQUIPMENT SELECTED FOR HARSH
 ENVIRONMENT QUALIFICATION

P.O. # M001 Component: Standby Liquid Control Pumps
(C41-C001)

Manufacturer: Union Pump Co.

PAGE 7 OF 88
 SHEET 1 of 1

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1 BH AP 208	2X3,TD-60 Triplex	To pump a neutron absorber solution (sodium pentaborate) from the system storage tank into the reactor vessel.	Reactor Bldg. EL 162'
1 BH BP 208	2X3,TD-60 Triplex	Provides all independent backup capability to shutdown the reactor and keep it subcritical as it cools.	Reactor Bldg. EL 162'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

P.O. # M001 Component: RHR Heat Exchanger (E11-B001)

Manufacturer: Delta Southern Co.

PAGE 8 OF 88
SHEET 1 of 1

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1 BC AE 205	<u>Δ</u> EU	The functions of the RHR Heat Exchanger, depending on operating mode are:	Reactor Bldg. EL 054'
1 BC BE 205	<u>Δ</u> EU	<ol style="list-style-type: none"> 1. Provides containment cooling during containment spray. 2. Fuel Pool cooling. 3. Suppression pool cooling. 4. Condensation of reactor vessel steam produced by reactor decay heat while the reactor is on hot standby. 5. Reactor water cooling during reactor shutdown. <p><u>Safety Functions</u></p> <p>Containment cooling during containment spray and pool cooling operations.</p>	Reactor Bldg. EL 054'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

P.O. # M001 Component: RHR Pumps(E11-C002 A, B, C, D) Manufacturer: Ingersoll Rand

PAGE 9 OF 88
SHEET 1 of 1

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1 BC AP 202	34APKD	Provide emergency cooling to the reactor core.	Reactor Bldg. EL 054'
1 BC BP 202	34APKD	Provide emergency cooling to the reactor core.	Reactor Bldg. EL 054'
1 BC CP 202	34APKD	Provide emergency cooling to the reactor core.	Reactor Bldg. EL 054'
1 BC DP 202	34APKD	Provide emergency cooling to the reactor core.	Reactor Bldg. EL 054'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

P.O. # M001 Component: RHR (LPCI) Check Valves (Testable) Manufacturer: Atwood & Morrill Co.
(E11-F041/F050)

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u> (Typical for All Components on this Sheet)	<u>Location</u>
1 BC HV F050A 1 BC SV F050A	(14053-01-H)*	To prevent backflow of reactor water in event of a pipe rupture upstream of valve. The solenoid-controlled air cylinder is used as a positive means of opening the valve at zero pressure differential, but is not capable of closing the valve or holding the valve open against reverse flow. The actuator and related linkages and components are designed to preclude any damage as a result of applying maximum pneumatic pressure to the actuator in the opening or closing direction while the valve disc is positioned by system fluid forces.	Reactor Bldg. EL 100'
1 BC HV F050B 1 BC SV F050B	(14053-01-H)*		Reactor Bldg. EL 100'
1 BC HV F041A 1 BC SV F041A	(14053-01-H)*		Reactor Bldg. EL 100'
1 BC HV F041B 1 BC SV F041B	(14053-01-H)*		Reactor Bldg. EL 100'
1 BC HV F041C 1 BC SV F041C	(14053-01-H)*		Reactor Bldg. EL 100'
1 BC HV F041D 1 BC SV F041D	(14053-01-H)*		Reactor Bldg. EL 100'

*Drawing No.

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

P.O. # M001 Component: LPCS Check Valves (Testable)
(E21-F006)

Manufacturer: Atwood & Morrill Co.

PAGE 11 OF 88
SHEET 1 of 1

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1 BE HV F006A	(Drawing 14053-01-H)	To prevent backflow of reactor water in event of pipe rupture upstream of valve. The solenoid-controlled air cylinder is used as a positive means of opening the valve at zero pressure differential, but is not capable of closing the valve or holding the valve open against reverse flow. The actuator and related linkages and components are designed to preclude any damage as a result of applying maximum pneumatic pressure to the actuator in the opening or closing direction while the valve disc is positioned by system fluid forces.	Reactor Bldg.
1 BE HV F006B			EL 100'
1 BE SV S006A	(Drawing 14053-01-H)		Reactor Bldg.
1 BE SV S007B			EL 100'

TABLE 3.11-4
 MECHANICAL EQUIPMENT SELECTED FOR HARSH
 ENVIRONMENT QUALIFICATION

P.O. # M001 Component: LPCS Core Spray Pumps (E21-C001) Manufacturer: Ingersoll Rand

PAGE 12 OF 88
 SHEET 1 of 1

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u> (Typical for all components on this Sheet)	<u>Location</u>
1 BE AP 206	25APKD	Provide emergency cooling flow to the reactor core. Provide makeup water in the event of a loss of reactor coolant in order to prevent fuel damage should the core become uncovered. The pumps operate only when the reactor is depressurized.	Reactor Bldg. EL 054'
1 BE BP 206	25APKD		Reactor Bldg. EL 054'
1 BE CP 206	25APKD		Reactor Bldg. EL 054'
1 BE DP 206	25APKD		Reactor Bldg. EL 054'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

P.O. # M001 Component: HPCI Pump Assembly (E410-C001) Manufacturer: Byron Jackson Co.

PAGE 13 OF 88
SHEET 1 of 1

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1 BJ OP 217	12X14X23DVS	Booster Pump: *	Reactor Bldg. EL 054'
1 BJ OP 204	10X12X15DVS, 2STG MVMX	Main Pump: *	Reactor Bldg. EL 054'

*To supply demineralized make-up from the condensate storage tank or suppression pool water to the reactor vessel, to provide that adequate core cooling takes place to avoid overheating of the reactor fuel, in the event of, a loss-of-coolant accident (LOCA), an Anticipated Transient Without Scram (ATWS), or reactor isolation and failure of the Reactor Core Isolation Cooling (RCIC) system.

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

P.O. # M001 Component: RCIC Pump (E41-C001)

Manufacturer: Bingham Willamette Pump Co.

PAGE 14 OF 88
SHEET 1 of 1

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1 BD OP203	6X6X10-1/2CP	The RCIC pump is directly connected to the RCIC turbine driver and supplies water to the reactor vessel during isolation conditions accomplished with the loss of normal feedwater.	Reactor Bldg. EL 054'

TABLE 3.11-4
 MECHANICAL EQUIPMENT SELECTED FOR HARSH
 ENVIRONMENT QUALIFICATION

P.O. # M001 Component: TIP Valve, Guide Tube Assembly Manufacturer: Consolidation Controls Corp.
(C51-J004)

PAGE 15 OF 88
 SHEET 1 of 1

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1 SE XV J004B1	136B1302G002	A squibb fired isolation valve for the tube containing the in-core monitoring calibration detector.	Reactor Bldg. EL 102'
1 SE XV J004B2	136B1302G002	A squibb fired isolation valve for the tube containing the in-core monitoring calibration detector.	Reactor Bldg. EL 102'
1 SE XV J004B3	136B1302G002	A squibb fired isolation valve for the tube containing the in-core monitoring calibration detector.	Reactor Bldg. EL 102'
1 SE XV J004B4	136B1302G002	A squibb fired isolation valve for the tube containing the in-core monitoring calibration detector.	Reactor Bldg. EL 102'
1 SE XV J004B5	136B1302G002	A squibb fired isolation valve for the tube containing the in-core monitoring calibration detector.	Reactor Bldg. EL 102'

TABLE 3.11-4
 MECHANICAL EQUIPMENT SELECTED FOR HARSH
 ENVIRONMENT QUALIFICATION

P.O. #	M001	Component:	Reactor Isolation Cooling Turbine Assembly E51-C002	Manufacturer:	Terry Corporation
I.D. No.	1 FC 0S212	Model No.	GS-2	Functional Description	Location
				Provides the motive power for driving the RCIC pump.	Reactor Bldg. EL. 054'

TABLE 3.11-4
 MECHANICAL EQUIPMENT SELECTED FOR HARSH
 ENVIRONMENT QUALIFICATION

P.O. # M070(Q) Component: Pumps, SACS

Manufacturer: Ingersoll Rand

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1 EG AP 210	14X23S (volute)	To provide flow for safety auxiliaries cooling (closed loop) system.	Reactor Bldg. EL 102'
1 EG BP 210	14X23S (volute)	To provide flow for safety auxiliaries cooling (closed loop) system.	Reactor Bldg. EL 102'
1 EG CP 210	14X23S (volute)	To provide flow for safety auxiliaries cooling (closed loop) system.	Reactor Bldg. EL 102'
1 EG DP 210	14X23S (volute)	To provide flow for safety auxiliaries cooling (closed loop) system.	Reactor Bldg. EL 102'

TABLE 3.11-4
 MECHANICAL EQUIPMENT SELECTED FOR HARSH
 ENVIRONMENT QUALIFICATION

PAGE 18 OF 88

P.O. # M082(Q) Component: Horizontal Centrifugal Pumps Manufacturer: Hayward Tyler

SHEET 1 of 1

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1 GJ AP 414	BH2	IE Panel Rm. Chilled Water Pump	Aux. Bldg., Diesel Area. EL. 178'
1 GJ BP 414	BH2	IE Panel Rm. Chilled Water Pump	Aux. Bldg., Diesel Area. EL. 178
1 EP AP 502	BH3	Traveling screen spray water booster pump	Service Water Intake. EL 079'
1 EP BP 502	BH3	Traveling screen spray water booster pump	Service Water Intake. EL 079'
1 EP CP 502	BH3	Traveling screen spray water booster pump	Service Water Intake. EL 079'
1 EP DP 502	BH3	Traveling screen spray water booster pump	Service Water Intake. EL 079'
1 EC AP 211	4X6X10 NNSH	Fuel Rod Cooling Pump	Reactor Bldg. EL 162
1 EC BP 211	4X6X10 NNSH	Fuel Rod Cooling Pump	Reactor Bldg. EL 162'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 19 of 88

P.O. # M141(Q) Component: Nuclear Relief Valves

Manufacturer: Crosby Valve & Gage Company

SHEET 1 of 3

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1 AB PSV F037A	Style: VR	Vacuum Relief - Discharge Line Vacuum Breaker	Drywell Torus, Reactor Bldg. EL 102'
1 AB PSV F037B	Style: VR	Vacuum Relief - Discharge Line Vacuum Breaker	Drywell Torus, Reactor Bldg. EL 102'
1 AB PSV F037C	Style: VR	Vacuum Relief - Discharge Line Vacuum Breaker	Drywell Torus, Reactor Bldg. EL 102'
1 AB PSV F037D	Style: VR	Vacuum Relief - Discharge Line Vacuum Breaker	Drywell Torus, Reactor Bldg. EL 102'
1 AB PSV F037E	Style: VR	Vacuum Relief - Discharge Line Vacuum Breaker	Drywell Torus, Reactor Bldg. EL 102'
1 AB PSV F037F	Style: VR	Vacuum Relief - Discharge Line Vacuum Breaker	Drywell Torus, Reactor Bldg. EL 102'
1 AB PSV F037G	Style: VR	Vacuum Relief - Discharge Line Vacuum Breaker	Drywell Torus, Reactor Bldg. EL 102'
1 AB PSV F037H	Style: VR	Vacuum Relief - Discharge Line Vacuum Breaker	Drywell Torus, Reactor Bldg. EL 102'
1 AB PSV F037J	Style: VR	Vacuum Relief - Discharge Line Vacuum Breaker	Drywell Torus, Reactor Bldg. EL 102'
1 AB PSV F037K	Style: VR	Vacuum Relief - Discharge Line Vacuum Breaker	Drywell Torus, Reactor Bldg. EL 102'
1 AB PSV F037L	Style: VR	Vacuum Relief - Discharge Line Vacuum Breaker	Drywell Torus, Reactor Bldg. EL 102'
1 AB PSV F037M	Style: VR	Vacuum Relief - Discharge Line Vacuum Breaker	Drywell Torus, Reactor Bldg. EL 102'
1 AB PSV F037P	Style: VR	Vacuum Relief - Discharge Line Vacuum Breaker	Drywell Torus, Reactor Bldg. EL 102'
1 AB PSV F037R	Style: VR	Vacuum Relief - Discharge Line Vacuum Breaker	Drywell Torus, Reactor Bldg. EL 102'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 20 OF 88

P.O. # M141(O) Component: Nuclear Relief Valves

Manufacturer: Crosby Valve & Gage Company

SHEET 2 of 3

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1 AB PSV 4500A	Style: VR	Vacuum Relief - Discharge Line Vacuum Breaker	Drywell Torus, Reactor Bldg. EL 102'
1 AB PSV 4500B	Style: VR	Vacuum Relief - Discharge Line Vacuum Breaker	Drywell Torus, Reactor Bldg. EL 102'
1 AB PSV 4500C	Style: VR	Vacuum Relief - Discharge Line Vacuum Breaker	Drywell Torus, Reactor Bldg. EL 102'
1 AB PSV 4500D	Style: VR	Vacuum Relief - Discharge Line Vacuum Breaker	Drywell Torus, Reactor Bldg. EL 102'
1 AB PSV 4500E	Style: VR	Vacuum Relief - Discharge Line Vacuum Breaker	Drywell Torus, Reactor Bldg. EL 102'
1 AB PSV 4500F	Style: VR	Vacuum Relief - Discharge Line Vacuum Breaker	Drywell Torus, Reactor Bldg. EL 102'
1 AB PSV 4500G	Style: VR	Vacuum Relief - Discharge Line Vacuum Breaker	Drywell Torus, Reactor Bldg. EL 102'
1 AB PSV 4500H	Style: VR	Vacuum Relief - Discharge Line Vacuum Breaker	Drywell Torus, Reactor Bldg. EL 102'
1 AB PSV 4500J	Style: VR	Vacuum Relief - Discharge Line Vacuum Breaker	Drywell Torus, Reactor Bldg. EL 102'
1 AB PSV 4500K	Style: VR	Vacuum Relief - Discharge Line Vacuum Breaker	Drywell Torus, Reactor Bldg. EL 102'
1 AB PSV 4500L	Style: VR	Vacuum Relief - Discharge Line Vacuum Breaker	Drywell Torus, Reactor Bldg. EL 102'
1 AB PSV 4500M	Style: VR	Vacuum Relief - Discharge Line Vacuum Breaker	Drywell Torus, Reactor Bldg. EL 102'
1 AB PSV 4500P	Style: VR	Vacuum Relief - Discharge Line Vacuum Breaker	Drywell Torus, Reactor Bldg. EL 102'
1 AB PSV 4500R	Style: VR	Vacuum Relief - Discharge Line Vacuum Breaker	Drywell Torus, Reactor Bldg. EL 102'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 21 OF 88

P.O. # M141(Q) Component: Nuclear Relief Valves

Manufacturer: Crosby Valve & Gage Company

SHEET 3 of 3

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1 FD PSV F076	Style: VR	HPCI Vacuum Breaker Line	Reactor Bldg. EL 077'
1 FD PSV F077	Style: VR	HPCI Vacuum Breaker Line	Reactor Bldg. EL 077'
1 FC PSV F063	Style: VR	RICCI Turbine Exhaust Valve	Reactor Bldg. EL 077'
1 FC PSV F064	Style: VR	RICCI Turbine Exhaust Valve	Reactor Bldg. EL 077'
1 BC PSV F151A	Style: VR	Siphon Breaker - HX A to Torus	Reactor Bldg. EL 054'
1 BC PSV F151B	Style: VR	Siphon Breaker - HX B to Torus	Reactor Bldg. EL 054'
1 BC PSV F152A	Style: VR	Siphon Breaker - HX A to Torus	Reactor Bldg. EL 054'
1 BC PSV F152B	Style: VR	Siphon Breaker - HX B to Torus	Reactor Bldg. EL 054'
1 BC PSV F055A	Style: JB-56-TD	RHR Heat Exchanger A Inlet	Reactor Bldg. EL 077'
1 BC PSV F055B	Style: JB-56-TD	RHR Heat Exchanger B Inlet	Reactor Bldg. EL 077'
1 KP PSV 5832A	Style: JMBU	MSIV Inboard Seal Gas Supply	Reactor Bldg. EL 102'
1 KP PSV 5832B	Style: JMBU	MSIV Outboard Seal Gas Supply	Reactor Bldg. EL 102'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 22 OF 88

P.O. # M150(Q) Component: Vacuum Relief Valves

Manufacturer: GPE Controls (Div. Vapor Corp.)

