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AUTH. NAME AUTHOR AFFILIATION
RENBERGER, D. L. Washington Public Power Supply System
RECIP. NAME RECIPIENT AFFILIATION
RUBENSTEIN, L. Light Water Reactors Branch 4

SUBJECT: Forwards Amend 5 to FSAR, incorporating responses to NRC first round questions. FSAR Vol 17 A encl. REGD 10/24/79 9.56

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	29 KIRKWOOD	1	1	AD FOR ENG	1	0
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Washington Public Power Supply System
A JOINT OPERATING AGENCY

P. O. BOX 968   3000 GEO. WASHINGTON WAY   RICHLAND, WASHINGTON 99352   PHONE (509) 375-5000

September 7, 1979
G02-79-149

'79 OCT 5 PM 4 26

Docket No. 50-397

Director, Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washinton, D. C. 20555

Attention: Mr. L. Rubenstein, Chief
Branch No. 4
Division of Project Management

Subject: WPPSS NUCLEAR PROJECT NO. 2
FSAR AMENDMENT NO. 5

Dear Mr. Rubenstein:

The Washington Public Power Supply System herewith submits sixty (60) copies of Amendment 5 to its Final Safety Analysis Report. Amendment 5 incorporates the NRC questions/responses from Round One, Sets One through Four into the FSAR, plus other minor changes.

Pursuant to 10CFR 2.101, we will, within ten days of filing furnish to you an affidavit reflecting our distribution of this amendment to your designated distribution list.

Very truly yours,

D L Renberger

D. L. RENBERGER
Assistant Director
Technology

DLR:SAG:sg

cc: JJ Verderber - B&R, NY
JJ Byrnes - B&R, NY
HR Canter - B&R, NY
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7910040

7910040199

STATE OF WASHINGTON)
) ss
COUNTY OF BENTON)

D. L. RENBERGER, Being first duly sworn, deposes and says: That he is the Assistant Director, Technology, for the WASHINGTON PUBLIC POWER SUPPLY SYSTEM, the applicant herein; that he is authorized to submit the foregoing on behalf of said applicant; that he has read the foregoing and knows the contents thereof; and believes the same to be true to the best of his knowledge.

DATED Aug. 10, 1979

D L Renberger
D. L. RENBERGER

On this day personally appeared before me D. L. RENBERGER to me known to be the individual who executed the foregoing instrument and acknowledged that he signed the same as his free act and deed for the uses and purposes therein mentioned.

GIVEN under my hand and seal this 10th day of August, 1979.

Reba B. [illegible]
Notary Public in and for the State of Washington
Residing at Richland

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

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FROM: US NRC/TIDC/Distribution Services Branch

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INSTRUCTIONS FOR INSERTING AMENDMENT NO. 5

The following instructional information and check list is furnished to help you insert Amendment No. 5 into the Washington Public Power Supply System Nuclear Project No. 2 FSAR.

Discard the old sheets and insert the new sheets as listed below (front page/back page). Keep these instructions and list of affective pages in the front of Volume 1 to serve as a record of changes.

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Q. 211.002
(5.2.5)
(7.6.1)
(9.3.3)

Discuss the sump geometry, the accuracy of the leakage flow rate measurements, the monitoring interval and any other information required to demonstrate a sensitivity of one gallon per minute (gpm) per hour for the floor drain sump level monitoring systems.

Response:

The floor drain sump system is a gravity flow feed from the drywell floor drain into the reactor building floor drain sump. The floor drain sump geometry is such that the gravity feed is connected to an overflow standpipe in the center of the sump. Approximately 50 gallons of liquid is required to fill a completely dry sump to the overflow gravity feed inlet. Thus, the required sensitivity of 1 gpm per hour can be monitored. A flow transmitter continually measures flow from the drywell floor drain and records this information in the control room. The recorder actuates a control room alarm if flow exceeds a pre-established limit.

The system is designed to detect a flow as little as 0.5 gpm with a total system accuracy of 1.8%.

Q. 211.003
(5.2.5)

The design of the WNP-2 facility routes drainage of both "hot" and "cold" reactor coolant leakage into the drywell equipment drain sump. However, relatively hot sources of leakage water (e.g., the reactor vessel head flange, the vent drain and valve packings) may flash into steam which then must be condensed before it can be drained into the sump. Accordingly, indicate what assurance there is that this steam from relatively hot sources will be condensed so that monitoring of this leakage may be performed in the drywell sump to detect these "hot" leaks. Since leakage from those sources which are relatively cool is drained into the floor drain system, this system should be tested periodically for blocked lines. Accordingly, discuss the surveillance program you propose for the WNP-2 facility to detect blockage of the floor drain system.

Response:

WNP-2 routes "hot" reactor coolant leakage to the drywell equipment drain sump through leakoff lines to a main header. The header discharge is routed to the equipment drain condenser where "hot" leakage is cooled and condensed. Discharge from the condenser to the sump is through a quencher. This arrangement assures that any "hot" leakage which could flash into steam will be cooled and condensed before entering the open sump.

The floor drain sump drain line from the containment to the reactor building sump will be periodically back flushed to show that the drain line is not blocked.

Q. 211.004
(5.2.1)
(7.6.2)

In conformance with the staff's position in Regulatory Guide 1.45, "Reactor Coolant Pressure Boundary Leakage Detection Systems", May 1973, you state in Section 7.6.2.4 of the FSAR that the radioactivity monitoring channels are qualified for operation following a Safe Shutdown Earthquake (SSE). Confirm that all of the other leakage detection methods and/or systems will function properly following an Operating Basis Earthquake (OBE). These other leakage detection systems include the drywell equipment sump and the floor drain sump, and sump coolers, and the associated instrumentation and piping.

Response:

The WNP-2 drywell floor drain and equipment drain sumps, piping to the sumps, and the equipment drain cooler are seismically supported such that they will continue to pass leakage flow following an OBE.

The level switches are used to monitor leakage from reactor building drains to the respective sumps. These level switches are qualified by test to show that they remain functional following a OBE and SSE.

Q. 211.005
(5.2.5)

Provide a list of the normal and the maximum anticipated leakage rates through the reactor coolant pressure boundary (RCPB), including the concentrations of radioactivity in this leakage flow, from both identified and unidentified sources (e.g., the control rod drive flanges and the vent cooler drains) which are routed into the drain sumps.

Response:

The normal and maximum anticipated leakage rates from the reactor coolant pressure boundary within the drywell during normal reactor operation is between 0.1 and 0.5 gpm for unidentified leakage and 2 to 5 gpm for identified leakage. These leakage rates are measured at the sumps and are based on operating plant experience.

The activity concentrations in this leakage are expected to be the same as those in the reactor water. The concentrations are given in Chapter 11, Tables 11.1-2, "Halogen Radioisotopes in Reactor Water"; 11.1-3, "Other Fission Product Radioisotopes in Reactor"; 11.1-4, "Coolant Activation Products in Reactor Water and Steam"; and 11.1-5, "Noncoolant Activation Products in Reactor Water".

Q. 211.006

The NRC changed this question number to 010.049.

Q. 211.007
(7.6.2)

Expand your discussion in Section 7.6.2.4 of the FSAR regarding the operability verification and the calibration of the leakage detection system which will be accomplished by comparing the results of diverse monitoring methods. For example, if a radioactivity monitoring system is checked against the sump level and the flow monitoring system, indicate how the latter system is determined to have acceptable accuracy. Confirm that calibration and operability tests will: (1) be performed periodically during plant operation; and (2) be in compliance with the requirements of IEEE Standard 279-1971.

Response:

Comparisons between the drywell floor drain flow monitoring system and radioactivity monitoring systems will be made during plant operation. The sensitivity of the monitors are within the guidelines of Regulatory Guide 1.45 (May, 1973) whereas the accuracy of the measurements are influenced by the fission product and corrosion-coolant activation product concentrations in the primary coolant steam and water phases. Operational experience is required to establish the acceptable accuracy for the system at the various operating conditions.

That equipment which provides inputs to safety-related systems are designed to IEEE Standard 279-1971 as stated in 7.6.2.4.2.3.a and as such will have operability and calibration tests performed as stated in 7.6.2.4.2.3.c.

Miscellaneous revision to 7.6.2.4 and 5.2.5 have been made in light of this question.

Amendment 10, revising Chapter 7, replaced 7.6.2.4 with 7.6.2.

Q. 211.008
(5.2.2)
(7.6.1)

In Section 7.6.1.4 of the FSAR, you state that major components within the drywell which are sources of leakage by nature of their design (e.g., the sump seals, the valve stem packing, and the equipment warming drains), are enclosed and the leakage is piped to an equipment drain sump and identified there. Indicate what you mean by the term "sump seals" (i.e., did you intend to state pump seals). Discuss what monitors are available to the operator to permit him to identify the source of leakage; i.e., whether the leakage is from the "sump" (or pump) seals or the equipment warming drains or from any other component leakage sources which drain into the drywell equipment drain tank. Indicate whether there are any sumps within the drywell which must be filled before the sump drain flow is routed to the equipment drain tank.

Response:

The term "sump seals" is an error and should read "pump seals".

Sources of leakage which are enclosed and piped to the Drywell Equipment Drain Sump are monitored by the following means to provide the operator with information to permit him to identify the source of leakage.

a. Recirculation pump seals are provided with flow switches and control room alarms to identify excessive seal leakage.

b. The area between the vessel head seals is monitored with a pressure switch and a control room alarm to indicate inner seal leakage.

c. Remote operated valves within the Drywell are provided with seal leakoff lines. These lines connect between the valve stem packing are equipped with thermocouples to detect leakage through the inner packing and alarm in the control room.

All other sources of leakage which are piped to the drywell equipment drain tank are not considered as leakage paths. These lines are isolated by double block valves, which are opened only when needed.

Both the drywell equipment drain and floor drain sumps must fill to a specified level before reaching an overflow which routes liquid outside the drywell. See the response also to Question 211.002.

Amendment 10, revising Chapter 7, changed the number of 7.6.1.4 to 7.6.1.3.

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Q. 211.009
(5.2.5)
(7.6.2)

In conformance with the staff's position in Regulatory Guide 1.45, you state that the positions will be made to monitor systems connected to the reactor coolant pressure boundary for signs of intersystem leakage. Provide a detailed discussion of these provisions, including an identification of all potential intersystem leakage paths; e.g., the leakage from the primary coolant system to the residual heat removal (RHR) system and the emergency core cooling system (ECCS) injection line. Identify the instrumentation used in each path which will provide positive indication of intersystem leakage in the affected system.

Response:

Below is a listing of equipment which alert the operator to intersystem leakage from the reactor coolant pressure boundary into a low pressure system.

Each low pressure system process line is provided with an overpressure sensing pressure switch. The pressure switch activates an alarm in the control room to alert the operator to a degrading situation where a leaking shutoff valve may result in system pressure exceeding design limits.

The following is a list of process lines, monitored for intersystem leakage. The associated overpressure pressure switches are shown on the respective system functional control diagrams and flow diagrams.

Intersystem Leakage Path

RHR/Recirc Suction

RHR/Recirc Discharge

RHR Head Spray

LPCS Injection

LPCI Injection

Q. 211.010
(5.2.5)

Operating experience at some boiling water reactors (BWRs) has shown that the high pressure coolant injection system (HPCI) and the reactor core isolation cooling system (RCIC) have been rendered inoperable due to inadvertent leak detection isolations which were caused by a high differential temperature signal from the equipment room area. These isolations occurred when there was a relatively sharp drop in the outside temperature. In 5.4.6.1.1.1 and Table 5.2-9 of the FSAR you indicate that the WNP-2 facility also has this type of isolation for the RCIC system and the steam side of the RHR system. Provide a discussion of the modifications that have been, or will be, made to prevent inadvertent isolations of this type which effect the availability and reliability of the RCIC and the RHR systms. Additionally, indicate the trip settings you propose for isolation of the WNP-2 RHR and RCIC systems due to high are temperature in terms of degree Fahrenheit above the ambient temperature. Discuss the method you propose to avoid this problem. Show that the differential temperature setting could not be set too low, thereby causing an inadverent isolation when the RCIC and the RHR systems are needed.