SHEET 1 of 1

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1 GS PSV 4946A	LD240-447	Suppression Chamber Vacuum Breaker	Reactor Bldg. EL 054'
1 GS PSV 4946B	LD240-447	Suppression Chamber Vacuum Breaker	Reactor Bldg. EL 054'
1 GS PSV 4946C	LD240-447	Suppression Chamber Vacuum Breaker	Reactor Bldg. EL 054'
1 GS PSV 4946D	LD240-447	Suppression Chamber Vacuum Breaker	Reactor Bldg. EL 054'
1 GS PSV 4946E	LD240-447	Suppression Chamber Vacuum Breaker	Reactor Bldg. EL 054'
1 GS PSV 4946F	LD240-447	Suppression Chamber Vacuum Breaker	Reactor Bldg. EL 054'
1 GS PSV 4946G	LD240-447	Suppression Chamber Vacuum Breaker	Reactor Bldg. EL 054'
1 GS PSV 4946H	LD240-447	Suppression Chamber Vacuum Breaker	Reactor Bldg. EL 054'
1 GS PSV 5030	LD240-383	Reactor Bldg. Vacuum	Reactor Bldg. EL 077'
1 GS PSV 5032	LD240-383	Reactor Bldg. Vacuum	Reactor Bldg. EL 077'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 23 OF 88

P.O. # M713(Q) Component: Fans, Centrifugal

Manufacturer: Buffalo Forge Company

SHEET 1 of 2

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1 GK AV 400	365 BL	Control Room Emergency Air Supply Fan	Aux. Bldg. Control Area. EL 155'
1 GK BV 400	365 BL	Control Room Emergency Air Supply Fan	Aux. Bldg. Control Area, EL 155'
1 GK AV 410	245 BL	Control Area Battery Room Exhaust Fan	Aux. Bldg. Control Area. EL 178'
1 GK BV 410	245 BL	Control Area Battery Room Exhaust Fan	Aux. Bldg. Control Area. EL 178'
1 GM AV 406	270 BL	Diesel Area Battery Room Exhaust Fan	Aux. Bldg. Control Area. EL 178'
1 GM BV 406	270 BL	Diesel Area Battery Room Exhaust Fan	Aux. Bldg. Control Area. EL 178'
1 GM CV 406	270 BL	Diesel Area Battery Room Exhaust Fan	Aux. Bldg. Diesel Area. EL 163'
1 GM DV 406	270 BL	Diesel Area Battery Room Exhaust Fan	Aux. Bldg. Diesel Area. EL 163'
1 GU AV 206	840 BL	Filtration, Recirculation & Vent Fan	Aux. Bldg. Diesel Area. EL 163'
1 GU BV 206	840 BL	Filtration, Recirculation & Vent Fan	Aux. Bldg. Diesel Area. EL 163'
1 GU AV 213	805 BL	FRVS, Recirculation Fan	Reactor Bldg. EL 132'
1 GU BV 213	805 BL	FRVS, Recirculation Fan	Reactor Bldg. EL 178'
1 GU CV 213	805 BL	FRVS, Recirculation Fan	Reactor Bldg. EL 132'
1 GU DV 213	805 BL	FRVS, Recirculation Fan	Reactor Bldg. EL 162'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 24 OF 88

P.O. # M713(Q) Component: Fans, Centrifugal

Manufacturer: Buffalo Forge Company

SHEET 2 of 2

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1 GU EV 213	805 BL	FRVS, Recirculation Fan	Reactor Bldg. EL 162'
1 GU FV 213	805 BL	FRVS, Recirculation Fan	Reactor Bldg. EL 178'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 25 OF 88

P.O. # J601(Q) Component: Control Valves

Manufacturer: Masoneilon Div. (McGraw Edison)

SHEET 1 of 2

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1 BC LV F053A	38 20721	RHR HX A To RCIC	Reactor Bldg. EL 054'
1 BC LV F053B	38 20721	RHR HX B Disch. to Sup PL/RCIC	Reactor Bldg. EL 054'
1 EC LV 4660	38 20771	Skimmer Surge TK B Make-Up SPL	Reactor Bldg. EL 162'
1 FD LV F025	38 20771	Vac TK Cond. PMP Disch to CRW	Reactor Bldg. EL 054'
1 BC PV F051A	38 40512	HPCI STM Press Reducing	Reactor Bldg. EL 077'
1 BC PV F051B	38 40512	HPCI to RHR Heat Exch B	Reactor Bldg. EL 077'
1 GJ TV 9634A	38 80385	Cont. Equip. Rm. Clr. AVH407 BYP	Aux. Bldg. Diesel Area. EL 178'
1 GJ TV 9634B	38 80385	Cont. Equip. Rm. Clr BVH407 BYP	Aux. Bldg. Diesel Area. EL 178'
1 GJ TV 9637A	37 80385	Cont. Rm. Clr. AVH403 BYP	Aux. Bldg. Cont. Area. EL 155'
1 GJ TV 9637B	37 80385	Cont. Rm. Clr. BVH403 BYP	Aux. Bldg. Cont. Area. EL 155'
1 GJ TV 9667A	38 80385	IE PNL Rm. Supply AC AVH408	Aux. Bldg. Diesel Area. EL 163'
1 GJ TV 9667B	38 80385	IE PNL Rm. Supply CLR BVH408 BYP	Aux. Bldg. Diesel Area. EL 163'
1 GJ TV 9762A	38 80385	TSC AC Unit OOVH314 Coil A BYP	Aux. Bldg. Radwaste Area. EL 155'
1 GJ TV 9762B	38 80385	TSC AC Unit OOVH314 Coil B	Aux. Bldg. Radwaste Area. EL 155'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 26 OF 88

P.O. # J601(Q) Component: Control Valves

Manufacturer: Masoneilon Div. (McGraw Edison)

SHEET 2 of 2

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1 GJ TV 9768A	37 20771	RSP Rm. OOVH316 Cooling Coil A	Aux. Bldg. Control Area. EL 137'
1 GJ TV 9768B	37 20771	RSP Rm. OOVH316 Cooling Coil B	Aux. Bldg. Control Area. EL 137'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

P.O. # J605(Q) Component: Control Valves

Manufacturer: Fisher Controls Corp. (Controls Ass.) SHEET 1 of 1

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1 EG V804	7670	SACS Heat Exchanger Butterfly Valve	Reactor Bldg. EL 103'
1 EG V805	7670	SACS Heat Exchanger Butterfly Valve	Reactor Bldg. EL 113'
1 EG V806	7670	SACS Heat Exchanger Butterfly Valve	Reactor Bldg. EL 103'
1 EG V807	7670	SACS Heat Exchanger Butterfly Valve	Reactor Bldg. EL 113'
1 BC HCV F048A	7620	RHR Butterfly Control Valve	Reactor Bldg. EL 077'
1 BC HCV F048B	7620	RHR Butterfly Control Valve	Reactor Bldg. EL 077'
1 EG TV 2517A	7620	SACS Heat Exchanger Butterfly Bypass Valve	Reactor Bldg. EL 102'
1 EG TV 2517B	7620	SACS Heat Exchanger Butterfly Bypass Valve	Reactor Bldg. EL 102'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 28 OF 88

P.O. # J703(Q) Component: Excess Flow Check Valves

Manufacturer: Dragon Valve Inc.

SHEET 1 of 15

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1ABFO 3666A	12696-7L	MS Line A Instrument Line	Drywell Torus, Reactor Bldg. EL 112'
1ABFO 3666D	12696-7L	MS Line B Instrument Line	Drywell Torus, Reactor Bldg. EL 100'
1ABFO 3666C	12696-7L	MS Line C Instrument Line	Drywell Torus, Reactor Bldg. EL 100'
1ABFO 3666D	12696-7L	MS Line D Instrument Line	Drywell Torus, Reactor Bldg. EL 112'
1ABFO 3667A	12696-7L	MS Line A Instrument Line	Drywell Torus, Reactor Bldg. EL 112'
1ABFO 3667B	12696-7L	MS Line B Instrument Line	Drywell Torus, Reactor Bldg. EL 100'
1ABFO 3667C	12696-7L	MS Line C Instrument Line	Drywell Torus, Reactor Bldg. EL 100'
1ABFO 3667D	12696-7L	MS Line D Instrument Line	Drywell Torus, Reactor Bldg. EL 100'
1ABFO 3668A	12696-7L	MS Line A Instrument Line	Drywell Torus, Reactor Bldg. EL 112'
1ABFO 3668B	12696-7L	MS Line B Instrument Line	Drywell Torus, Reactor Bldg. EL 112'
1ABFO 3668C	12696-7L	MS Line C Instrument Line	Drywell Torus, Reactor Bldg. EL 100'
1ABFO 3668D	12696-7L	MS Line D Instrument Line	Drywell Torus, Reactor Bldg. EL 100'
1ABFO 3669A	12696-7L	MS Line A Instrument Line	Drywell Torus, Reactor Bldg. EL 112'
1ABFO 3669B	12696-7L	MS Line B Instrument Line	Drywell Torus, Reactor Bldg. EL 112'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 29 OF 88

P.O. # J703(Q) Component: Excess Flow Check Valves

Manufacturer: Dragon Valve Inc.

SHEET 2 of 15

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1ABFO 3669C	12696-7L	MS Line C Instrument Line	Drywell Torus, Reactor Bldg. EL 100'
1ABFO 3669D	12696-7L	MS Line D Instrument Line	Drywell Torus, Reactor Bldg. EL 112'
1ABXV 3666A	12504-4	Main Steam Line A Excess Flow	Reactor Bldg. EL 077'
1ABXV 3666B	12504-4	Main Steam Line B Excess Flow	Reactor Bldg. EL 077'
1ABXV 3666C	12504-4	Main Steam Line C Excess Flow	Reactor Bldg. EL 077'
1ABXV 3666D	12504-4	Main Steam Line D Excess Flow	Reactor Bldg. EL 077'
1ABXV 3667A	12504-4	Main Steam Line A Excess Flow	Reactor Bldg. EL 077'
1ABXV 3667B	12504-4	Main Steam Line B Excess Flow	Reactor Bldg. EL 077'
1ABXV 3667C	12504-4	Main Steam Line C Excess Flow	Reactor Bldg. EL 077'
1ABXV 3667D	12504-4	Main Steam Line D Excess Flow	Reactor Bldg. EL 077'
1ABXV 3668A	12504-4	Main Steam Line A Excess Flow	Reactor Bldg. EL 077'
1ABXV 3668B	12504-4	Main Steam Line B Excess Flow	Reactor Bldg. EL 077'
1ABXV 3668C	12504-4	Main Steam Line C Excess Flow	Reactor Bldg. EL 077'
1ABXV 3668D	12504-4	Main Steam Line D Excess Flow	Reactor Bldg. EL 077'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 30 OF 88

P.O. # J703(Q) Component: Excess Flow Check Valves

Manufacturer: Dragon Valve Inc.

SHEET 3 of 15

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1ABXV 3669A	12504-4	Main Steam Line A Excess Flow	Reactor Bldg. EL 077'
1ABXV 3669B	12504-4	Main Steam Line B Excess Flow	Reactor Bldg. EL 077'
1ABXV 3669C	12504-4	Main Steam Line C Excess Flow	Reactor Bldg. EL 077'
1ABXV 3669D	12504-4	Main Steam Line D Excess Flow	Reactor Bldg. EL 077'
1BBFO 3621	12696-7L	IBB-LT-3622B-Instrument Line	Drywell Torus, Reactor Bldg. EL 145'
1BBFO 3649	12696-7L	Reac. Head Seal Leakage Det	Drywell Torus, Reactor Bldg. EL 162'
1BBFO 3725	12696-7L	Reactor Vessel Instrument Line	Drywell Torus, Reactor Bldg. EL 121'
1BBFO 3726A	12696-7L	Reactor Vessel Instrument Line	Drywell Torus, Reactor Bldg. EL 162'
1BBFO 3726B	12696-7L	Reactor Vessel Instrument Line	Drywell Torus, Reactor Bldg. EL 162'
1BBFO 3727A	12696-7L	Reactor Vessel Instrument Line	Drywell Torus, Reactor Bldg. EL 162'
1BBFO 3727B	12696-7L	Reactor Vessel Instrument Line	Drywell Torus, Reactor Bldg. EL 162'
1BBFO 3728A	12696-7L	Reactor Vessel Instrument Line	Drywell Torus, Reactor Bldg. EL 145'
1BBFO 3728B	12696-7L	Reactor Vessel Instrument Line	Drywell Torus, Reactor Bldg. EL 145'
1BBFO 3729A	12696-7L	Reactor Vessel Instrument Line	Drywell Torus, Reactor Bldg. EL 145'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 31 OF 88

P.O. # J703(Q) Component: Excess Flow Check Valves

Manufacturer: Dragon Valve Inc.

SHEET 4 of 15

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1BBFO 3729B	12696-7L	Reactor Vessel Instrument Line	Drywell Torus, Reactor Bldg. EL 145'
1BBFO 3730A	12696-7L	Reactor Vessel Instrument Line	Drywell Torus, Reactor Bldg. EL 145'
1BBFO 3730B	12696-7L	Reactor Vessel Instrument Line	Drywell Torus, Reactor Bldg. EL 132'
1BBFO 3731A	12696-7L	Reactor Vessel Instrument Line	Drywell Torus, Reactor Bldg. EL 145'
1BBFO 3731B	12696-7L	Reactor Vessel Instrument Line	Drywell Torus, Reactor Bldg. EL 132'
1BBFO 3732A	12696-7L	Jet Pump Instrument Line	Drywell Torus, Reactor Bldg. EL 121'
1BBFO 3732B	12696-7L	Jet Pump Instrument Line	Drywell Torus, Reactor Bldg. EL 112'
1BBFO 3732C	12696-7L	Jet Pump Instrument Line	Drywell Torus, Reactor Bldg. EL 121'
1BBFO 3732D	12696-7L	Jet Pump Instrument Line	Drywell Torus, Reactor Bldg. EL 112'
1BBFO 3732E	12696-7L	Jet Pump Instrument Line	Drywell Torus, Reactor Bldg. EL 121'
1BBFO 3732F	12696-7L	Jet Pump Instrument Line	Drywell Torus, Reactor Bldg. EL 112'
1BBFO 3732G	12696-7L	Jet Pump Instrument Line	Drywell Torus, Reactor Bldg. EL 121'
1BBFO 3732H	12696-7L	Jet Pump Instrument Line	Drywell Torus, Reactor Bldg. EL 112'
1BBFO 3732J	12696-7L	Jet Pump Instrument Line	Drywell Torus, Reactor Bldg. EL 121'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 32 OF 88

P.O. # J703(Q) Component: Excess Flow Check Valves

Manufacturer: Dragon Valve Inc.

SHEET 5 of 15

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1BBFO 3732K	12696-7L	Jet Pump Instrument Line	Drywell Torus, Reactor Bldg. EL 112'
1BBFO 3732L	12696-7L	Jet Pump Instrument Line	Drywell Torus, Reactor Bldg. EL 121'
1BBFO 3732M	12696-7L	Jet Pump Instrument Line	Drywell Torus, Reactor Bldg. EL 112'
1BBFO 3732N	12696-7L	Jet Pump Instrument Line	Drywell Torus, Reactor Bldg. EL 121'
1BBFO 3732P	12696-7L	Jet Pump Instrument Line	Drywell Torus, Reactor Bldg. EL 121'
1BBFO 3732R	12696-7L	Jet Pump Instrument Line	Drywell Torus, Reactor Bldg. EL 121'
1BBFO 3732S	12696-7L	Jet Pump Instrument Line	Reactor Bldg. EL 077'
1BBFO 3732T	12696-7L	Jet Pump Instrument Line	Reactor Bldg. EL 077'
1BBFO 3732U	12696-7L	Jet Pump Instrument Line	Drywell Torus, Reactor Bldg. EL 112'
1BBFO 3732V	12696-7L	Jet Pump Instrument Line	Drywell Torus, Reactor Bldg. EL 121'
1BBFO 3732W	12696-7L	Jet Pump Instrument Line	Drywell Torus, Reactor Bldg. EL 112'
1BBFO 3734A	12696-7L	Jet Pump Instrument Line	Drywell Torus, Reactor Bldg. EL 112'
1BBFO 3734B	12696-7L	Jet Pump Instrument Line	Drywell Torus, Reactor Bldg. EL 121'
1BBFO 3734C	12696-7L	Jet Pump Instrument Line	Drywell Torus, Reactor Bldg. EL 121'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 33 OF 88

P.O. # J703(Q) Component: Excess Flow Check Valves

Manufacturer: Dragon Valve Inc.