Response:

The RHR and RCIC pump rooms are located approximately 20 feet below grade level and would not be directly affected by a sharp drop in the outside air temperature. These rooms are ventilated by the reactor building ventilation system which contains a freeze protection device that will annunciate in the main control room if 40°F air existed downstream of the heating coil.

The normal operating differential temperature for the RHR and RCIC pump rooms is 27°F. The temperature elements are located at the face of the supply and exhaust ductwork in each pump room. The setpoint differential for system isolation is 58°F for the same four pump rooms. The higher setpoint for system isolation is to allow for heat released from a predetermined steam leak. However, isolation may also occur during a sudden temperature drop in the pump room inlet air duct; a minimum of 31°F per hour is conservatively required for this to occur assuming there is one air change of air per hour in each pump room (the approximate design rate). This temperature drop is not historically supported since the meteorological data from the Hanford Reservation has not recorded temperature changes of this magnitude.

The high ambient trip setting for the RHR and RCIC pump rooms is 150°F and is based on the equipmment design temperature.

The differential trip setting will be adjusted if required following the system preoperational test.

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Q. 211.011
(5.5.2)
(Appendix C-2)

You deviate from the Staff's positions in Regulatory Guide 1.29, Revision 3, "Seismic Design Classification", September, 1978, by not designing the component cooling water portions of the reactor recirculation pumps to seismic Category I criteria. The basis you state in the FSAR for this deviation is that these pumps do not perform a safety function. Provide additional justification for this position and show that a loss of component cooling water to the recirculation pumps would not lead to unacceptable consequences.

Response:

Seismic Category I applies to the pressure boundary at the pump. The pump is not required to be operational during safe reactor shutdown and, therefore, the consequences of loss of cooling water to the recirculation pumps are acceptable.

There is a requirement for coastdown capability for the hypothesized loss-of-coolant accident. The equipment has demonstrated adequate coastdown time in the past following loss of cooling water.

Q. 211.012
(4.6)
(5.4.6)
(5.4.7)

Describe the provisions incorporated into the WNP-2 facility to protect the RCIC and the RHR systems from cold weather and from dust storms and to assure satisfactory operational performance under any adverse meteorological conditions. In this discussion, include consideration of the standby liquid control system and the control rod drive (CRD) hydraulic system and any other sources of water for these systems (e.g., the condensate storage tank and the standby service water).

Response:

The RCIC system takes suction from the condensate storage tanks during normal modes of operation. The condensate storage tanks are provided with heaters to maintain water temperature above 40°F at all times. All above ground piping that contains water is heat traced to prevent freezing. Since the CST is a covered tank, the water supply is not affected by dust storms. To provide a Category I source of cooling water for the RCIC system, automatic transfer circuitry has been provided to transfer suction from the CST and the suppression pool, which is inside the reactor building and protected from cold weather and dust storms.

The control rod drive hydraulic system normally takes suction from the main condensate system, downstream of the condensate demineralizers. All the piping is located within the Turbine Building or Reactor Building. The secondary source of water is the condensate storage tank if the main condensate system is not available. Both sources of water are protected from cold weather and dust storms.

The standby liquid control system, which is filled with sodium pentaborate, is provided with tank heaters and heat tracing to prevent solidification. The entire system is located within the Reactor Building, so it is unaffected by cold weather or dust storms.

The RHR system takes suction from either the recirculation piping or the suppression pool. All the piping is within the Reactor Building.

The RHR heat exchangers dissipate their heat to the standby service water system. All SW piping and components are either below the frost line, within the heated pumphouse, or, in the case of the spray rings, kept drained by the return header drain valve when not in operation. The SW pump suction is 26 feet below water level, so any dust collecting on the spray pond surface will not affect pump operation. A sand trap is located in front of each SW pumphouse. Any equipment that could be affected by dust storms is either provided as sealed units, located in dust-proof cabinets, or protected by dust-proof coatings. (See the response to Question 010.016.)

Q. 211.013
(3.5.1)

In evaluating the potential for missiles due to failures of pressurized components, you state that thermowells and sample probes have been assessed against criteria discussed in Section 3.5.1.1.2 of the FSAR. Indicate which specific criterion and basis has been considered in determining that the thermowells and sample probes are not credible missiles. Provide justification for omitting other pressurized components such as blank flange assemblies and pressurized vessels or bottles (e.g., the safety/relief valve air accumulators and the nitrogen accumulator tanks) from your assessment of potential missiles.

Response:

Thermowells and sample probes are investigated for their potential of becoming postulated missiles which could adversely affect the shutdown capability of the plant.

Thermowells that are in systems where the pressure or temperature is 275 psig, 200°F or greater, respectively, are analyzed for their potential of becoming missiles.

The connection holding these thermowells to the system have been analyzed and it has been determined that the connection between the two not only is adequate but is conservative by many folds.

In our current investigation as a further conservatism the thermowells are assumed to become missiles; it is found that even if it is assumed that all systems and components in the path of the postulated missile are lost, the plant can still be brought to a safe (cool) shutdown.

In the WNP-2 facility sample probes are lines that are one inch or less in diameter.

Pipe breaks are not postulated in lines one inch or less.

Blank flange assemblies, pressurized vessels and bottles, are investigated as to their potential of becoming missiles with the procedure outlined in 3.5.1.1.2 of the FSAR.

Q. 211.014
(3.5.1)

Discuss the potential for missiles inside the containment due to falling objects (e.g., electrical hoists or any unrestrained equipment) for the following events: (1) routine maintenance; (2) reactor operation; and (3) a postulated loss-of-coolant accident (LOCA).