SHEET 6 of 15

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1BBFO 3734D	12696-7L	Jet Pump Instrument Line	Drywell Torus, Reactor Bldg. EL 112'
1BBFO 3737A	12696-7L	1BB-PDT-N032-B21 Instrument Line	Drywell Torus, Reactor Bldg. EL 100'
1BBFO 3737B	12696-7L	Control Rod Drive Instrument Line	Drywell Torus, Reactor Bldg. EL 100'
1BBFO 3738A	12696-7L	Jet Pump Instrument Line	Drywell Torus, Reactor Bldg. EL 100'
1BBFO 3738B	12696-7L	Jet Pump Instrument Line	Drywell Torus, Reactor Bldg. EL 100'
1BBFO 3783	12696-7L	Recirc. Pump A Seal Instrument Line	Reactor Bldg. EL 102'
1BBFO 3785	12696-7L	Recirc. Pump A Seal Purge Instr.	Reactor Bldg. EL 102'
1BBFO 3787	12696-7L	Recirc. Pump B Seal Instrument Line	Reactor Bldg. EL 102'
1BBFO 3789	12696-7L	Recirc. Pump Seal B Purge Instr.	Reactor Bldg. EL 102'
1BBFO 3801A	12696-7L	Recirc. Line A Instrument Line	Reactor Bldg. EL 102'
1BBFO 3801C	12696-7L	Recirc. Line A Instrument Line	Reactor Bldg. EL 102'
1BBFO 3802A	12696-7L	Recirc. Line A Instrument Line	Reactor Bldg. EL 102'
1BBFO 3802C	12696-7L	Recirc. Line A Instrument Line	Reactor Bldg. EL 102'
1BBFO 3803B	12696-7L	Recirc. Line B Instrument Line	Reactor Bldg. EL 102'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 34 OF 88

P.O. # J703(Q) Component: Excess Flow Check Valves

Manufacturer: Dragon Valve Inc.

SHEET 7 of 15

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1BBFO 3803D	12696-7L	Recirc. Line B Instrument Line	Reactor Bldg. EL 102'
1BBFO 3804B	12696-7L	Recirc. Line B Instrument Line	Reactor Bldg. EL 102'
1BBFO 3804D	12696-7L	Recirc. Line B Instrument Line	Reactor Bldg. EL 102'
1BBFO 3820	12696-7L	Recirc. Pump A Discharge Instrument Line	Reactor Bldg. EL 102'
1BBFO 3821	12696-7L	Recirc. Pump A Suction Instrument Line	Reactor Bldg. EL 102'
1BBFO 3826	12696-7L	Recirc. Pump B Suction Instrument Line	Reactor Bldg. EL 102'
1BBFO 3827	12696-7L	Recirc. Pump B Discharge Instrument Line	Reactor Bldg. EL 102'
1BBXV 3621	12504-2	1BB-LT-3622B Instrument Line	Reactor Bldg. EL 145'
1BBXV 3649	12504-4	Reactor Head Seal Leakage Det	Drywell Torus, Reactor Bldg. EL 145'
1BBXV 3688	12504-4	Excess Flow Check Valve	Reactor Bldg. EL 077'
1BBXV 3691A	12504-4	Excess Flow Check Valve	Reactor Bldg. EL 077'
1BBXV 3691B	12504-4	Excess Flow Check Valve	Reactor Bldg. EL 077'
1BBXV 3725	12504-4	Excess Flow Check Valve	Reactor Bldg. EL 145'
1BBXV 3726A	12504-2	Excess Flow Check Valve	Reactor Bldg. EL 102'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 35 OF 88

P.O. # J703(Q) Component: Excess Flow Check Valves

Manufacturer: Dragon Valve Inc.

SHEET 8 of 15

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1BBXV 3726B	12504-2	Excess Flow Check Valve	Reactor Bldg. EL 102'
1BBXV 3727A	12504-2	Excess Flow Check Valve	Reactor Bldg. EL 102'
1BBXV 3727B	12504-2	Excess Flow Check Valve	Reactor Bldg. EL 102'
1BBXV 3728A	12504-2	Excess Flow Check Valve	Reactor Bldg. EL 102'
1BBXV 3728B	12504-2	Excess Flow Check Valve	Reactor Bldg. EL 102'
1BBXV 3729A	12504-4	Excess Flow Check Valve	Reactor Bldg. EL 102'
1BBXV 3729B	12504-4	Excess Flow Check Valve	Reactor Bldg. EL 102'
1BBXV 3730A	12504-2	Excess Flow Check Valve	Reactor Bldg. EL 102'
1BBXV 3730B	12504-2	Excess Flow Check Valve	Reactor Bldg. EL 102'
1BBXV 3731A	12504-2	Excess Flow Check Valve	Reactor Bldg. EL 102'
1BBXV 3731B	12504-2	Excess Flow Check Valve	Reactor Bldg. EL 102'
1BBXV 3732A	12504-4	Excess Flow Check Valve	Reactor Bldg. EL 077'
1BBXV 3732B	12504-4	Excess Flow Check Valve	Reactor Bldg. EL 077'
1BBXV 3732C	12504-4	Excess Flow Check Valve	Reactor Bldg. EL 077'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 36 OF 88

P.O. # J703(Q) Component: Excess Flow Check Valves

Manufacturer: Dragon Valve Inc.

SHEET 9 of 15

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1BBXV 3732D	12504-4	Excess Flow Check Valve	Reactor Bldg. EL 077'
1BBXV 3732E	12504-4	Excess Flow Check Valve	Reactor Bldg. EL 077'
1BBXV 3732F	12504-4	Excess Flow Check Valve	Reactor Bldg. EL 077'
1BBXV 3732G	12504-4	Excess Flow Check Valve	Reactor Bldg. EL 077'
1BBXV 3732H	12504-4	Excess Flow Check Valve	Reactor Bldg. EL 077'
1BBXV 3732J	12504-4	Excess Flow Check Valve	Reactor Bldg. EL 077'
1BBXV 3732K	12504-4	Excess Flow Check Valve	Reactor Bldg. EL 077'
1BBXV 3732L	12504-4	Excess Flow Check Valve	Reactor Bldg. EL 077'
1BBXV 3732M	12504-4	Excess Flow Check Valve	Reactor Bldg. EL 077'
1BBXV 3732N	12504-4	Excess Flow Check Valve	Reactor Bldg. EL 077'
1BBXV 3732P	12504-4	Excess Flow Check Valve	Reactor Bldg. EL 077'
1BBXV 3732R	12504-4	Excess Flow Check Valve	Reactor Bldg. EL 077'
1BBXV 3732S	12504-4	Excess Flow Check Valve	Reactor Bldg. EL 077'
1BBXV 3732T	12504-4	Excess Flow Check Valve	Reactor Bldg. EL 077'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

P.O. # J703(Q) Component: Excess Flow Check Valves

Manufacturer: Dragon Valve Inc.

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1BBXV 3732U	12504-4	Excess Flow Check Valve	Reactor Bldg. EL 077'
1BBXV 3732V	12504-4	Excess Flow Check Valve	Reactor Bldg. EL 077'
1BBXV 3732W	12504-4	Excess Flow Check Valve	Reactor Bldg. EL 077'
1BBXV 3734A	12504-4	Excess Flow Check Valve	Reactor Bldg. EL 077'
1BBXV 3734B	12504-4	Excess Flow Check Valve	Reactor Bldg. EL 077'
1BBXV 3734C	12504-4	Excess Flow Check Valve	Reactor Bldg. EL 077'
1BBXV 3734D	12504-4	Excess Flow Check Valve	Reactor Bldg. EL 077'
1BBXV 3737A	12504-4	Excess Flow Check Valve	Reactor Bldg. EL 077'
1BBXV 3737B	12504-4	Excess Flow Check Valve	Reactor Bldg. EL 077'
1BBXV 3738A	12504-2	Excess Flow Check Valve	Reactor Bldg. EL 077'
1BBXV 3738B	12504-2	Excess Flow Check Valve	Reactor Bldg. EL 077'
1BBXV 3783	12504-4	Excess Flow Check Valve	Reactor Bldg. EL 077'
1BBXV 3785	12504-4	Excess Flow Check Valve	Reactor Bldg. EL 077'
1BBXV 3787	12504-4	Excess Flow Check Valve	Reactor Bldg. EL 077'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 38 OF 88

P.O. # J703(Q) Component: Excess Flow Check Valves

Manufacturer: Dragon Valve Inc.

SHEET 11 of 15

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
IBBXV 3789	12504-4	Excess Flow Check Valve Purge	Reactor Bldg. EL 077'
IBBXV 3801A	12504-4	Excess Flow Check Valve	Drywell Torus, Reactor Bldg. EL 086'
IBBXV 3801B	12504-4	Excess Flow Check Valve	Drywell Torus, Reactor Bldg. EL 077'
IBBXV 3801C	12504-4	Excess Flow Check Valve	Drywell Torus, Reactor Bldg. EL 077'
IBBXV 3801D	12504-4	Excess Flow Check Valve	Drywell Torus, Reactor Bldg. EL 077'
IBBXV 3802A	12504-4	Excess Flow Check Valve	Drywell Torus, Reactor Bldg. EL 077'
IBBXV 3802B	12504-4	Excess Flow Check Valve	Drywell Torus, Reactor Bldg. EL 077'
IBBXV 3802C	12504-4	Excess Flow Check Valve	Drywell Torus, Reactor Bldg. EL 077'
IBBXV 3802D	12504-4	Excess Flow Check Valve	Drywell Torus, Reactor Bldg. EL 077'
IBBXV 3803A	12504-4	Excess Flow Check Valve	Drywell Torus, Reactor Bldg. EL 077'
IBBXV 3803B	12504-4	Excess Flow Check Valve	Drywell Torus, Reactor Bldg. EL 077'
IBBXV 3803C	12504-4	Excess Flow Check Valve	Drywell Torus, Reactor Bldg. EL 077'
IBBXV 3803D	12504-4	Excess Flow Check Valve	Drywell Torus, Reactor Bldg. EL 077'
IBBXV 3804A	12504-4	Excess Flow Check Valve	Drywell Torus, Reactor Bldg. EL 077'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 39 OF 88

P.O. # J703(Q) Component: Excess Flow Check Valves

Manufacturer: Dragon Valve Inc.

SHEET 12 of 15

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1BBXV 3804B	12504-4	Excess Flow Check Valve	Drywell Torus, Reactor Bldg. EL 077'
1BBXV 3804C	12504-4	Excess Flow Check Valve	Drywell Torus, Reactor Bldg. EL 077'
1BBXV 3804D	12504-4	Excess Flow Check Valve	Drywell Torus, Reactor Bldg. EL 086'
1BBXV 3820	12504-4	Excess Flow Check Valve	Drywell Torus, Reactor Bldg. EL 077'
1BBXV 3821	12504-4	Excess Flow Check Valve	Reactor Bldg. EL 077'
1BBXV 3826	12504-4	Excess Flow Check Valve	Drywell Torus, Reactor Bldg. EL 077'
1BBXV 3827	12504-4	Excess Flow Check Valve	Drywell Torus, Reactor Bldg. EL 077'
1BBFO 4411A	12696-7L	Excess Flow Check For PDT-N060A	Drywell Torus, Reactor Bldg. EL 077'
1BCFO 4411B	12696-7L	LPCI Inject Press	Drywell Torus, Reactor Bldg. EL 100'
1BCFO 4411C	12696-7L	Excess Flow Check For PDT-N060A	Drywell Torus, Reactor Bldg. EL 100'
1BCFO 4411D	12696-7L	LPCI Inject Line Press	Drywell Torus, Reactor Bldg. EL 077'
1BCFO 4429A	12696-7L	Excess Flow Check For PDT-N058A	Drywell Torus, Reactor Bldg. EL 077'
1BCFO 4429B	12696-7L	HV-F017B E11 DP LN Flow Check	Drywell Torus, Reactor Bldg. EL 102'
1BCFO 4429C	12696-7L	Excess Flow Check For PDT-N058C	Reactor Bldg. EL 077'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 40 OF 88

P.O. # J703(Q) Component: Excess Flow Check Valves

Manufacturer: Dragon Valve Inc.

SHEET 13 of 15

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1BCFO 4429D	12696-7L	HV-F017D Ell DP LN Flow Check	Drywell Torus, Reactor Bldg. EL 102'
1BCXV 4411A	12504-4	Excess Flow Check For PDT-N060A	Reactor Bldg. EL 077'
1BCXV 4411B	12504-4	Excess Flow Check For PDT-N060B	Reactor Bldg. EL 077'
1BCXV 4411C	12504-4	Excess Flow Check For PDT-N060A	Reactor Bldg. EL 077'
1BCXV 4411D	12504-4	Excess Flow Check For PDT-N060A	Reactor Bldg. EL 077'
1BCXV 4429A	12504-4	Excess Flow Check For PDT-N058A	Reactor Bldg. EL 077'
1BCXV 4429B	12504-4	HV-F017B Ell DP LN Flow Check	Reactor Bldg. EL 077'
1BCXV 4429C	12504-4	Excess Flow Check For PDT-N058C	Reactor Bldg. EL 077'
1BCXV 4429D	12504-4	HV-F017D Ell DP LN Flow Check	Reactor Bldg. EL 077'
1BEFO 4575A	12696-7L	Core Spray Loop B To PDT-N056	Drywell Torus, Reactor Bldg. EL 102'
1BEFO 4575B	12696-7L	Core Spray Loop A To PDT-N056	Drywell Torus, Reactor Bldg. EL 102'
1BEXV FD18A E21	12504-4	Excess Flow Check Valve PDT N056	Drywell Torus, Reactor Bldg. EL 077'
1BEXV FD18B E21	12504-4	Excess Flow Check Valve PDT N056	Drywell Torus, Reactor Bldg. EL 077'
1BGFO 3882	12696-7L	RV Drain Ex Flow	Drywell Torus, Reactor Bldg. EL 102'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 41 OF 88

P.O. # J703(Q) Component: Excess Flow Check Valves

Manufacturer: Dragon Valve Inc.

SHEET 14 of 15

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1BGFO 3884A	12696-7L	RWCU Inlet Flow Ex Fl	Drywell Torus, Reactor Bldg. EL 121'
1BGFO 3884B	12696-7L	RWCU Inlet Flow Ex Fl	Reactor Bldg. EL 150'
1BGFO 3884C	12696-7L	RWCU Inlet Flow Ex Fl	Reactor Bldg. EL 150'
1BGFO 3884D	12696-7L	RWCU Inlet Flow Ex Fl	Reactor Bldg. EL 150'
1BGXV 3882	12504-2	RV Drain Excess Flow Check Valve	Reactor Bldg. EL 077'
1BGXV 3884A	12504-4	RWCU Inlet Flow Ex Fl Check Valve	Reactor Bldg. EL 077'
1BGXV 3884B	12504-4	RWCU Inlet Flow Ex Fl Check Valve	Reactor Bldg. EL 077'
1BGXV 3884C	12504-4	RWCU Inlet Flow Ex Fl Check Valve	Reactor Bldg. EL 077'
1BGXV 3884D	12504-4	RWCU Inlet Flow Ex Fl Check Valve	Reactor Bldg. EL 077'
1FCFO 4150A	12696-7L	RCIC Turbine Steam Instr Line	Reactor Bldg. EL 087'
1FCFO 4150B	12696-7L	RCIC Turbine Steam Instr Line	Reactor Bldg. EL 087'
1FCFO 4150C	12696-7L	RCIC Turbine Steam Instr Line	Reactor Bldg. EL 087'
1FCFO 4150D	12696-7L	RCIC Turbine Steam Instr Line	Reactor Bldg. EL 087'
1FCXV 4150A	12504-4	RCIC Turbine Steam Ex Fl Check Valve	Reactor Bldg. EL 077'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 42 OF 88

P.O. # J703(Q) Component: Excess Flow Check Valves

Manufacturer: Dragon Valve Inc.

SHEET 15 of 15

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1FCXV 4150B	12504-4	RCIC Turbine Steam Excess Flow Check Valve	Reactor Bldg. EL 077;
1FCXV 4150C	12504-4	RCIC Turbine Steam Excess Flow Check Valve	Reactor Bldg. EL 077'
1FCXV 4150D	12504-4	RCIC Turbine Steam Excess Flow Check Valve	Reactor Bldg. EL 077'
1FDFO 4800A	12696-7L	HPCI Steam Supply Instr. Line	Drywell Torus, Reactor Bldg. EL 077'
1FDFO 4800B	12696-7L	HPCI Steam Supply Instr. Line	Drywell Torus, Reactor Bldg. EL 077'
1FDFO 4800C	12696-7L	HPCI Steam Supply Instr. Line	Drywell Torus, Reactor Bldg. EL 102'
1FDFO 4800D	12696-7L	HPCI Steam Supply Instr. Line	Drywell Torus, Reactor Bldg. EL 102'
1FDXV 4800A	12504-4	HPCI Steam Supply Instr. Line	Reactor Bldg. EL 077'
1FDXV 4800B	12504-4	HPCI Steam Supply Instr. Line	Reactor Bldg. EL 077'
1FDXV 4800C	12504-4	HPCI Steam Supply Instr. Line	Reactor Bldg. EL 077'
1FDXV 4800D	12504-4	HPCI Steam Supply Instr. Line	Reactor Bldg. EL 077'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 43 OF 88

P.O. # J705(Q) Component: Nuclear Instrument Valve

Manufacturer: Dragon Valves

SHEET 1 of 3

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1AB XV 1072A	14833	Main Steam First Stage Turbine Pressure Valve	Turbine Bldg. EL 120'
1AB XV 1072B	14833	Main Steam First Stage Turbine Pressure Valve	Turbine Bldg. EL 120'
1AP XV 2043	14833	Condensate Storage Tank Excess Flow Check Valve	Reactor Bldg. EL 077'
1EA XV 2262A	14833	Service Water Pump Lube Tank Check Valve	Service Water Structure. EL 122'
1EA XV 2262B	14833	Service Water Pump Lube Tank Check Valve	Service Water Structure. EL 122'
1EG XV 2518A1	14833	RHR Pump Bearing Cooler Check Valve	Reactor Bldg. EL 054'
1EG XV 2518A2	14833	RHR Pump Bearing Cooler Check Valve	Reactor Bldg. EL 054'
1EG XV 2518B1	14833	RHR Pump Bearing Cooler Check Valve	Reactor Bldg. EL 054'
1EG XV 2518B2	14833	RHR Pump Bearing Cooler Check Valve	Reactor Bldg. EL 054'
1EG XV 2518C1	14833	RHR Pump Bearing Cooler Check Valve	Reactor Bldg. EL 054'
1EG XV 2518C2	14833	RHR Pump Bearing Cooler Check Valve	Reactor Bldg. EL 054'
1EG XV 2518D1	14833	RHR Pump Bearing Cooler Check Valve	Reactor Bldg. EL 054'
1EG XV 2518D2	14833	RHR Pump Bearing Cooler Check Valve	Reactor Bldg. EL 054'
1EG XV 2533A1	14833	RHR Pump Bearing Cooler Check Valve	Reactor Bldg. EL 054'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 44 OF 88

P.O. # J705(Q) Component: Nuclear Instrument Valve

Manufacturer: Dragon Valves

SHEET 2 of 3

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1EG XV 2533A2	14833	RHR Pump Seal Cooler Check Valve	Reactor Bldg. EL 054'
1EG XV 2533B1	14833	RHR Pump Seal Cooler Check Valve	Reactor Bldg. EL 054'
1EG XV 2533B2	14833	RHR Pump Seal Cooler Check Valve	Reactor Bldg. EL 054'
1EG XV 2533C1	14833	RHR Pump Seal Cooler Check Valve	Reactor Bldg. EL 054'
1EG XV 2533C2	14833	RHR Pump Seal Cooler Check Valve	Reactor Bldg. EL 054'
1EG XV 2533D1	14833	RHR Pump Seal Cooler Check Valve	Reactor Bldg. EL 054'
1EG XV 2533D2	14833	RHR Pump Seal Cooler Check Valve	Reactor Bldg. EL 054'
1EG XV 2281A	14833	SACS Accumulator Supply Side, Limiting Flow Check Valve	Aux. Bldg. Diesel Area EL 054'
1EG XV 2281B	14833	SACS Accumulator Supply Side, Limiting Flow Check Valve	Aux. Bldg. Diesel Area EL 054'
1EG XV 2288A	14833	SACS Accumulator Return Side, Limiting Flow Check Valve	Aux. Bldg. Contr. Area EL 054'
1EG XV 2288B	14833	SACS Accumulator Return Side, Limiting Flow Check Valve	Aux. Bldg. Contr. Area EL 054'
1EG XV 2509	14833	Return Side Accum. Inlet Limiting Flow Check Valve	Aux. Bldg. Contr. Area EL 054'
1EG XV 2523	14833	Return Side Accum. Inlet Limiting Flow Check Valve	Aux. Bldg. Contr. Area EL 054'
1EG XV 2545	14833	Supply Side Accum. Outlet Limiting Flow Check Valve	Aux. Bldg. Diesel Area EL 054'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 45 OF 88

P.O. # J705(Q) Component: Nuclear Instrument Valve

Manufacturer: Dragon Valves

SHEET 3 of 3

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1EG XV 2546	14833	Supply Side Accum. Outlet Limiting Flow Check Valve	Aux. Bldg. Diesel Area EL 054'
1EG XV 2587	14833	Return Side Accum. Inlet Limiting Flow Check Valve	Aux. Bldg. Contr. Area EL 054'
1EG XV 2593	14833	Supply Side Accum. Outlet Limiting Flow Check Valve	Aux. Bldg. Diesel Area EL 054'
1EC XV 4660	14833	Fuel Pool Cooling and Torus Water Cleanup Skimmer Surge Tank Limiting Flow Check Valve	Reactor Bldg. EL 162'
1EC XV 4662A	14833	Fuel Pool Cooling Pumps, Suction Side Limiting Flow Check Valve	Reactor Bldg. EL 162'
1EC XV 4662B	14833	Fuel Pool Cooling Pumps, Suction Side Limiting Flow Check Valve	Reactor Bldg. Drywell EL 162'
1EC XV 4673A	14833	Fuel Pool Cooling Pumps, Discharge Side Limiting Flow Check Valve	Reactor Bldg. Drywell EL 162'
1EC XV 4673B	14833	Fuel Pool Cooling Pumps, Discharge Side Limiting Flow Check Valve	Reactor Bldg. Drywell EL 162'
1EC XV 4682A	14833	Fuel Pool Cooling System Limiting Flow Check Valve	Reactor Bldg. Drywell EL 162'
1EC XV 4682B	14833	Fuel Pool Cooling System Limiting Flow Check Valve	Reactor Bldg. Drywell EL 162'
1BH XV 2077A	14833	Standby Liquid Control	Reactor Bldg. Drywell EL 077'
1BH XV 2077B	14833	Standby Liquid Control	Reactor Bldg. Drywell EL 077'
5M15SIDN2	Not Applicable	5 Valve Manifold w/threaded connection	Various Locations EL Various
2M15SIDN2	Not Applicable	2 Valve Manifold w/threaded connection	Various Locations EL Various

TABLE 3.11-4
 MECHANICAL EQUIPMENT SELECTED FOR HARSH
 ENVIRONMENT QUALIFICATION

P.O. # J715(Q) Component: Nuclear Instrument Valves

Manufacturer: Dragon Valves

<u>I.D. No.*</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
GB1551PN2	133770N-7	Instrument Calibration Isolation Valves and High Point Vent Valves	Approx. 5% of these 1500 valves are used in the Diesel Gen. Bldg. and the Balance of Plant. Remaining 95% in Reactor Bldg.
GB1551KN2	13770N-6SE7	Instrument Calibration Isolation Valves and High Point Vent Valves	550 valves purchased for various applications in the Reactor Bldg.
GB1552HN2	13769N-6SE	Instrument Calibration Isolation Valves and High Point Vent Valves	220 valves purchased for various applications in the Reactor Bldg.

*These valves will not receive unique tag numbers:
 Valves classification number is shown here.

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 47 OF 88

P.O. # 301(Q) Component: Large Valves

Manufacturer: Anchor Darling Valve Co.

SHEET 1 of 13

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
OAPHV 2072	Not Applicable	RB Isolation Valve	Reactor Bldg. EL 054'
OAPHV 2073	Not Applicable	RB Isolation Valve	Reactor Bldg. EL 054'
OBNHV 2069	Not Applicable	RB Isolation Valve	Reactor Bldg. EL 054'
1ANHV 2600	Not Applicable	Demin. Water to Reactor Bldg.	Reactor Bldg. EL 054'
1BCHV F003A Ell	Not Applicable	RHR HX A Shell Outlet	Reactor Bldg. EL 054'
1BCHV F003B Ell	Not Applicable	RHR HTX B Shell Outlet	Reactor Bldg. EL 054'
1BCHV F004A Ell	Not Applicable	RHR Pump A Suppr. Pool Suct.	Reactor Bldg. EL 054'
1BCHV F004B Ell	Not Applicable	RHR Pump B Suppr. Pool Suct.	Reactor Bldg. EL 054'
1BCHV F004C Ell	Not Applicable	RHR Pump C Suppr. Pool Suct.	Reactor Bldg. EL 054'
1BCHV F004D Ell	Not Applicable	RHR Pump D Suppr. Pool Suct.	Reactor Bldg. EL 054'
1BCHV F006A Ell	Not Applicable	RHR Pump A Shtdwn Clg Suct Valve	Reactor Bldg. EL 054'
1BCHV F006B Ell	Not Applicable	RHR Pump B Shtdwn Clg Suct	Reactor Bldg. EL 054'
1BCHV F007A Ell	Not Applicable	RHR Pump A Min Flow Bypass	Reactor Bldg. EL 054'
1BCHV F007B Ell	Not Applicable	RHR Pump B Min Flow Bypass	Reactor Bldg. EL 054'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 48 OF 88

P.O. # 301(Q) Component: Large Valves Manufacturer: Anchor Darling Valve Co.

SHEET 2 of 13

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1BCHV F007C E11	Not Applicable	RHR Pump C Min Flow Bypass	Reactor Bldg. EL 054'
1BCHV F007D E11	Not Applicable	RHR Pump D Min Flow Bypass	Reactor Bldg. EL 054'
1BCHV F010A E11	Not Applicable	RHR Pump C Test Return	Reactor Bldg. EL 054'
1BCHV F010B E11	Not Applicable	RHR Pump D Test Return	Reactor Bldg. EL 054'
1BCHV F011A E11	Not Applicable	RHR HX A To Suppr Pool	Reactor Bldg. EL 054'
1BCHV F011B E11	Not Applicable	RHR HX B Test Return	Reactor Bldg. EL 054'
1BCHV F016A E11	Not Applicable	RHR Cont Spray Outbd	Reactor Bldg. EL 102'
1BCHV F016B E11	Not Applicable	RHR Cntmt Spray B Outbd	Reactor Bldg. EL 132'
1BCHV F021A E11	Not Applicable	RHR Cntmnt Spray Inbd	Reactor Bldg. EL 102'
1BCHV F021B E11	Not Applicable	RHR Cont Spray B Inbd	Reactor Bldg. EL 132'
1BCHV F024A E11	Not Applicable	RHR Pump A Test Return	Reactor Bldg. EL 054'
1BCHV F024B E11	Not Applicable	RHR Pump B Test Return	Reactor Bldg. EL 054'
1BCHV F026A E11	Not Applicable	RHR HX A To Rcic	Reactor Bldg. EL 054'
1BCHV F026B E11	Not Applicable	RHR HX B To Rcic	Reactor Bldg. EL 054'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 49 OF 88

P.O. # 301(Q) Component: Large Valves Manufacturer: Anchor Darling Valve Co.

SHEET 3 of 13

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1BCHV F027A E11	Not Applicable	RHR Pump A Suppr Pool Spray	Reactor Bldg. EL 077'
1BCHV F027B E11	Not Applicable	RHR Pump B Suppr Pool Spray	Reactor Bldg. EL 077'
1BCHV F040 E11	Not Applicable	RHR Disch To Rdwst Isln Outbd	Reactor Bldg. EL 077'
1BCHV F047A E11	Not Applicable	RHR HX A Shell Side Inlet	Reactor Bldg. EL 077'
1BCHV F047B E11	Not Applicable	RHR HX B Shell Side Inlet	Reactor Bldg. EL 077'
1BCHV F049 E11	Not Applicable	RHR Flush to Rdwst Isln Inbd	Reactor Bldg. EL 077'
1BCHV F075 E11	Not Applicable	RHR Svce Wtr Cross Tie	Reactor Bldg. EL 077'
1BCHV 4420A E11	Not Applicable	RHR HX A Vac RLF Isln	Reactor Bldg. EL 077'
1BCHV 4420B E11	Not Applicable	RHR HX B Vac RLF Isln	Reactor Bldg. EL 077'
1BCHV 4421 E11	Not Applicable	RHR HX B Vac RLF To Torus	Reactor Bldg. EL 077'
1BCHV 4439 E11	Not Applicable	RX Bldg Isln/RHR B To Liq RW	Reactor Bldg. EL 077'
1BDHV F010 E51	Not Applicable	RCIC Pump Suction From CS Tank	Reactor Bldg. EL 054'
1BDHV F031 E51	Not Applicable	RCIC Pump Suction From Sup Pool	Reactor Bldg. EL 054'
1BEHV F001A E21	Not Applicable	Core Spray Pump AP206 Suction	Reactor Bldg. EL 054'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 50 OF 88

P.O. # 301(Q) Component: Large Valves Manufacturer: Anchor Darling Valve Co.

SHEET 4 of 13

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1BEHV F001B E21	Not Applicable	Core Spray Pump BP206 Suction	Reactor Bldg. EL 054'
1BEHV F001C E21	Not Applicable	Core Spray Pump CP206 Suction	Reactor Bldg. EL 054'
1BEHV F001D E21	Not Applicable	Core Spray Pump DP206 Suction	Reactor Bldg. EL 054'
1BEHV F015A E21	Not Applicable	CS Loop A Test Return Valve	Reactor Bldg. EL 077'
1BEHV F015B E21	Not Applicable	CS Loop B Test Return Valve	Reactor Bldg. EL 077'
1BEHV F031A E21	Not Applicable	Core Spray Loop A Min Flow Bypass	Reactor Bldg. EL 054'
1BEHV F031B E21	Not Applicable	Core Spray Loop B Min Flow Bypass	Reactor Bldg. EL 054'
1BPHV 4005	Not Applicable	CRD Pump Suction RX Bldg Isln	Reactor Bldg. EL 054'
1BJHV F004 E41	Not Applicable	HPCI Pump Suction From CST	Reactor Bldg. EL 054'
1BJHV F042 E41	Not Applicable	HPCI Pump Suct From Supp Pool	Reactor Bldg. EL 054'
1ECHV 4676A	Not Applicable	Filtr Demin Inlet Outbd Isln	Reactor Bldg. EL 077'
1ECHV 4676B	Not Applicable	Filtr Demin Inlet Inbd Isln	Reactor Bldg. EL 077'
1ECHV 4678	Not Applicable	Filtr Demin Outlet Isln	Reactor Bldg. EL 077'
1ECHV 4689A	Not Applicable	Fuel Pool Filtr Demin Bypass	Reactor Bldg. EL 162'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 51 OF 88

P.O. # 301(Q) Component: Large Valves

Manufacturer: Anchor Darling Valve Co.

SHEET 5 of 13

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1ECHV 4689B	Not Applicable	Fuel Pool Fltr Demin Bypass	Reactor Bldg. EL 162'
1EDHV 2553	Not Applicable	React Recirc Pump Cooling Isln	Reactor Bldg. EL 102'
1EDHV 2554	Not Applicable	React Recirc Pump Cooling Isln	Drywell Torus, Reactor Bldg. EL 100'
1EDHV 2555	Not Applicable	React Recirc Pump Cooling Isln	Reactor Bldg. EL 102'
1EDHV 2556	Not Applicable	React Recirc Pump Cooling Isln	Drywell Torus, Reactor Bldg. EL 100'
1EEHV 4652	Not Applicable	Torus Wtr Clnup Supr Pl Isln	Reactor Bldg. EL 054'
1EEHV 4655	Not Applicable	Torus Wtr Clnup RX Bldg Isln	Reactor Bldg. EL 054'
1EEHV 4656	Not Applicable	Torus Wtr Clnup RX Bldg Isln	Reactor Bldg. EL 054'
1EEHV 4663	Not Applicable	Torus Wtr Clnup RX Bldg Isln	Reactor Bldg. EL 077'
1EEHV 4679	Not Applicable	Torus Wtr Clnup RX Bldg Isln	Reactor Bldg. EL 054'
1EEHV 4680	Not Applicable	Torus Wtr Clnup Suppr Pl Isln	Reactor Bldg. EL 054'
1EEHV 4681	Not Applicable	Torus Wtr Clnup Suppr Pl Isln	Reactor Bldg. EL 054'
1EGHV 2290A	Not Applicable	RHR Pump RM Unit Cooler AVH210	Reactor Bldg. EL 054'
1EGHV 2290B	Not Applicable	RHR Pump RM Unit Cooler BVH210	Reactor Bldg. EL 054'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 52 OF 88

P.O. # 301(Q) Component: Large Valves

Manufacturer: Anchor Darling Valve Co.