Response:

A discussion of missiles inside containment due to falling objects was provided in Amendment 3 (3.5.1.7.4) in response to NRC Question 212.001. As stated in 3.5.1.2.4, the only components inside containment which are not supported to satisfy Seismic Category I requirements are the monorail hoists which are chained in place while the reactor is operating.

During routine maintenance, appropriate precautions will be taken to minimize the vulnerability of systems required to maintain the plant in a safe shutdown condition, while loads are being moved about. Such precautions could consist of:

a. Routing and providing temporary storage of loads to minimize travel or positioning of loads over vulnerable components of essential systems.

b. Providing temporary barriers for essential equipment.

c. Providing redundant slings or chains used in carrying loads.

d. Tying off potential falling objects which are being temporarily stored. Conditions existing at the time maintenance is performed will dictate whether precautions such as those described above need be taken, and the extent of such precautions.

Pipe whip restraints for high energy systems are provided to restrain the motion of ruptured pipe, and prevent further damage which could result in missile formation, as described in 3.6.2. Design for jet impingement effects, as described in 3.6.2, has not included an assessment of missile formation and consequences, due to impact by postulated jets, for the same reasons provided in 3.5.1.2.5 as to why analyses of secondary missiles caused by primary missiles are not performed. However, the physical separation and redundancy of safe shutdown systems, as described in 3.5.1.2.2, provides assurance that if missiles or falling objects were generated by a LOCA, that the ability to bring the plant to a safe shutdown would be maintained.

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Q. 211.015
(3.5.1)

With regard to missiles generated by a postulated failure of a rotating component, show by analysis that the impeller fragments resulting from an overspeed condition in the recirculation pump during a postulated LOCA, will not penetrate the pump case. Provide a study demonstrating that the probability for significant damage to safety-related components or systems inside containment resulting from impeller missiles which might be ejected out the open end of the broken pipe, is acceptably low. If you reference a similar study on another docket, demonstrate the appropriateness of referencing this study for the WNP-2 facility.

Response:

Reference 3.5-4 has been revised to refer to Revision 2 of the General Electric Company Report, "Analysis of Recirculation Pump Under Accident Conditions". This report concludes that pump overspeed due to postulated pipe breaks is highly improbable, and that in the unlikely event of impeller failure the missile fragments lack sufficient energy to penetrate the pump case. The effects of impeller missile fragments ejected from openings in ruptured recirculation system piping are not evaluated because they would not be more severe than the assumed consequences of jet impingement from the same breaks. Furthermore, except for a circumferential break in the first straight run of piping at the discharge side of the recirculation pump, contact with the pipe due to directional changes by the impeller fragment prior to ejection from the broken pipe would result in substantial energy loss. For these reasons, recirculation pump missile fragments are not included as postulated missiles inside containment. See revised 3.5.1.2.3.4.

Q. 211.016
(3.5.1)

Based on our review of the design integrity of nuclear power plant piping systems, we have noted several failures of safety valve headers which caused the valves to become missiles. (Refer to NUREG-0307, "Review and Assessment of Research Relevant to Design Aspects of Nuclear Power Plant Piping Systems", July 1977.) Since you address only the credibility of valve bonnets and stems as potential missiles, provide justification in Section 3.5.1.2 of the FSAR for concluding that the safety valve header and valve cannot be considered to be credible missiles. Your statement in Section 3.5.1.1.3.1 of the FSAR that bonnet ejection is highly improbable and that bonnets are not considered to be credible missiles, is not supported. Show that should a large valve component become a missile, containment penetration would not occur. Discuss the provisions incorporated into the WNP 2 facility (e.g., equipment separation and redundancy) to preclude damage to the systems necessary to achieve and maintain a safe plant shutdown.

Response:

The primary provisions incorporated into the design of the WNP 2 facility to preclude damage to the systems necessary to achieve and maintain a safe plant shutdown are separation and redundancy. These provisions provide that in the event of an accident plus an additional active component failure, where a system required for safe (cool) shutdown is rendered unavailable, enough systems are left available to bring the plant to a safe (cool) shutdown without allowing any offsite radiological consequences. This redundancy and separation is obtained by the deliberate routing of systems, by the presence of structural floors, walls, structural steel members, and adjacent equipment which serve as barriers.

Missiles are postulated, their trajectories determined, and their effects on safety systems evaluated. Where separation is not sufficient and where redundancy is not maintained, the missile is further investigated to determine whether it truly is a credible missile, and/or whether the impacted target can adequately withstand the impact. If the preceeding measures do not provide sufficient protecton, then structural barriers are utilized to satisfy the safety requirements.

In addressing the credibility of valve bonnet missiles, a determination of the extent of reserve is made of the bonnet to valve connection. This includes:

a. The factor of safety of the valve test pressure over the operating design pressure.

b. The actual factor of safety of typical connections for the bonnet screwed-on and retaining ring type bonnets.

c. The typical connection capabilities for the valve to bonnet connections assuming that a portion of the connection is not available to resist the design load.

Where this determination provides evidence of substantial reserve strength the credibility of the missile is discounted. All valve components were found to have either two redundant methods of retention or substantial reserve strength. Valve components are, therefore, not credible missiles.

The main steam safety/relief valves were postulated missiles but were analysed and found to be not credible missiles. Main steam safety/relief valves were analysed part by part. All pressurized parts had two methods of retention. Additionally, we are aware of safety valve header failures in PWR units under function testing. These failures were later attributed to improper design analysis practices. Breaks in the WNP 2 header were evaluated for credibility based on the stress criteria per Branch Technical Position MEB 3-1 and Standard Review Plan 3.6.2 "Determination of Rupture Locations and Dynamic Effects Associated with the Postulated Rupture of Piping." Potential pipe ruptures are addressed in 3.6.

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Q. 211.017
(4.6.1)

Provide information demonstrating that the loss of the operating CRD pump at low reactor pressure (i.e., less than 500 psig) will not result in depressurization of the accumulator, thereby causing a loss of the reactor's scram capability. If the accumulator check valves were to leak following loss of the operating CRD pump, provide an estimate of the time interval before the reactor scram capability becomes marginal. In responding to this question, provide your basis for this estimate. Describe a test program or procedure which would provide assurance that operation of these check valves is acceptable over the lifetime of the WNP-2 facility.