SHEET 6 of 13

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1EGHV 2290C	Not Applicable	RHR Pump RM Unit Cooler CVH210	Reactor Bldg. EL 054'
1EGHV 2290D	Not Applicable	RHR Pump RM Unit Cooler DVH210	Reactor Bldg. EL 054'
1EGHV 2290E	Not Applicable	RHR Pump RM Unit Coolers EVH210	Reactor Bldg. EL 077'
1EGHV 2290F	Not Applicable	RHR Pump RM Unit Coolers FVH210	Reactor Bldg. EL 077'
1EGHV 2290G	Not Applicable	RHR Pump RM Unit Coolers GVH210	Reactor Bldg. EL 054'
1EGHV 2290H	Not Applicable	RHR Pump RM Unit Coolers HVH210	Reactor Bldg. EL 054'
1EGHV 2292A	Not Applicable	HPCI Pump RM Unit Cooler AVH209	Reactor Bldg. EL 054'
1EGHV 2292B	Not Applicable	HPCI Pump RM Unit Cooler BVH209	Reactor Bldg. EL 054'
1EGHV 2302A	Not Applicable	FRVS Cooling Coil AVH213	Reactor Bldg. EL 132'
1EGHV 2302B	Not Applicable	FRVS Cooling Coil BVH213	Reactor Bldg. EL 178'
1EGHV 2302C	Not Applicable	FRVS Cooling Coil CVH213	Reactor Bldg. EL 132'
1EGHV 2302D	Not Applicable	FRVS Cooling Coil DVH213	Reactor Bldg. EL 162'
1EGHV 2302E	Not Applicable	FRVS Cooling Coil EVH213	Reactor Bldg. EL 162'
1EGHV 2302F	Not Applicable	FRVS Cooling Coil FVH213	Reactor Bldg. EL 178'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

P.O. # 301(Q) Component: Large Valves

Manufacturer: Anchor Darling Valve Co.

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1EGHV 2325A	Not Applicable	Core Spray Pump RM Unt Cls AVH211	Reactor Bldg. EL 054'
1EGHV 2325B	Not Applicable	Core Spray Pump Rm Unt Cls BVH211	Reactor Bldg. EL 054'
1EGHV 2325C	Not Applicable	Core Spray Pump RM Unt Cls CVH211	Reactor Bldg. EL 054'
1EGHV 2325D	Not Applicable	Core Spray Pump RM Unt Cls DVH211	Reactor Bldg. EL 054'
1EGHV 2325E	Not Applicable	Core Spray Pump RM Unt Cls EVH211	Reactor Bldg. EL 054'
1EGHV 2325F	Not Applicable	Core Spray Pump RM Unt Cls FVH211	Reactor Bldg. EL 054'
1EGHV 2325G	Not Applicable	Core Spray Pump RM Unt Cls GVH211	Reactor Bldg. EL 054'
1FCHV F059 E51	Not Applicable	RCIC Stm Exh Isln Valve	Reactor Bldg. EL 077'
1FCHV F062 E51	Not Applicable	RCIC Vaccum Breaker Isln Valve	Reactor Bldg. EL 077'
1FCHV F084 E51	Not Applicable	RCIC Vacuum Breaker Isln Valve	Reactor Bldg. EL 077'
1FDHV F071 E41	Not Applicable	HPCI Stm Exhaust Isln Valve	Reactor Bldg. EL 077'
1FDHV F075 E41	Not Applicable	HPCI Turb Exh Vac Brkr Isln	Reactor Bldg. EL 077'
1FDHV F079 E41	Not Applicable	HPCI Turb Exh Vac Brkr Isln	Reactor Bldg. EL 077'
1GBHV 9531A1	Not Applicable	CH Wtr Loop A Sply CTMT Isln	Reactor Bldg. EL 102'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 54 OF 88

P.O. # 301(Q) Component: Large Valves Manufacturer: Anchor Darling Valve Co.

SHEET 8 of 13

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1GBHV 9531A2	Not Applicable	CH Wtr Loop A RTN Ctmt Isln	Reactor Bldg. EL 102'
1GBHV 9531A3	Not Applicable	CH Wtr Loop B Sply Ctmt Isln	Reactor Bldg. EL 102'
1GBHV 9531A4	Not Applicable	CH Wtr Loop B RTN Ctmt Isln	Reactor Bldg. EL 102'
1GBHV 9531B1	Not Applicable	CH Wtr Loop A Sply Ctmt Isln	Drywell Torus, Reactor Bldg. EL 100'
1GBHV 9531B2	Not Applicable	CH Wtr Loop A RTN Ctmt Isln	Drywell Torus, Reactor Bldg. EL 100'
1GBHV 9531B3	Not Applicable	CH Wtr Loop B Sply Ctmt Isln	Drywell Torus, Reactor Bldg. EL 100'
1GBHV 9531B4	Not Applicable	CH Wtr Loop B RTN Ctmt Isln	Drywell Torus, Reactor Bldg. EL 077'
1GBHV 9532-1	Not Applicable	CH Wtr RTN Reactor Bldg Isln	Reactor Bldg. EL 162'
1GBHV 9532-2	Not Applicable	CH Wtr Sply Reactor Bldg Isln	Reactor Bldg. EL 162'
1GSHV 5050A	Not Applicable	Drywell To H2 Recomb AS205	Drywell Torus, Reactor Bldg. EL 145'
1GSHV 5050B	Not Applicable	Drywell To H2 Recomb BS205	Reactor Bldg. EL 102'
1GSHV 5052A	Not Applicable	Drywell To H2 Recomb AS205	Reactor Bldg. EL 145'
1GSHV 5052B	Not Applicable	Drywell To H2 Recomb BS205	Reactor Bldg. EL 102'
1GSHV 5053A	Not Applicable	H2 Recomb AS205 Suppr Pool	Reactor Bldg. EL 077'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 55 OF 88

P.O. # 301(0) Component: Large Valves Manufacturer: Anchor Darling Valve Co.

SHEET 9 of 13

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1GSHV 5053B	Not Applicable	H2 Recomb BS205 To Suppr Pool	Reactor Bldg. EL 077'
1GSHV 5054A	Not Applicable	H2 Recomb AS205 To Suppr Pool	Reactor Bldg. EL 077'
1GSHV 5054B	Not Applicable	H2 Recomb BS205 To Suppr Pool	Reactor Bldg. EL 077'
1HBHV F003 G14	Not Applicable	Isln Closure Signal Valve	Drywell Torus, Reactor Bldg. EL 077'
1HBHV F004 G14	Not Applicable	Isln Closure Signal Valve	Reactor Bldg. EL 077'
1HBHV F019 G14	Not Applicable	Drywell Equip Drain Sump Pump	Drywell Torus, Reactor Bldg. EL 077'
1HBHV F020 G14	Not Applicable	Drywell Equip Drain Sump Pump	Reactor Bldg. EL 077'
1HBHV 5262	Not Applicable	RB/Drywell Dr To Dr Coll Tk	Reactor Bldg. EL 077'
1HBHV 5275	Not Applicable	RB/Drywell Dr to Waste Coll Tk	Reactor Bldg. EL 077'
1HCHV 5551	Not Applicable	Reactor Bldg Isln Valve Unit 1	Reactor Bldg. EL 132'
1KAHV 7626	Not Applicable	Reactor Bldg Isolation	Reactor Bldg. EL 077'
1KBHV 7269	Not Applicable	Reactor Bldg Isolation	Reactor Bldg. EL 077'
1KCHV 3408M	Not Applicable	Sys 1PD3-1PD11 Isln Valve 1V049	Reactor Bldg. EL 077'
1KGHV 7801	Not Applicable	Breathing Air Valve	Reactor Bldg. EL 054'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 56 OF 88

P.O. # 301(O) Component: Large Valves Manufacturer: Anchor Darling Valve Co.

SHEET 10 of 13

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1 KH HV 5035	Not Applicable	RB Nitrogen Sply Valve	Reactor Bldg. EL 077'
1 EG HV 2398A-H	Not Applicable	D.G. Room Cooler Valve	Auxiliary Bldg. EL 082'
1 EG HV 2325H	Not Applicable	Core Spray Pump Rm Unit Cls	Reactor Bldg. EL 054'
1 KC HV 3474	Not Applicable	Spare Valve	Unassigned
1 KC HV 3408P	Not Applicable	Spare Valve	Unassigned
1 KC HV 3408R	Not Applicable	Spare Valve	Unassigned
Unassigned	Not Applicable	(4"-HBC-GB)	Unassigned
Unassigned	Not Applicable	(6"-HBC-GB)	Unassigned
Unassigned	Not Applicable	(4"-HBC-GT)	Unassigned
Unassigned	Not Applicable	(3"-HCC-GB)	Unassigned
Unassigned	Not Applicable	(6"-HCC-GB)	Unassigned
Unassigned	Not Applicable	(8"-HCC-GB)	Unassigned
Unassigned	Not Applicable	(6"-HCC-CK)	Unassigned

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 57 OF 88

P.O. # 301(Q) Component: Large Valves Manufacturer: Anchor Darling Valve Co.

SHEET 11 of 13

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
Unassigned	Not Applicable	(8"-HCC-CK)	Unassigned
Unassigned	Not Applicable	(6"-HEC-CK)	Unassigned
Unassigned	Not Applicable	(6"-HBC-GT)	Unassigned
Unassigned	Not Applicable	(8"-HBC-GT)	Unassigned
Unassigned	Not Applicable	(6"-GBB-TCK)	Unassigned
Unassigned	Not Applicable	(18"-GBB-CK)	Unassigned
Unassigned	Not Applicable	(12"-GBB-CK)	Unassigned
Unassigned	Not Applicable	(4"GBB-CK)	Unassigned
Unassigned	Not Applicable	(3"GBB-CK)	Unassigned
Unassigned	Not Applicable	(3"-GBB-GB)	Unassigned
Unassigned	Not Applicable	(12"-GBB-GB)	Unassigned
Unassigned	Not Applicable	(16"-GBB-GB)	Unassigned
Unassigned	Not Applicable	(6"-GBC-GT)	Unassigned

TABLE 3.11-4
 MECHANICAL EQUIPMENT SELECTED FOR HARSH
 ENVIRONMENT QUALIFICATION

P.O. # 301(Q) Component: Large Valves

Manufacturer: Anchor Darling Valve Co.

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
Unassigned	Not Applicable	(6"-HBB-GT)	Unassigned
Unassigned	Not Applicable	(16"-HBB-GT)	Unassigned
Unassigned	Not Applicable	(20"-HBB-GT)	Unassigned
Unassigned	Not Applicable	(4"-HBB-GT)	Unassigned
Unassigned	Not Applicable	(8"-HBB-GT)	Unassigned
Unassigned	Not Applicable	(20"-HBB-GT)	Unassigned
Unassigned	Not Applicable	(3"-HBB-GT)	Unassigned
Unassigned	Not Applicable	(3"-HBB-GT)	Unassigned
Unassigned	Not Applicable	(10"-HBB-GT)	Unassigned
Unassigned	Not Applicable	(3"-HBB-GB)	Unassigned
Unassigned	Not Applicable	(14"-HBB-GB)	Unassigned
Unassigned	Not Applicable	(6"-HBB-GB)	Unassigned
Unassigned	Not Applicable	(6"-HBB-GB)	Unassigned

TABLE 3.11-4
 MECHANICAL EQUIPMENT SELECTED FOR HARSH
 ENVIRONMENT QUALIFICATION

P.O. # 301(Q) Component: Large Valves

Manufacturer: Anchor Darling Valve Co.

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
Unassigned	Not Applicable	(6"-HBB-TCK)	Unassigned
Unassigned	Not Applicable	(10"-HBB-TCK)	Unassigned
Unassigned	Not Applicable	(16"-HBB-TCK)	Unassigned
Unassigned	Not Applicable	(20"-HBB-TCK)	Unassigned

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 60 OF 88

P.O. # P302(Q) Component: Nuclear Valves

Manufacturer: Anchor Darling Valve Company

SHEET 1 of 7

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
IABHV F016 B21	Not Applicable	Steam Line Drain Inbd Isln	Drywell Torus, Reactor Bldg. EL 100'
IABHV F019 B21	Not Applicable	Steam Line Drain Outbd Isln	Reactor Bldg. EL 102'
IABHV F020 B21	Not Applicable	Main Steam Line Equalizer Valve	Reactor Bldg. EL 132'
IABHV F021 B21	Not Applicable	Steam Line Start-up Drain Valve	Reactor Bldg. EL 102'
IABHV 3631A	Not Applicable	Main Steam Line A Stop Valve	Reactor Bldg. EL 132'
IABHV 3631B	Not Applicable	Main Steam Line B Stop Valve	Reactor Bldg. EL 132'
IABHV 3631C	Not Applicable	Main Steam Line C Stop Valve	Reactor Bldg. EL 132'
IABHV 3631D	Not Applicable	Main Steam Line D Stop Valve	Reactor Bldg. EL 132'
IAEHV F011A B21	Not Applicable	Feedwater Inlet A Shutoff	Drywell Torus, Reactor Bldg. EL 121'
IAEHV F011B B21	Not Applicable	Feedwater Inlet B Shutoff	Drywell Torus, Reactor Bldg. EL 121'
IAEHV F032A B21	Not Applicable	Fdw Line A Inlet Check Valve	Reactor Bldg. EL 132'
IAEHV F032B B21	Not Applicable	Fdw Line B Inlet Check Valve	Reactor Bldg. EL 132'
IAEHV F039 G33	Not Applicable	RWCU Disch To Feedwater	Reactor Bldg. EL 102'
IAEHV F074A B21	Not Applicable	Fdw Line A Inlet Check Valve	Reactor Bldg. EL 102'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 61 OF 88

P.O. # P302(Q) Component: Nuclear Valves

Manufacturer: Anchor Darling Valve Company

SHEET 2 of 7

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1AEHV F074B B21	Not Applicable	Fdw Line B Inlet Check Valve	Reactor Bldg. EL 102'
1APHV F011 E41	Not Applicable	HPCI Disch Isln To Cst Sht Off	Reactor Bldg. EL 077'
1BCHV F008 E11	Not Applicable	RHR Outboard Shtdn Clg Isln	Reactor Bldg. EL 102'
1BCHV F009 E11	Not Applicable	RHR Inbd Shtdn Clg Isln	Drywell Torus, Reactor Bldg. EL 100'
1BCHV F015A E11	Not Applicable	RHR Shtdn Clg Inject Outbd	Reactor Bldg. EL 102'
1BCHV F015B E11	Not Applicable	RHR Shtdn Clg Inject Outbd	Reactor Bldg. EL 102'
1BCHV F017A E11	Not Applicable	RHR/LPCI Line A	Reactor Bldg. EL 102'
1BCHV F017B E11	Not Applicable	LPCI Injection Line B	Reactor Bldg. EL 102'
1BCHV F017C E11	Not Applicable	RHR/LPCI Line C	Reactor Bldg. EL 102'
1BCHV F017D E11	Not Applicable	LPCI Injection Line D	Reactor Bldg. EL 102'
1BCHV F022 E11	Not Applicable	RHR RPV Head Spray Isln Inbd	Drywell Torus, Reactor Bldg. EL 145'
1BCHV F023 E11	Not Applicable	RHR RPV Head Spray Isln Outbd	Reactor Bldg. EL 145'
1BCHV F052A E11	Not Applicable	HPCI To RHR HX A	Reactor Bldg. EL 077'
1BCHV F052B E11	Not Applicable	RHR HX B Inlet Stop From HPCI	Reactor Bldg. EL 077'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 62 OF 88

P.O. # P302(Q) Component: Nuclear Valves

Manufacturer: Anchor Darling Valve Company

SHEET 3 of 7

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1BDHV F012 E51	Not Applicable	RCIC Pump Discharge Valve	Reactor Bldg. EL 054'
1BDHV F013 E51	Not Applicable	RCIC Feedwater Isln Valve	Reactor Bldg. EL 102'
1BDHV F022 E51	Not Applicable	RCIC Test Loop Isln Valve	Reactor Bldg. EL 077'
1BEHV F004A E21	Not Applicable	Core Spray Loop A Isln Valve	Reactor Bldg. EL 102'
1BEHV F004B E21	Not Applicable	Core Spray Loop B Isln Valve	Reactor Bldg. EL 102'
1BEHV F005A E21	Not Applicable	CS Loop A Containment Isln	Reactor Bldg. EL 102'
1BEHV F005B E21	Not Applicable	CS Loop B Containment Isln	Reactor Bldg. EL 102'
1BGHV F001 G33	Not Applicable	RWCU Inbd Isln Valve	Drywell Torus, Reactor Bldg. EL 145'
1BGHV F004 G33	Not Applicable	RWCU Outbd-Isln Valve	Reactor Bldg. EL 145'
1BGHV F031 G33	Not Applicable	RWCU Blowdown Orifice Bypass	Reactor Bldg. EL 132'
1BGHV F034 G33	Not Applicable	RWCU Disch to Condenser	Reactor Bldg. EL 077'
1BGHV F035 G33	Not Applicable	RWCU Disch To Equip Drain	Reactor Bldg. EL 077'
1BGHV F100 G33	Not Applicable	Suction From Recirc Loop A	Drywell Torus, Reactor Bldg. EL 077'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 63 OF 88

P.O. # P302(Q) Component: Nuclear Valves

Manufacturer: Anchor Darling Valve Company

SHEET 4 of 7

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>	
1BGHV F101	G33	Not Applicable	Suction From RPV Bdt Drn	Drywell Torus, Reactor Bldg. EL 100'
1BGHV F102	G33	Not Applicable	Suction From Recirc Inside Cont	Drywell Torus, Reactor Bldg. EL 100'
1BGHV F106	G33	Not Applicable	Suction From Recirc Loop B	Drywell Torus, Reactor Bldg. EL 077'
1BJHV F006	E41	Not Applicable	HPCI/Pump Discharge Valve	Reactor Bldg. EL 102'
1BJHV F007	E41	Not Applicable	HPCI Pump Discharge Valve	Reactor Bldg. EL 054'
1BJHV F008	E41	Not Applicable	HPCI Test Bypass To CST	Reactor Bldg. EL 077'
1BJHV F012	E41	Not Applicable	Min Flow Bypass Valve Flow	Reactor Bldg. EL 054'
1BJHV 8278		Not Applicable	HPCI Pump Dsch To Fdwtr Line	Reactor Bldg. EL 124'
1FCHV F007	E51	Not Applicable	Steam Supply Isln Valve	Drywell Torus, Reactor Bldg. EL 100'
1FCHV F008	E51	Not Applicable	Steam Supply Isln Valve	Reactor Bldg. EL 102'
1FCHV F045	E51	Not Applicable	Recic Turb Steam Stop	Reactor Bldg. EL 054'
1FDHV F001	E41	Not Applicable	Turb Steam Supply Valve	Reactor Bldg. EL 054'
1FDHV F002	E41	Not Applicable	HPCI Pump Turb Stm Isln Valve	Drywell Torus, Reactor Bldg, EL 100'
1FDHV 1 03	E41	Not Applicable	HPCI Pump Turb Stm Isln Valve	Reactor Bldg. EL 102'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 64 OF 88

P.O. # P302(Q) Component: Nuclear Valves

Manufacturer: Anchor Darling Valve Company

SHEET 5 of 7

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1 BG HV F102 G33	Not Applicable	Suction line valve from Recirc System	Drywell Torus, Reactor Bldg. EL 101'
1 BJ HV F012 E41	Not Applicable	HPCI Pump Discharge Isln Valve to Suppression Pool	Drywell Torus, Reactor Bldg. EL 062'
1 BE HV F005A E21	Not Applicable	Core Spray Isolation Valve	Reactor Bldg. EL 109'
1 BE HV F005B E21	Not Applicable	Core Spray Isolation Valve	Reactor Bldg. El 109'
1 BC V074	Not Applicable	RHR HX to Recirc System Valve	Drywell Torus, Reactor Bldg. EL 108'
1 BC V183	Not Applicable	RHR HX to recirc. System Valve	Drywell Torus, Reactor Bldg. EL 106'
1 BG HV F031 G33	Not Applicable	RWCU Blowdown orifice bypass	Reactor Bldg. EL 133'
1 BG HV F044 G33	Not Applicable	RWCU Filter demin bypass	Reactor Bldg. EL 146'
1ABHV 1003	Not Applicable	Main Steam To Stm Seal Evap	Turbine Bldg. EL 120'
1ABHV 1005	Not Applicable	Cond Hotwell Sparger Stm Spply	Turbine Bldg. EL 120'
1ABHV 1006	Not Applicable	Main Steam To Rept.	Turbine Bldg. EL 137'
1ABHV 2016A	Not Applicable	Main Steam Supply Shut Off	Turbine Bldg. EL 077'
1ABHV 2016B	Not Applicable	Main Steam Supply Shut Off	Turbine Bldg. EL 077'
1BGHV F042 G33	Not Applicable	Regen HX Rtn Isln Valve	Reactor Bldg. EL 145'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 65 OF 88

P.O. # P302(Q) Component: Nuclear Valves

Manufacturer: Anchor Darling Valve Company

SHEET 6 of 7

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1BGHV F044 G33	Not Applicable	RWCU Filter Demin Bypass	Reactor Bldg. EL 145'
1BGHV F104 G33	Not Applicable	RWCU HX Bypass Valve	Reactor Bldg. EL 132'
Unassigned	Not Applicable	(3"-DBA-GT)	Unassigned
Unassigned	Not Applicable	(3"-DBC-GT)	Unassigned
Unassigned	Not Applicable	(4"-DBC-GT)	Unassigned
Unassigned	Not Applicable	(3"-DBC-GB)	Unassigned
Unassigned	Not Applicable	(12"-DLA-GT)	Unassigned
Unassigned	Not Applicable	(20"-DLA-GT)	Unassigned
Unassigned	Not Applicable	(4"-EBC-GT)	Unassigned
Unassigned	Not Applicable	(6"-DBA-CK)	Unassigned
Unassigned	Not Applicable	(14"-DBB-CK)	Unassigned
Unassigned	Not Applicable	(6"-DBB-CK)	Unassigned
Unassigned	Not Applicable	(3"-DBC-CK)	Unassigned
Unassigned	Not Applicable	(24"-DLA-CK)	Unassigned

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 66 OF 88

P.O. # P302(Q) Component: Nuclear Valves

Manufacturer: Anchor Darling Valve Company

SHEET 7 of 7

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
Unassigned	Not Applicable	(4"-DBB-TCK)	Unassigned
Unassigned	Not Applicable	(4"-DBB-TCK)	Unassigned
Unassigned	Not Applicable	(10"-DBB-TCK)	Unassigned
Unassigned	Not Applicable	(3"-DBB-TCK)	Unassigned

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 67 OF 88

P.O. #P303A(O) Component: Small Valves

Manufacturer: Rockwell International

SHEET 1 of 12

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1ABHV F067A B21	3624-MT	MS Line A Outbd Drain Valve	Reactor Bldg. EL 102'
1ABHV F067B B21	3624-MT	MS Line B Outbd Drain Valve	Reactor Bldg. EL 102'
1ABHV F067C B21	3624-MT	MS Line C Outbd Drain Valve	Reactor Bldg. EL 102'
1ABHV F067D B21	3624-MT	MS Line D Outbd Drain Valve	Reactor Bldg. EL 102'
1ABHV F070A B21	3624-MT	MS Line Downstream Drain Valve	Reactor Bldg. EL 102'
1ABHV F070B B21	3624-MT	MS Line B Downstream Drain Valve	Reactor Bldg. EL 102'
1ABHV F070C B21	3624-MT	MS Line C Downstream Drain Valve	Reactor Bldg. EL 102'
1ABHV F070D B21	3624-MT	MS Line D Downstream Drain Valve	Reactor Bldg. EL 102'
1ABHV F071 B21	3624-MT	ST Hdr Downstream Drain Isln Valve	Reactor Bldg. EL 102'
1BBHV F001 B21	3624-MT	RV Head Vent To Drw Inbd Isln	Drywell Torus, Reactor Bldg. EL 162'
1BBHV F002 B21	3624-MT	RV Head Vent To Drw Outbd Isln	Drywell Torus, Reactor Bldg. EL 162'
1BBHV F005 B21	3624-MT	RV Head Vent To Steam Line A	Drywell Torus, Reactor Bldg. EL 162'
1BCHV F103A E11	3624-MT	HX A Vent Valve Outbd	Reactor Bldg. EL 077'
1BCHV F103B E11	3624-MT	RHR Heat Exchr B Vent	Reactor Bldg. EL 077'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 68 OF 88

P.O. # P303A(0) Component: Small Valves

Manufacturer: Rockwell International

SHEET 2 of 12

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1BCHV F104A E11	3624-MT	HX A Vent Valve Inbd	Reactor Bldg. EL 077'
1BCHV F104B E11	3624-MT	RHR Heat Exchr B Vent	Reactor Bldg. EL 077'
1BCHV F122A E11	36124MMRT1	RHR HV-F050A E11 Bypass	Drywell Torus, Reactor Bldg. EL 100'
1BCHV F122B E11	36124MMRT1	RHR HV-F050B-E11 Bypass	Drywell Torus, Reactor Bldg. EL 100'
1BCHV F146A E11	36124MMRT1	RHR HV-F041A E11 Bypass	Reactor Bldg. EL 100'
1BCHV F146B E11	36124MMRT1	RHR HV-F041B E11 Bypass	Drywell Torus, Reactor Bldg. EL 100'
1BCHV F146C E11	36124MMRT1	RHR HV-F041C E11 Bypass	Drywell Torus, Reactor Bldg. EL 100'
1BCHV F146D E11	36124MMRT1	RHR 1BC HV-F041D E11 Bypass	Drywell Torus, Reactor Bldg. EL 100'
1BCHV 4428	3684-MT	Steam Line Warmup Valve	Reactor Bldg. EL 077'
1BDHV F046 E51	3624-MT	RCIC Turb Cig Wtr Supply	Reactor Bldg. EL 054'
1BEHV F039A E21	36124MMRT1	HV-F006A Bypass Test Valve	Drywell Torus, Reactor Bldg. EL 100'
18EHV F039B E21	36124MMRT1	HV-F006B Bypass Test Valve	Drywell Torus, Reactor Bldg. EL 100'
1BFHV 3800A	36224-F316LMT	Recirc Pump A Supply	Reactor Bldg. EL 077'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 69 OF 88

P.O. # P303A(Q) Component: Small Valves

Manufacturer: Rockwell International

SHEET 3 of 12

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1BFHV 3800B	36224-F316LMT	Recirc Pmp B Sply	Reactor Bldg. EL 077'
1BGHV 3980	3624-MT	React Bldg. Isln Valve To Cwt	Reactor Bldg. EL 132'
1BHHV F006A C41	3624F316-LMT	Slc Outbd Isln Stop Chk A	Drywell Torus, Reactor Bldg. EL 145'
1BHHV F006B C41	3524F316-LMT	Slc Outbd Isln Stop Ckh B	Drywell Torus, Reactor Bldg. EL 145'
1BJHV F059 F41	3624-MT	HPCI L.O. Cooling Water Valve	Reactor Bldg. EL 054'
1BJHV 4803	3624-MT	Suppr Pool Lvl Instr-LP Isln	Reactor Bldg. EL 077'
1BJHV 4804	3624-MT	Suppr Pool Lvl Instr-Hp Tap	Reactor Bldg. EL 054'
1BJHV 4865	3624-MT	Suppr Pool Level Instr-Lp Tap	Reactor Bldg. EL 054'
1BJHV 4866	3624-MT	Suppr Pool Level Instr-Hp Tap	Reactor Bldg. EL 054'
1ECHV 4647	36224-F16LMT	Fuel Pool Makeup SSWS Loop A	Reactor Bldg. EL 162'
1ECHV 4648	36224-F16LMT	LP B Emerg Makeup To Fuel Pool	Reactor Bldg. EL 162'
1EGHV 2293A	36124MMRT1	Rcic Pmp RM Unit Cooler AVH208	Reactor Bldg. EL 054'
1EGHV 2293B	36124MMRT1	Rcic Pmp RM Unit Cooler AVH208	Reactor Bldg. EL 054'
1EGHV 2320A	3624-MT	Containmt Instr Gas Comp Clr	Reactor Bldg. EL 132'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 70 OF 88

P.O. # P303A(Q) Component: Small Valves

Manufacturer: Rockwell International

SHEET 4 of 12

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1EGHV 2320B	3624-MT	Containmt Instr Gas Comp Clr	Reactor Bldg. EL 132'
1EGHV 2321A	3624-MT	Containmt Instr Gas Comp Clr	Reactor Bldg. EL 132'
1EGHV 2321B	3624-MT	Containmt Instr Gas Comp Clr	Reactor Bldg. EL 132'
1EGHV 2446	3624-MT	Emerg Clg Wtr M/U To SACS LP A	Reactor Bldg. EL 102'
1EGHV 2447	3624-MT	Emerg Clg Wtr M/U To SACS LP B	Reactor Bldg. EL 102'
1EGHV 2452A	3624-MT	Containmt Instr Gas Comp Clr A	Reactor Bldg. EL 132'
1EGHV 2452B	3624-MT	Containmt Instr Gas Comp Clr B	Reactor Bldg. EL 132'
1EGHV 2453A	3624-MT	Containmt Instr Gas Comp Clr	Reactor Bldg. EL 132'
1EGHV 2453B	3624-MT	Containmt Instr Gas Comp Clr	Reactor Bldg. EL 132'
1EGHV 2480A	36224F316LMT	Sacs Expan. Tnk Make Up	Reactor Bldg. EL 201'
1EGHV 2480B	36224F316LMT	Sacs Expansion Tnk Make Up	Reactor Bldg. EL 162'
1EGHV 2520A	36124 MMRT1	RHR Cooler Pmp AP202	Reactor Bldg. EL 054'
1EGHV 2520B	36124 MMRT1	RHR Cooler Pmp BP202	Reactor Bldg. EL 054'
1EGHV 2520C	36124 MMRT1	RHR Cooler Pmp CP202	Reactor Bldg. EL 054'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 71 OF 88

P.O. # P303A(O) Component: Small Valves

Manufacturer: Rockwell International

SHEET 5 of 12

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1EGHV 2520D	36124 MMRT1	RHR Cooler Pmp DP202	Reactor Bldg. EL 054'
1FCHV F004 E51	36124 MMRT1	Rcic Vac Tnk Cond Pmp Drain	Reactor Bldg. EL 054'
1FCHV F025 E51	36124 MMRT1	Rcic Steam Trap Isln Valve	Reactor Bldg. EL 054'
1FCHV F026 E51	36124 MMRT1	Rcic Steam Trap Isln Valve	Reactor Bldg. EL 054'
1FCHV F060 E51	3624-MT	Rcic Vacuum Pump Discharge Valve	Reactor Bldg. EL 077'
1FCHV F076 E51	3624-MT	Rcic Isolation Valve Bypass	Drywell Torus, Reactor Bldg. EL 100'
1FCSV F004 E51	36124 MMRT1	Rcic Vac Tnk Cond Pmp Drain	Reactor Bldg. EL 054'
1FCSV F025 E51	36124 MMRT1	Rcic Steam Trap Isln Valve	Reactor Bldg. EL 054'
1FCSV F026 E51	36124 MMRT1	Rcic Steam Trap Isln Valve	Reactor Bldg. EL 054'
1FDHV F026 E41	36124 MMRT1	Vac Tk Cond Pmp Disch To Crw	Reactor Bldg. EL 054'
1FDHV F028 E41	36124 MMRT1	HPCI Stm Trap Isln Valve	Reactor Bldg. EL 054'
1FDHV F029 E41	36124 MMRT1	HPCI Stm Trap Isln Valve	Reactor Bldg. EL 054'
1FDHV F100 E41	3624-MT	HPCI Warmup Line Isln Valve	Drywell Torus, Reactor Bldg. EL 100'
1GSHV 4951	3624-MT	Drywell Purge Exhaust	Drywell Torus, Reactor Bldg. EL 145'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 72 OF 88