Response:

The failure of a CRD pump will not affect the capability to scram all control rods if required. Scram is achieved on either HCU accumulator pressure or a combination of accumulator pressure and reactor pressure. Flow from the CRD pump is not required to successfully scram the plant. Each of the 185 control rod drives has its own HCU which operates independently of any others. Each HCU is safety grade and has its own accumulator. The condition of the accumulators is continuously monitored by the Reactor Manual Control System. Loss of pressure and/or leakage from any of the 185 accumulators is detected by PSL-130 and LDS-129 respectively for each accumulator, as shown in Figure 4.6-5. Both occurrences are annunciated and a light signal identifies the particular control rod drive.

If a CRD pump fails the operator will bring the second pump on-line. If that pump is unavailable the operator can initiate a manual scram. If the pressure in a scram accumulator drops and approaches a pressure level below which control rod scram capability is impaired, an alarm is triggered and a light signal will identify the particular control rod drive. The operator will initiate a manual scram depending on the number of drives in this state.

If an accumulator check valve were to leak at the maximum allowable rate against which it has been designed, the minimum time available before scram capacity of an individual drive becomes marginal is at least 20 minutes. This, however, does not mean that the total core scram capability becomes impaired due to the leakage from one check valve.

The core is designed to be shutdown from all operating conditions with the most reactive control rod fully withdrawn.

BWR reactor experience indicates there has been no failure to scram in over 200 reactor years that can be attributed to the reactor scram mechanical system of which the HCUs are a part.

No more than three failures of individual drives to scram have occurred in over 270,000 individual drive scrams.

Several failures to scram of individual drives would have to occur simultaneously to prevent reactor shutdown.

In summary, as previously mentioned, accumulator pressure is continuously monitored and a pressure decrease is alarmed to the operator, therefore, further analysis of the reliability and duration of the check valves to hold scram accumulator pressure is not needed.

Operational experience has shown that a testing program or procedure that would assure acceptable check valve operation is unnecessary.

The applicant's position is that it is unreasonable and unjustified to postulate simultaneously the loss of the CRD pump and, in addition, the standby CRD pump; the common mode failure of the accumulator check valves; and reactor pressure too low to drive the control rods into the reactor.

The events postulated utilize accident assumptions applied to normal operational events and assumes failure of non-safety grade equipment (CRD pump and CRD standby pump).

WNP-2

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Q. 211.018
(4.6.1)

Experience at some operating BWRs indicates that failures can occur in the collet fingers of the CRD mechanism. In order to resolve this problem, some BWR facilities under construction have installed a revised collect retainer design. However, you do not address this particular problem in your FSAR nor do you discuss its resolution. Accordingly, confirm whether the revised collet retainer design will be incorporated into the CRD mechanisms of the WNP-2 facility. Revise Table 1.3-8 of the FSAR as required.

Response:

WNP-2 does not have the revised collect retainer design. There have been no failures of collet fingers reported from the field. General Electric has demonstrated by testing and operating experience that the existing CRDs meet all safety and licensing requirements and are expected to give full life performances. However, as a result of examining operating drives, General Electric has discovered evidence of intergranular stress corrosion cracking (IGSCC) in some CRD drive components and has made design improvements to preclude IGSCC in the future. The spare parts for CRD components purchased by the Supply System incorporate this revised design. Along with the other parts of the drive, the collet retainer tube, piston tube, and index tube will be routinely checked and changed out, if necessary, with the parts incorporating the revised design.

Q. 211.019
(4.6.1)

We note in the third item of Table 1.3-8 of the FSAR that you intend to cut and cap the CRD return line as a resolution of the stress corrosion problem in this line. Discuss the impact of this modification on the plant. In particular, provide additional information addressing, but not limited to, the following items:

a. Compare the reactor vessel makeup capability when either one or two CRD pumps are operating, before and after the proposed modification. Additionally, provide a commitment to perform preoperational testing to verify the modified flow capability.

b. Provide a commitment to perform preoperational testing to verify the individual performance to the modified CRD components and those portions of the CRD system that are potentially affected by the cut and capped CRD return line (e.g., the equalizing valves, filters, scram times and the settling function).

c. If you choose to add new equalizing valves, discuss the potential effect on drive speeds throughout the lifetime of the WNP-2 facility. In particular, evaluate whether the CRD system can be adversely affected by a voiding of the drive exhaust header after a postulated single failure.

d. Evaluate the effect, throughout the lifetime of the WNP-2 facility, of the added flow through such components as the drive exhaust header and the stabilizing lines. In particular, discuss the increased potential for corrosion products from the carbon steel piping to be deposited as additional foreign matter in the drives.

e. Discuss the potential for, and effect on, flow reversal through the directional control solenoid valve over the plant lifetime.

f. Discuss the anticipated effect of your modifications to the CRD system on the ΔP settling function across the control rod drives to ensure latching of the rods after withdrawal.

Response:

a. Several plants have been tested for acceptability of the CRD system operation with the return line isolated. Results from these initial reactor tests indicated that (1) postulated system performance deterioration did not in fact occur when the return line was isolated and (2) that all system functions performed normally.

The basic design of the WNP-2 CRD system is the same as that of Peach Bottom NPS, where more detailed tests were performed. These tests have confirmed the initial results. The successful operation of several plants, most of which have been operating in excess of one year with the return line isolated, together with experimentally verified theory, confirm that the return line modification does not impair the operability of the CRD system.

The calculated maximum impact of deleting the return line on CRD injection capability is a reduction from 170 gpm to 135 gpm for single-pump operation. For two-pump makeup, the CRD flow capability was conservatively calculated by GE to be 185 gpm. This rate represents a configurtion where the pump minimum flow bypass to the CST was closed. Performance tests are expected to validate this 185 gpm injection rate or a significantly greater rate.

GE has transmitted the results from Peach Bottom tests to the NRC via the correspondence listed as References 1, 2, and 3.