P.O. # P303A(Q) Component: Small Valves

Manufacturer: Rockwell International

SHEET 6 of 12

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1GSHV 4955A	3684-F16LMT	Drywell ATM Sample Isln	Reactor Bldg. EL 132'
1GSHV 4955B	3684-F16LMT	Drywell ATM Sample Isln	Reactor Bldg. EL 162'
1GSHV 4959A	3684-F16LMT	Supp Chmbr ATM Sample Isln	Reactor Bldg. EL 077'
1GSHV 4959B	3684-F16LMT	Supp Chmbr ATM Sample Isln	Reactor Bldg. EL 077'
1GSHV 4963	3624-MT	Supp Chmbr Purge Exhaust	Reactor Bldg. EL 077'
1GSHV 4965A	3624-F16LMT	Supp Chmbr ATM Sample Isln	Reactor Bldg. EL 077'
1GSHV 4965B	3624-F16LMT	Supp Chmbr ATM Sample Isln	Reactor Bldg. EL 077'
1GSHV 4966A	3624-F16LMT	Supp Chmbr ATM Samp RTN Isln	Reactor Bldg. EL 077'
1GSHV 4966B	3624-F16LMT	Supp Chmbr ATM Samp RTN Isln	Reactor Bldg. EL 102'
1GSHV 4974	3624-MT	Nitrogen Makeup Isln	Reactor Bldg. EL 102'
1GSHV 4983A	3624-F16LMT	Drywell Sample Isln	Reactor Bldg. EL 132'
1GSHV 4983B	3624-F16LMT	Drywell Sample Isln	Reactor Bldg. EL 162'
1GSHV 4984A	3624-F16LMT	Drywell Sample Isln	Reactor Bldg. EL 162'
1GSHV 4984B	3624-F16LMT	Drywell Sample Isln	Reactor Bldg. EL 162'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 73 OF 88

P.O. # P303A(Q) Component: Small Valves

Manufacturer: Rockwell International

SHEET 7 of 12

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1GSHV 5019A	3624-F16LMT	Drywell ATM Sample Isln	Reactor Bldg. EL 162'
1GSHV 5019B	3624-F16LMT	Drywell ATM Sample Isln	Reactor Bldg. EL 162'
1GSHV 5022A	3624-F16LMT	Chmbr ATM Samp RTN Isln	Reactor Bldg. EL 077'
1GSHV 5022B	3624-F16LMT	Chmbr ATM Samp RTN Isln	Reactor Bldg. EL 102'
1GSHV 5741A	36224-F316LMT	H2/O2 Analyzer A H2 Supply	Reactor Bldg. EL 132'
1GSHV 5741B	36224-F316LMT	H2/O2 Analyzer B H2 Supply	Reactor Bldg. EL 132'
1KLHV 5124A	36224-F316LMT	Supply HDR A Shutoff Valve	Drywell Torus, Reactor Bldg. EL 100'
1KLHV 5124B	36224-F316LMT	Supply HDR B Shutoff Valve	Drywell Torus, Reactor Bldg. EL 121'
1KLHV 5126A	3624-MT	Instr Gas HDR A Outbd Isln	Reactor Bldg. EL 102'
1KLHV 5126B	3624-MT	Instr Gas HDR B Outbd Isln	Reactor Bldg. EL 102'
1KLHV 5147	3624-MT	Instr Gas Cprsr A Suct Isln	Drywell Torus, Reactor Bldg. EL 132'
1KLHV 5148	3624-MT	Instr Gas Cprsr Suct Isln	Drywell Torus, Reactor Bldg. EL 145'
1KLHV 5152A	3624-MT	Instr Gas Hdr A Inbd Isln	Drywell Torus, Reactor Bldg. EL 100'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 74 OF 88

P.O. # P303A(Q) Component: Small Valves

Manufacturer: Rockwell International

SHEET 8 of 12

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1KLHV 5152B	3624-MT	Instr Gas HDR B Inbd Isln	Drywell Torus, Reactor Bldg. EL 112'
1KLHV 5154	36124MMRT1	Instr Gas To Vac RV Outbd Isln	Reactor Bldg. EL 077'
1KLHV 5155	36124MMRT1	Instr Gas To Vac RV Inbd Isln	Reactor Bldg. EL 077'
1KLHV 5156A	36124MMRT1	Instr Gas Sply HDR A Xconn	Reactor Bldg. EL 102'
1KLHV 5156B	36124MMRT1	Instr Gas Sply HDR B Xconn	Reactor Bldg. EL 102'
1KLHV 5160A	3624-MT	Instr Gas CPRSR A LOCA Suct	Reactor Bldg. EL 132'
1KLHV 5160B	3624-MT	Instr Gas CPRSR B LOCA Suct	Reactor Bldg. EL 132'
1KLHV 5162	3624-MT	Instr Gas CPRSRS Suct Isln	Reactor Bldg. EL 132'
1KLHV 5172A	3624-MT	Instr Gas To Vac Brkr Acc A	Reactor Bldg. EL 102'
1KLHV 5172B	3624-MT	Instr Gas To Vac Brkr Acc B	Reactor Bldg. EL 102'
1KLHV 6057	36124MMRT1	Seal Gas Test Line Isln	Reactor Bldg. EL 077'
1KPHV 5829A	3624-MT	MSIV Inbd Seal Gas Sply Sov	Reactor Bldg. EL 102'
1KPHV 5829B	3624-MT	MSIV Outbd Seal Gas Sply Sov	Reactor Bldg. EL 102'
1KPHV 5834A	3624-MT	MSL A MSIV Inbd Seal Gas Sply	Reactor Bldg. EL 102'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 75 OF 88

P.O. # P303A(Q) Component: Small Valves

Manufacturer: Rockwell International

SHEET 9 of 12

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1KPHV 5834B	3624-MT	MSL B MSIV Outbd Seal Gas Sply	Reactor Bldg. EL 102'
1KPHV 5835A	3624-MT	MSL B MSIV Inbd Seal Gas Sply	Reactor Bldg. EL 102'
1KPHV 5835B	3624-MT	MSL B MSIV Outbd Seal Gas Sply	Reactor Bldg. EL 102'
1KPHV 5836A	3624-MT	MSL C MSIV Inbd Seal Gas Sply	Reactor Bldg. EL 102'
1KPHV 5836B	3624-MT	MSL C MSIV Outbd Seal Gas Sply	Reactor Bldg. EL 102'
1KPHV 5837A	3624-MT	MSL D MSIV Inbd Seal Gas Sply	Reactor Bldg. EL 102'
1KPHV 5837B	3624-MT	MSL D MSIV Outbd Seal Gas Sply	Reactor Bldg. EL 102'
1KPHV 6055A	36124MMRT1	Inbd Seal Gas Test Line Isln	Reactor Bldg. EL 102'
1KPHV 6055B	36124MMRT1	Outbd Seal Gas Test Line Isln	Reactor Bldg. EL 102'
1SEHV 5161	36124MMRT1	Tip Purge Containment Isln	Reactor Bldg. EL 100'
1SKHV 4953	36224-F16LMT	Drywell Gas Sample Isolation	Reactor Bldg. EL 162'
1SKHV 4957	36224-F16LMT	Drywell Sample Return Isolation	Drywell Torus, Reactor Bldg. EL 145'
1SKHV 4981	36224-F16LMT	Drywell Sample Return Isolation	Drywell Torus, Reactor Bldg. EL 145'
1SKHV 5018	36224-F16LMT	Drywell Gas Sample Isolation	Reactor Bldg. EL 162'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 76 OF 88

P.O. # P303A(Q) Component: Small Valves

Manufacturer: Rockwell International

SHEET 10 of 12

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
Unassigned	Not Applicable	(1"-CBA-GB)	Unassigned
Unassigned	Not Applicable	(2"-CBA-GB)	Unassigned
Unassigned	Not Applicable	(3/4"-CBA-GB)	Unassigned
Unassigned	Not Applicable	(3/4"-CBA-GB)	Unassigned
Unassigned	Not Applicable	(1"-CBA-GB)	Unassigned
Unassigned	Not Applicable	(1-1/2"-CBA-GB)	Unassigned
Unassigned	Not Applicable	(1-1/2"-CBA-GB)	Unassigned
Unassigned	Not Applicable	(2"-CBA-GB)	Unassigned
Unassigned	Not Applicable	(1"-CCA-GB)	Unassigned
Unassigned	Not Applicable	(3/4"-CCA-CK)	Unassigned
Unassigned	Not Applicable	(1-1/2" CCA-CK)	Unassigned
Unassigned	Not Applicable	(1" EBA-GB)	Unassigned
Unassigned	Not Applicable	(1-1/2" EBA-GB)	Unassigned
Unassigned	Not Applicable	(3/4"-EBA-GB)	Unassigned

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 77 OF 88

P.O. # P303A(Q) Component: Small Valves

Manufacturer: Rockwell International

SHEET 11 of 12

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
Unassigned	Not Applicable	(1-1/2"-EBA-GB)	Unassigned
Unassigned	Not Applicable	(2"-EBA-GB)	Unassigned
Unassigned	Not Applicable	(1"-EBA-CK)	Unassigned
Unassigned	Not Applicable	(2"-EBA-CK)	Unassigned
1EG-HV 2542A	36124 MMRT1	(System Spare)	Reactor Bldg. Unassigned
1EG-HV 2542B	36124 MMRT1	(System Spare)	Reactor Bldg. Unassigned
1EG-HV 2543A	36124 MMRT1	(System Spare)	Reactor Bldg. Unassigned
1EG-HV 2543B	36124 MMRT1	(System Spare)	Reactor Bldg. Unassigned
1KL-HV 5175	36124 MMRT1	(System Spare)	Reactor Bldg. Unassigned
1AB-HV F073 B21	36124 MMRT1	(System Spare)	Reactor Bldg. EL 105'
1BC HV 5055A	3624-MT	Valve from RHR GX to Hydrogen Recombiner	Reactor Bldg. EL 058'
1BC HV 5055B	3624-MT	Valve from RHR HX to Hydrogen Recombiner	Reactor Bldg. EL 090'
1BC HV 5057A	3624-MT	Valve from RHR HX to Hydrogen Recombiner	Reactor Bldg. EL 058'
1BC HV 5057B	3624-MT	Valve from RHR HX to Hydrogen Recombiner	Reactor Bldg. EL 090'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 78 OF 88

P.O. # P303A(0) Component: Small Valves

Manufacturer: Rockwell International

SHEET 12 of 12

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1ABHV F033 B21	36124MMRT1	Steam Line Inboard Drain Valve	Reactor Bldg. EL 102'
1ABHV F068 B21	3624-MT	MS Outbd Drain HDR Startup Valve	Reactor Bldg. EL 102'
1ABHV F073 B21	36124MMRT1	MS Outbd Drn HDR Opnl Drain Valve	Reactor Bldg. EL 102'
1KLHV 5125	36124MMRT1	Instr Air Backup Sply	Reactor Bldg. EL 132'
1BDSV F019-E51	3624MT	RCIC Pump min. flow bypass	Reactor Bldg. EL 078'
1EGHV 2313A	3624MT	System Spare	Reactor Bldg. Unassigned
1EGH 2313B	3624MT	System Spare	Reactor Bldg. Unassigned

3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 79 OF 88

P.O. # P305(Q) Component: Butterfly Valves

Manufacturer: B.I.F/Unit Of General Signal

SHEET 1 of 6

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1EAHV F073	Not Applicable	Emerg Clg Wtr M/U Loop B	Reactor Bldg. EL 077'
1EAHV 2203	Not Applicable	SSWS Loop A To RACS HX	Reactor Bldg. EL 102'
1EAHV 2204	Not Applicable	RACS HTX Clg Wtr From Loop B	Reactor Bldg. EL 102'
1EAHV 2207	Not Applicable	RACS HX Cooling Wtr Inlet	Reactor Bldg. EL 102'
1EAHV 2234	Not Applicable	Emerg Clg Wtr M/U Loop A	Reactor Bldg. EL 077'
1EAHV 2236	Not Applicable	Emerg Wtr M/U Loop A Isln	Reactor Bldg. EL 077'
1EAHV 2238	Not Applicable	Emerg Wtr M/U Loop B Isln	Reactor Bldg. EL 077'
1EAHV 2346	Not Applicable	RACS HTX Clg Wtr Disch Isln	Reactor Bldg. EL 077'
1EAHV 2355A	Not Applicable	SACS HTX A2E201 Outlet	Reactor Bldg. EL 102'
1EAHV 2355B	Not applicable	SACS HTX B2E201 Outlet	Reactor Bldg. EL 102'
1EAHV 2356A	Not Applicable	SACS LP A To Yard Dump	Reactor Bldg. EL 102'
1EAHV 2356B	Not Applicable	SACS LP B To Yard Dump	Reactor Bldg. EL 102'
1EAHV 2357A	Not Applicable	SACS LP A To Clg Tower	Reactor Bldg. EL 077'
1EAHV 2357B	Not Applicable	SACS LP B To Clg Tower	Reactor Bldg. EL 077'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 80 OF 88

P.O. # P305(Q) Component: Butterfly Valves

Manufacturer: B.I.F/Unit Of General Signal

SHEET 2 of 6

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1EAHV 2371A	Not Applicable	SACS HTX A1E201 Outlet	Reactor Bldg. EL 102'
1EAHV 2371B	Not Applicable	SACS HTX B1E201 Outlet	Reactor Bldg. EL 102'
1EDHV 2598	Not Applicable	Reac/Aux Bldg Isln	Reactor Bldg. EL 054'
1EDHV 2599	Not Applicable	Reac/Aux Bldg Isln	Reactor Bldg. EL 054'
1EGHV 2314A	Not Applicable	Fuel Pool HX AE202	Reactor Bldg. EL 162'
1EGHV 2314B	Not Applicable	Fuel Pool HX BE202	Reactor Bldg. EL 162'
1EGHV 2317A	Not Applicable	Fuel Pool HX AE202	Reactor Bldg. EL 162'
1EGHV 2317B	Not Applicable	Fuel Pool HX BE202	Reactor Bldg. EL 162'
1EGHV 2457A	Not Applicable	SACS Heat Exch Loop A Bypass	Reactor Bldg. EL 102'
1EGHV 2457B	Not Applicable	SACS Heat Exch Loop B Bypass	Reactor Bldg. EL 102'
1EGHV 2491A	Not Applicable	SACS HX A1E201 Inlet	Reactor Bldg. EL 102'
1EGHV 2491B	Not Applicable	SACS HX B1E201 Inlet	Reactor Bldg. EL 102'
1EGHV 2494A	Not Applicable	SACS HX A2E201 Inlet	Reactor Bldg. EL 102'
1EGHV 2494B	Not Applicable	SACS HX B2E201 Inlet	Reactor Bldg. EL 102'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 81 OF 88

P.O. # P305(O) Component: Butterfly Valves

Manufacturer: B.I.F/Unit Of General Signal

SHEET 3 of 6

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1EGHV 2496A	Not Applicable	SACS Loop A Return Valve	Reactor Bldg. EL 102'
1EGHV 2496B	Not applicable	SACS Loop B Return Valve	Reactor Bldg. EL 102'
1EGHV 2496C	Not Applicable	SACS Loop A Return Valve	Reactor Bldg. EL 102'
1EGHV 2496D	Not Applicable	SACS Loop B Return Valve	Reactor Bldg. EL 102'
1EGHV 2512A	Not Applicable	RHR HX AE205 Disch	Reactor Bldg. EL 077'
1EGHV 2512B	Not Applicable	RHR HX BE205 Disch	Reactor Bldg. EL 077'
1EGHV 2522A	Not Applicable	SACS To TACS Loop A Supply	Reactor Bldg. EL 102'
1EGHV 2522B	Not Applicable	SACS To TACS Loop B Supply	Reactor Bldg. EL 102'
1EGHV 2522C	Not Applicable	SACS To TACS Loop A Supply	Reactor Bldg. EL 102'
1EGHV 2522D	Not Applicable	SACS To TACS Loop B Supply	Reactor Bldg. EL 102'
1EGHV 2522E	Not Applicable	SACS To TACS Isolation	Aux. Bldg. Diesel Area EL 054'
1EGHV 2522F	Not Applicable	SACS TO TACS Isolation	Aux. Bldg. Diesel Area EL 054'
1EGHV 7921A	Not Applicable	Fuel Pool Heat Exchanger	Reactor Bldg. EL 162'
1EGHV 7921B	Not Applicable	Fuel Pool HZ BE202	Reactor Bldg. EL 162'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 82 OF 88