The NRC requested GE by letter of January 28, 1980, to recalculate the makeup flow capacity for the 251-inch BWR/5 without the CRD return line. This generic information has been provided by letter of May 2, 1980, from R. L. Gridley (GE) to D. G. Eisenhut (NRC), concurrently with this docketed response for LaSalle. The results indicate that the 251-inch BWR/5 CRD system without a return line (capped Nozzle #10) can achieve a vessel makeup flow in excess of its calculated boiloff rate of 180 gpm. This confirms the same boiloff rate as previously documented in a March 14, 1979, submittal from GE.

b. The control rod drive preoperational test will demonstrate that the system is fully oprational and that all components including the hydraulic drive mechanisms, pumps, and flow control valves function properly. The CRD system will be configured with the modifications noted in the NRC concern.

c. In order to assure satisfactory system operation with the single failure of an equalizing valve, the proposed design modification will include the addition of two equalizing valves installed in a parallel configuration. The failure of either valve will not impair CRD operation for any foreseen operating or accident condition.

d. There will be no increased potential for carbon steel corrosion products to be deposited in the drives. All lines in the WNP-2 CRD Hydraulic System after the drive water filters are made of stainless steel.

e. General Electric has completed lifetime testing of the subject directional control valves in response to the concern of pressurization and flow in the reverse direction. It is concluded from these tests that no adverse effects on the test valves resulted from the reverse flow mode of operation. (A copy of the report on these valve tests has been sent to Messrs. V. Stello and R. J. Mattson of the NRC by G. G. Sherwood of GE-Licensing on April 9, 1979).

f. In the new system configuration, the exhaust water header is essentially isolated from the rest of the CRD hydraulic system and maintained at nearly reactor pressure. During periods of rod motion and subsequent rod settling, the flow discharged from the drive to the exhaust water header is readily dissipated to adjacent drives (i.e., via reverse flow through the -121 directional control valves of adjacent HCUs) and causes the pressure in the exhaust water header to increase only a few psi. Thus, no detrimental effects on rod settling performance is expected to result from this CRD system modification. Furthermore, evidence of satisfactory drive settling will be established during preoperational testing with the return line eliminated. CRD drive operation within acceptable defined margins will be demonstrated by this testing prior to plant operation.

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Q. 211.020
(5.4.1)
(15.0)

Appendices G and H of the LaSalle and Zimmer FSARs, respectively, provide information on the recirculation flow control system. State whether this information is applicable to the WNP-2 facility. If applicable, it should be referenced. Otherwise, provide comparable information regarding this system in your application.

Response:

"Appendix H" has been included in the WNP-2 FSAR as part of Amendment 4.

Q. 211.021
(5.4.1)

With respect to the recirculation flow control system:

a. Provide justification for the 8°F subcooling limitation in operating the recirculation pump.

b. In Section 5.4.1.3 of the FSAR, you state that if the subcooling falls below 8°F, the 60 Hz power supply is tripped to the 15 Hz power source to prevent cavitation of the recirculation pump, the jet pumps, and/or the flow control valve. This temperature limitation on subcooling appears to initiate a two-pump trip transient. Indicate whether the pump coastdown rate resulting from the above condition is more severe than the one assumed in the transient analysis in Chapter 15 of the FSAR. If so, reanalyze the pump trip transient using the more severe pump coastdown rate. Describe the consequences of a sudden increase in the recirculation pump speed which might occur, for example, due to an increase in the frequency of the power supply.

Response:

a. Recirculation system computer analysis shows that for core flows beyond the range of applicability of the flow control valve (FCV) cavitation interlock, jet pump nozzle cavitation is the most limiting of the recirculation system component cavitation concerns. The jet pump nozzle is calculated to enter incipient cavitation at subcoolings below 10°F (8°F is not correct for WNP-2 with the FCV wide open, which is the most limiting location on the power/flow map). The 10°F setpoint, therefore, protects against recirculaton system cavitation for all core flows beyond the range that the FCV cavitation interlock operates. Page 5.4-3 has been changed to show 10°F vice 8°F.

b. The condition considered in the transient analysis in Chapter 15 is the most severe as regards pump coastdown rate; no reanalysis is necessary. The final sentence in Question 211.021b is concerned with the potential for recirculation system cavitation following a two-pump trip when speed is increased slightly relative to the LFMG set speed. The margin to cavitation would be a function of the amount of speed increase, but in no case would the speed induce cavitation because of the relatively large degree of subcooling available when operating on the LFMG set.

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Q. 211.022
(5.4.1)

Indicate the units associated with the value of CV shown in Figures 5.4-4a and 5.4-4b of the FSAR.

Response:

The units of FCV C_V are gpm/$\sqrt{psi}$.

Q. 211.023
(3.5)
(4.6.1)

Provide assurance that the essential portions of the CRD system (i.e., the 1-inch supply and return piping located inside the containment) shown in Figures 3.5-20, 3.5-22, and 3.5-27 of the FSAR, are protected from the effects of high or moderate energy line breaks. In responding to this item, consider postulated breaks such as ones in the high pressure core spray (HPCS) system, the feedwater injection system, and the reactor coolant pressure boundary. Our concern is whether pipe whip and/or jet impingement forces resulting from these postulated breaks can impair the capability of the CRD system to scram. Additionally, provide an assessment of the damage which could occur to the cluster of CRD return and supply lines, including the effect on the scram capability, due to a postulated rupture of a single CRD supply or return line.

Response:

Rupture of CRD insert and withdrawal piping would not prevent safe shutdown since the control rods would be inserted by reactor water. The only condition of the CRD insert and withdrawal piping that can impair the scram capability would involve crimping of the withdrawal piping.

A testing program to evaluate the susceptibility of the 3/4-inch CRD piping to crimping caused by pipe breaks inside containment has been completed and documented by the GE proprietary report, "Hanford 2 Crimped CRD Hydraulic Withdraw Line," NEDE-24834, June 1980 (Reference 3.6-23). The program determined whether it is possible to cause a crimp in the CRD hydraulic withdrawal lines sufficient to affect insertion of the control rods and to what extent crimping is required before the insertion rate is affected. The loading moments and forces needed to crimp samples of control rod drive hydraulic piping sufficient to affect the insertion rate of the control rods were determined.