P.O. # P305(Q) Component: Butterfly Valves

Manufacturer: B.I.F/Unit Of General Signal

SHEET 4 of 6

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1EGHV 7922A	Not Applicable	Fuel Pool HX AE202	Reactor Bldg. EL 162'
1EGHV 7922B	Not Applicable	Fuel Pool HX BE202	Reactor Bldg. EL 162'
1GHHV 5543	Not Applicable	Aln Up Rcvg TK IOT217 Vent RW	Reactor Bldg. EL 077'
1GSHV 4950	Not Applicablw	Drywell Purge Exhaust	Reactor Bldg. EL 145'
1GSHV 4952	Not Applicable	Drywell Purge Exhaust	Reactor Bldg. EL 145'
1GSHV 4956	Not Applicable	Drywell Purge Inlet Valve Isln	Reactor Bldg. EL 102'
1GSHV 4958	Not Applicable	Suppr Chmbr Purge Inlet	Reactor Bldg. EL 077'
1GSHV 4962	Not Applicable	Supp Chmbr Purge Exhaust	Reactor Bldg. EL 077'
1GSHV 4964	Not Applicable	Supp Chmbr Purge Exhaust	Reactor Bldg. EL 077'
1GSHV 4978	Not Applicable	Nitrogen Purge Isln	Reactor Bldg. EL 102'
1GSHV 4979	Not Applicable	Drywell Prepurge C/U Inl Line	Reactor Bldg. EL 102'
1GSHV 4980	Not Applicable	Drywell Prepurge C/U Inl Line	Reactor Bldg. EL 077'
1GSHV 5029	Not Applicable	Reactor Bldg ATM Control	Reactor Bldg. EL 077'
1GSHV 5031	Not Applicable	Reactor Bldg ATM Control	Reactor Bldg. EL 077'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 83 OF 88

P.O. # P305(Q) Component: Butterfly Valves

Manufacturer: B.I.F/Unit Of General Signal

SHEET 5 of 6

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1EG HV 2395A	Not Applicable	SACS Lube Oil HX Butterfly Valve	Reactor Bldg. EL 094'
1EG HV 2395B	Not Applicable	SACS Lube Oil HX Butterfly Valve	Reactor Bldg. EL 094'
1EG HV 2395C	Not Applicable	SACS Lube Oil HX Butterfly Valve	Reactor Bldg. EL 094'
1EG HV 2395D	Not Applicable	SACS Lube Oil HX Butterfly Valve	Reactor Bldg. EL 094'
1EA HV 2197A	Not Applicable	SW Pump Strainer Butterfly Valve	S.W. Structure, EL 096'
1EA HV 2197B	Not Applicable	SW Pump Strainer Butterfly Valve	S.W. Structure, EL 096'
1EA HV 2197C	Not Applicable	SW Pump Strainer Butterfly Valve	S.W. Structure, EL 096'
1EA HV 2197D	Not Applicable	SW Pump Strainer Butterfly Valve	S.W. Structure, EL 096'
1EA HV 2225A	Not Applicable	SW Traveling Screen Spray Wash Valve	S.W. Structure, EL 089'
1EA HV 2225B	Not Applicable	SW Traveling Screen Spray Wash Valve	S.W. Structure, EL 089'
1EA HV 2225C	Not Applicable	SW Traveling Screen Spray Wash Valve	S.W. Structure, EL 089'
1EA HV 2225D	Not Applicable	SW Traveling Screen Spray Wash Valve	S.W. Structure, EL 089'
1EA HV 2198A	Not Applicable	SW Pump Discharge Valve	S.W. Structure, EL 088'
1EA HV 2198B	Not Applicable	SW Pump Discharge Valve	S.W. Structure, EL 088'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 84 OF 88

P.O. # P305(Q) Component: Butterfly Valves

Manufacturer: B.I.F/Unit Of General Signal

SHEET 6 of 6

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1EA HV 2198C	Not Applicable	SW Pump Discharge Valve	S.W. Structure, EL 088'
1EA HV 2198D	Not Applicable	SW Pump Discharge Valve	S.W. Structure, EL 088'
Unassigned	Not Applicable	20"-HBC-BF	Unassigned
Unassigned	Not Applicable	8"-HBC-BF	Unassigned
Unassigned	Not Applicable	6"-HBC-BF	Unassigned
Unassigned	Not Applicable	20"-HBC-BF	Unassigned
Unassigned	Not Applicable	12"-HCC-BF	Unassigned
Unassigned	Not Applicable	10"-HCC-BF	Unassigned
Unassigned	Not Applicable	24"-HEC-BF	Unassigned
Unassigned	Not Applicable	6"-HEC-BF	Unassigned
Unassigned	Not Applicable	6"-HEC-BF	Unassigned

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

P.O. # P366(Q) Component: Resilient Seated Check Valves

Manufacturer: Circle Seal Controls (Brunswick Corp.) SHEET 1 of 1
(Technetics Div.)

<u>I.D. No.</u>	<u>Model No.</u>	<u>Functional Description</u>	<u>Location</u>
1EA V544	Not Applicable	Service Water Pump Lub. water check valve	S.W. Structure. EL 098'
1EA V545	Not Applicable	Service Water Pump Lub. water check valve	S.W. Structure. EL 098'
1EA V546	Not Applicable	Service Water Pump Lub. water check valve	S.W. Structure. EL 098'
1EA V547	Not Applicable	Service Water Pump Lub. water check valve	S.W. Structure. EL 098'
1EA V543	Not Applicable	Service Water Check Valve between lub. head tank and pump	S.W. Structure. EL 122'
1EA V556	Not Applicable	Service Water Check Valve between lub. head tank and pump	S.W. Structure. EL 122'
1AB V 051	Not Applicable	Inboard MSIV Instrumentation Check Valve	Reactor Bldg. EL 102'
1AB V 052	Not Applicable	Inboard MSIV Instrumentation Check Valve	Reactor Bldg. EL 102'
1AB V 053	Not Applicable	Inboard MSIV Instrumentation Check Valve	Reactor Bldg. EL 102'
1AB V 054	Not Applicable	Inboard MSIV Instrumentation Check Valve	Reactor Bldg. EL 102'
1AB V 055	Not Applicable	Outboard MSIV Instrumentation Check Valve	Reactor Bldg. EL 102'
1AB V 056	Not Applicable	Outboard MSIV Instrumentation Check Valve	Reactor Bldg. EL 102'
1AB V 057	Not Applicable	Outboard MSIV Instrumentation Check Valve	Reactor Bldg. EL 102'
1AB V 058	Not Applicable	Outboard MSIV Instrumentation Check Valve	Reactor Bldg. EL 102'

*The balance of the 1-AB valves (14) have not yet been assigned.

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

P.O. # P401(D) Component: Hydraulic Snubbers

Manufacturer: E-Systems, Inc., Montek Division

<u>I.D. No.</u>	<u>Model No. (Rating)</u>	<u>Functional Description</u>	<u>Location</u>
1-AB-030-H02	152007 70 Kip	Pipe Support/Restraint Device	Reactor Bldg., EL 121'
1-AB-030-H03	152007 70 Kip	Pipe Support/Restraint Device	Reactor Bldg., EL 121'
1-AB-030-H04	152007 70 Kip	Pipe Support/Restraint Device	Reactor Bldg., EL 121'
1-AB-030-H05	152007 70 Kip	Pipe Support/Restraint Device	Reactor Bldg., EL 121'
1-AB-031-H02	152007 70 Kip	Pipe Support/Restraint Device	Reactor Bldg., EL 121'
1-AB-031-H03	152007 70 Kip	Pipe Support/Restraint Device	Reactor Bldg., EL 121'
1-AB-031-H05	152007 70 Kip	Pipe Support/Restraint Device	Reactor Bldg., EL 121'
1-AB-031-H04	152005 50 Kip	Pipe Support/Restraint Device	Reactor Bldg., EL 121'
1-AB-031-H07	152005 50 Kip	Pipe Support/Restraint Device	Reactor Bldg., EL 121'
1-AB-032-H04	152005 50 Kip	Pipe Support/Restraint Device	Reactor Bldg., EL 121'
1-AB-032-H07	152005 50 Kip	Pipe Support/Restraint Device	Reactor Bldg., EL 121'
1-AB-032-H02	152007 70 Kip	Pipe Support/Restraint Device	Reactor Bldg., EL 121'
1-AB-032-H05	152007 70 Kip	Pipe Support/Restraint Device	Reactor Bldg., EL 121'
1-AB-033-H02	152007 70 Kip	Pipe Support/Restraint Device	Reactor Bldg., EL 121'
1-AB-033-H03	152007 70 Kip	Pipe Support/Restraint Device	Reactor Bldg., EL 121'
1-AB-033-H04	152007 70 Kip	Pipe Support/Restraint Device	Reactor Bldg., EL 121'
1-AB-033-H05	152007 70 Kip	Pipe Support/Restraint Device	Reactor Bldg., EL 121'
1-BB-011-H02	152005 50 Kip	Pipe Support/Restraint Device	Reactor Bldg., EL 086'
1-BB-011-H03	152005 50 Kip	Pipe Support/Restraint Device	Reactor Bldg., EL 086'
1-BB-011-H07	152005 50 Kip	Pipe Support/Restraint Device	Reactor Bldg., EL 100'
1-BB-011-H08	152005 50 Kip	Pipe Support/Restraint Device	Reactor Bldg., EL 100'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

PAGE 87 OF 88

P.O. # P401(D) Component: Hydraulic Snubbers

Manufacturer: E-Systems, Inc., Montek Division

SHEET 2 of 3

<u>I.D. No.</u>	<u>Model No. (Rating)</u>	<u>Functional Description</u>	<u>Location</u>
1-BB-011-H11	152010 100 Kip	Pipe Support/Restraint Device	Reactor Bldg., EL 100'
1-BB-011-H12	152010 100 Kip	Pipe Support/Restraint Device	Reactor Bldg., EL 100'
1-BB-011-H13	152010 100 Kip	Pipe Support/Restraint Device	Reactor Bldg., EL 086'
1-BB-011-H14	152010 100 Kip	Pipe Support/Restraint Device	Reactor Bldg., EL 086'
1-BB-012-H02	152005 50 Kip	Pipe Support/Restraint Device	Reactor Bldg., EL 086
1-BB-012-H03	152005 50 Kip	Pipe Support/Restraint Device	Reactor Bldg., EL 086'
1-BB-012-H07	152005 50 Kip	Pipe Support/Restraint Device	Reactor Bldg., EL 100'
1-BB-012-H08	152005 50 Kip	Pipe Support/Restraint Device	Reactor Bldg., EL 100'
1-BB-012-H09	152005 50 Kip	Pipe Support/Restraint Device	Reactor Bldg., EL 100'
1-BB-012-H10	152005 50 Kip	Pipe Support/Restraint Device	Reactor Bldg., EL 100'
1-BB-012-H11	152010 100 Kip	Pipe Support/Restraint Device	Reactor Bldg., EL 100'
1-BB-012-H12	152010 100 Kip	Pipe Support/Restraint Device	Reactor Bldg., EL 086'
1-BB-012-H13	152010 100 Kip	Pipe Support/Restraint Device	Reactor Bldg., EL 086'
1-BB-012-H14	152010 100 Kip	Pipe Support/Restraint Device	Reactor Bldg., EL 086'
1-BB-013-H02	152007 70 Kip	Pipe Support/Restraint Device	Reactor Bldg., EL 100'
1-BB-013-H01	152005 50 Kip	Pipe Support/Restraint Device	Reactor Bldg., EL 100'
1-BB-013-H04	152005 50 Kip	Pipe Support/Restraint Device	Reactor Bldg., EL 086'
1-BB-013-H06	152003 30 Kip	Pipe Support/Restraint Device	Reactor Bldg., EL 100'
1-BB-013-H07	152003 30 Kip	Pipe Support/Restraint Device	Reactor Bldg., EL 100'
1-BB-013-H08	152003 30 Kip	Pipe Support/Restraint Device	Reactor Bldg., EL 100'
1-BB-013-H09	152003 30 Kip	Pipe Support/Restraint Device	Reactor Bldg., EL 100'

TABLE 3.11-4
MECHANICAL EQUIPMENT SELECTED FOR HARSH
ENVIRONMENT QUALIFICATION

P.O. # P401(D) Component: Hydraulic Snubbers

Manufacturer: E-Systems, Inc., Montek Division

<u>I.D. No.</u>	<u>Model No. (Rating)</u>	<u>Functional Description</u>	<u>Location</u>
1-BB-014-H02	152007 70 Kip	Pipe Support/Restraint Device	Reactor Bldg., EL 100'
1-BB-014-H01	152005 50 Kip	Pipe Support/Restraint Device	Reactor Bldg., EL 100'
1-BB-014-H04	152005 50 Kip	Pipe Support/Restraint Device	Reactor Bldg., EL 086'
1-BB-014-H06	152003 30 Kip	Pipe Support/Restraint Device	Reactor Bldg., EL 100'
1-BB-014-H07	152003 30 Kip	Pipe Support/Restraint Device	Reactor Bldg., EL 100'
1-BB-014-H08	152003 30 Kip	Pipe Support/Restraint Device	Reactor Bldg., EL 100'
1-BB-014-H09	152003 30 Kip	Pipe Support/Restraint Device	Reactor Bldg., EL 100'

ENCLOSURE 3

ATTACHMENT 4

PROPOSED FSAR TABLE 3.11-6

TABLE 3.11-6

SAFETY-RELATED EQUIPMENT LOCATED IN A HARSH ENVIRONMENT EXEMPTED
FROM ENVIRONMENTAL QUALIFICATION REQUIREMENTS

EQUIPMENT TAG NO.	DESCRIPTION	REASON
1 AVE 261	Electric Duct Heater, SLC	Due to reactor building temperature increase during a DBA, the duct heaters will not function due to the temperature control settings, which is below DBA building temperature. The heater circuits are protected by primary and backup IE Breakers.
1 BVE 261	Electric Duct Heater, SLC	
10 VE 259	Electric Duct Heater, RCIC	
10 VE 260	Electric Duct Heater, HPCI	
1 AN 205	4.16 KV Breaker - RRS Pump Motor	The RRS pump motor breakers trip upon receipt of a LOCA signal shutting down the pumps. The breakers are no longer required to perform a safety-related function.
1 BN 205	4.16 KV Breaker - RRS Pump Motor	
1 CN 205	4.16 KV Breaker - RRS Pump Motor	
1 DN 205	4.16 KV Breaker - RRS Pump Motor	
10 Y 201	Panel	These panels and transformers are located in the reactor building and feed non-critical class IE loads. They are protected by primary and backup IE breakers.
10 Y 202	Panel	
10 Y 203	Panel	
10 Y 204	Panel	
10 X 201	Transformer	
10 X 202	Transformer	
10 X 203	Transformer	
10 X 204	Transformer	
1-SK-TE-N016	Temperature Elements	These temperature elements and motor operated valves are not qualified for submergence caused by a feedwater line break in the steam Tunnel. They have been provided with primary and backup IE bus protective devices located in the hazard free area.
1-SK-TE-N012A	Temperature Elements	
1-SK-TE-N012C	Temperature Elements	
1-SK-TE-N010A	Temperature Elements	
1-SK-TE-N010B	Temperature Elements	
1-SK-TE-N010C	Temperature Elements	
1-SK-TE-N010D	Temperature Elements	
1-SK-TE-N012B	Temperature Elements	
1-SK-TE-N012D	Temperature Elements	
1-GU-TE-9428-1	Temperature Elements	
1-GU-TE-9428-2	Temperature Elements	
1-AE-HV-F039	Motor Operated Valves	Note: All of the equipment in this table is qualified for its function in accordance with 10CFR50.49 requirements.
1-AB-HV-F071	Motor Operated Valves	
1-KP-HV-5829A,B	Motor Operated Valves	
1-KP-HV-5834A,B	Motor Operated Valves	
1-KP-HV-5835A,B	Motor Operated Valves	
1-KP-HV-5836A,B	Motor Operated Valves	
1-KP-HV-5837A,B	Motor Operated Valves	
1-BJ-HV-8278	Motor Operated Valves	
1-AB-HV-F067A	Motor Operated Valves	
1-AB-HV-F067B	Motor Operated Valves	
1-AB-HV-F067C	Motor Operated Valves	
1-AB-HV-F067D	Motor Operated Valves	