The tests demonstrate that the withdraw lines must be crimped severely before scram times are increased significantly. It is concluded from the tests that the crimping that could occur by the "worst case" postulated pipe break will not generate loads of sufficient magnitude to affect the insertion of the control rods. The "worst case" pipe break referred to is that of the recirculation line, in terms of forces and energy. The postulated pipe break is considered to generate a jet impingement load but not a pipe whip load, the latter being prevented to occur by the pipe whip restraints discussed in 3.6.2.3.3. The "worst case" pipe break postulated bounds the effects of a break in the piping systems referred to in the question; the effects of such system breaks are therefore not discussed.

The assessment of damage and the effects on scram capability due to rupture of a single CRD supply line or return line, as referred to in the question, are not discussed since they are not credible events.

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Q. 211.024
(5.4.7)

It is our position for all light-water-reactors that the RHR system shall be capable of bringing the reactor to a cold shutdown condition using only safety-grade systems. Confirm that this requirement is satisfied for the WNP-2 facility. In responding to this request, include a consideration of the capability of the air supply system which is used to operate the RCIC steam and condensate control valves located at the RHR heat exchanger when the RHR system is in the steam condensing mode.

Response:

All portions of the RHR system required to function in bringing the reactor to a cold shutdown condition are safety grade and redundant except for the shutdown cooling suction line. If this line were unavailable due to a single failure of a suction valve, a safety grade alternate shutdown cooling path can be established through the ADS valves as described in the notes to Figure 15.2-11, Activity C1 or C2.

The steam condensing mode will not be utilized at WNP-2 including all piping, valves, and equipment dedicated to the steam condensing mode (see 5.4.6.2.5.3). No credit has been taken for the steam condensing mode in any safety analysis.

Q. 211.025

It is also our position for all light-water reactors that the RHR system shall be capable of bringing the reactor to a cold shutdown condition with only on-site or off-site power available, assuming the most limiting single failure. In this regard, while we note that Figure 15.2-10 of the FSAR shows a number of available success paths to achieve a cold shutdown condition, vessel depressurization using the RHR system in the steam condensing mode is not shown. (This latter mode is one of the success paths when off-site power is not available.) Either correct this figure or justify this omission. If vessel depressurization were to be achieved by manual actuation of the relief valve, indicate how many valves would have to be actuated. Describe your plans for testing the alternate modes to achieve shutdown cooling. Demonstrate that adequate passage of water through the safety-relief valves can be achieved and maintained when the alternate method is in use. Indicate the quantity of air supplied, its source, and the time interval before the air is exhausted.

Response:

The omission of the steam condensing mode is justified because there is not requirement for the steam condensing mode to be used to bring the reactor to a cold shutdown. Steam condensing is not a safety grade means to depressurize the reactor. The steam condensing mode of RHR has been deactivated for WNP-2 and will not be utilized, see 5.4.6.2.5.3.

If vessel depressurization were to be achieved by manual actuation of relief valves, three valves would need to be actuated to pass sufficient steam flow to depressurize the vessel.

WNP-2 is a member of the BWR Owner's Group which performed a low pressure liquid flow test to demonstrate the operational adequacy of the safety/relief valves (SRVs) to pass sufficient water flow to meet the requirements of the alternate shutdown cooling mode. The results of this test program are presented in NEDE-24988-P which was transmitted to the NRC by a letter from T. J. Dente (BWR Owners' Group) to D. G. Eisenhut (NRC), dated September 25, 1981. WNP-2 believes that this test program adequately demonstrates the ability to use the SRVs in the alternate shutdown cooling mode and does not plan to perform any additional testing.

Additionally, WNP-2 has performed calculations to demonstrate that adequate passage of water through SRVs in the alternate shutdown cooling mode can be achieved at the WNP-2 plant. The results of these calculations are summarized below.

In the alternate shutdown cooling mode, with one RHR pump in operation, the total system resistance head was calculated to be 550 feet using one SRV valve. Line losses, static head, heat exchanger losses, inlet and outlet losses at the pump, and strainers and losses through the SRV (calculated from experimental data obtained from the B&W Owners' Group tests) were considered in establishing this total system resistance head. At this calculated head, the pump capacity is 4000 gpm and the reactor pressure is 160 psig.

Following normal reactor depressurization (i.e., 100°F/hr.), an alternate shutdown coolant flow rate of 2600 gpm would be required to bring the reactor to a shutdown condition. For WNP-2, this flow capacity can be achieved by using one ADS valve as demonstrated above, although three valves are always available.

The air supply for the ADS valves is discussed in the response to Question 211.048.

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Q. 211.026
(5.4.7)

In the shutdown cooling mode, the flush water valves are opened and closed outside the control room. Identify in Section 5.4.7.2 of the FSAR, the local flush water valves which are operated and the source of this flush water. Discuss the consequences if the operator were to omit this procedure and/or forgot to close a local flush water valve and continue shutdown operations. Include a discussion of the available interlocks in your response.

Response

The only valves opened for warming and flushing are E12-F040, E12-F049 for RHR Loop B or E12-F071A, E12-F072A for RHR Loop A (Reference Figures 5.4-13a and 5.4-13b).

Loop B valves, E12-F040 and E12-F049, are operated from the control room and are provided with position indication so it is highly unlikely they would be left open after prewarming. Loop A valves, E12-F071A and E12-F072A, must be operated locally; RHR Loop B is the preferred loop for initiating shutdown cooling due to the prewarm valve arrangement and because RHR Loop A has no RPV head spray cooling capability.

If prewarming valves were accidently left open following initiation of shutdown cooling, RPV coolant inventory would drain to radwaste. If loss of inventory remained undetected and makeup did not occur, isolation valves E12-F008 and E12-F009 would automatically close at the RPV scram level (Level 3); depressurization or loss of water from the RHR system causes a low pressure alarm in the RHR discharge piping, PIS-N022.

Q. 211.027
(5.4.7)

In Section 5.4.7.1.3 of the FSAR, you indicate the specific RHR relief valves and the RHR design pressures used as the basis for providing relief capacity. Expand your discussion by indicating the relief valve capacity, the nominal setpoints, the setpoint tolerance, and the ASME class designation of these valves and lines. In addition, discuss the vulnerability of the RHR system to malfunctions which could result in overpressurization of low pressure piping. Support your evaluation by providing an outline of all operating procedures required to bring the plant to a cold shutdown condition from hot standby and the procedures for plant startup from cold shutdown.

Response:

The relief valves protecting the RHR system are listed below (Reference Figures 5.4-13a and 5.4-13b):

Relief Valve	Nominal Setpoint/ Capacity	Location	Piping Design Pressure
RHR-RV-88	125 psig/ 10 gpm	RHR pump suction from suppression pool	125 psig (Loop C)
RHR-RV-5	220 psig/ 25 gpm	RHR pump suction from recirc pipe	220 psig
RHR-RV-25	500 psig/ 25 gpm	RHR discharge	500 psig
RHR-RV-30	125 psig/ 10 gpm	RHR flush line to radwaste	125 psig
RHR-RV-36	This relief valve has been permanently removed from WNP-2. It has been replaced with a Blind Flanged "Testable Pipe Spool Assembly", RHR-TPSA-1.		

All RHR relief valves are purchased to ASME Section III, Class 2 requirements to match the requirements of the piping they are protecting. As such, the setpoint tolerance is + 3%, per ASME Section III, Paragraph NC-7614.2.

The RHR system is connected to higher pressure piping at: (1) shutdown suction; (2) shutdown return; (3) LPCI injection; and (4) head spray. The vulnerability to overpressurization of each location is discussed in the following paragraphs.

Shutdown suction has two gate valves (F008 and F009) in series which have independent pressure interlocks to prevent opening at high inboard pressure (135 psig reactor pressure). No single active failure or operator error will result in overpressurization of the lower pressure piping. With the RHR pumps normally lined up to the suppression pool (F006 closed), the shutdown cooling suction line is protected for thermal expansion or from leakage past F008 by F005. With all the RHR suction valves closed, the suction piping is protected for thermal expansion or leakage past the discharge check valves by F088.

The shutdown return line has a swing check valve (F050) to protect it from higher vessel pressures. Additionally, a gate valve (F053) is locate in series and has a pressure interlock to prevent opening at high inboard pressures (135 psig reactor pressure). No single active failure or operator error will result in overpressurization of the lower pressure piping.

The LPCI injection line has an air testable swing check valve (F051) to protect it from higher vessel pressures. The air operator on the testable check valve is only capable of opening the testable check valve if the differential pressure is less than 2.0 psid. Additionally, a gate valve (F042) is located in series and has pressure interlocks to prevent opening at high differential pressure (nominally 750 psid). No single active failure or operator error will result in overpressurization of the lower pressure piping.

The head spray piping has three swing check valves in series (two belonging to the RCIC system and one (F019) belonging to the RHR system), to protect it from higher vessel pressures. Two of the swing check valves have air operators but they are only capable of opening the testable check valve if the differential pressure is less than 2.0 psid. Additionally, a globe valve (F023) is located in series and has a pressure interlock to prevent opening at high inboard pressures (135 psig reactor pressure). No single active failure or operator error will result in the overpressurization of the lower pressure piping.

Overpressurization protection of the RHR discharge piping for thermal expansion or from leakage past the head spray, shutdown injection, and LPCI isolation valves is provided by F025.

F030 protects the drain piping form the RHR system to radwaste from thermal expansion or from leakage past the isolation valves F071 and F072.

OUTLINE OF OPERATING PROCEDURE AND RHR OVERPRESSURIZATION SAFEGUARDS

1. Plant Shutdown to Cold Shutdown from Hot Standby* With Safety Grade Systems

Reactor Condition		Operating Mode Used	RHR Over-pressurization Safeguard
Depressurization from hot standby to 135 psig the suppression pool depressurizes vessel	o	Main steam relief valve	RHR isolated.
	o	Initiate and operate pool cooling mode of RHR system.	Low pressure mode, no safe-guard required.
Cooldown from 135 psig to cold shutdown	o	Initiate and operate shut-down cooling mode of RHR	Redundant pres-sure interlocks on F008 and F009 close valve above pressure inter-lock setpoint.

2. Plant Startup from Cold Shutdown

Reactor coolant RPV head replaced valves above pressure inter-lock setpoint.	o	Terminate shut-down and isolate RHR	Redundant pres-sure and F009 close
Remainder of startup	o	Standard	RHR isolated.

* Normally, the main condenser is the heat sink during hot standby, but, because of larger RHR interface, it is assumed that the main condenser is unavailable.

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Q. 211.028
(5.4.7)

Discuss the need and provide the design basis for incorporating a pressure interlock to prevent the connection of the RHR discharge piping to the primary system whenever the actual pressure difference across the discharge valve is greater than the design value for this pressure differential. Identify the affected valves.

Response:

Refer to Figure 5.4-13a for valve numbers. The RHR discharge piping is connected to higher pressure piping at shutdown return, LPCI injection and head spray. Only the LPCI injection valve (F042) has a pressure differential interlock. The other two injection points have reactor pressure interlocks. The interlocks are described below.

The shutdown return line has a swing check valve (F050) to protect it from higher vessel pressures. Additionally, a globe valve (F053) is located in series and has a pressure interlock to prevent opening at high inboard pressures (approximately 135 psig reactor pressure), which is well below the design pressure of the RHR discharge pipe (500 psig). No single active failure or operator error will result in overpressurization of the lower pressure piping.

The LPCI injection line has an air-testable swing check valve (F041) to protect it from higher vessel pressures. Additionally, a gate valve (F042) is located in series and has a pressure interlock to prevent opening at high differential pressure (approximately 700 psid). The pressure differential setting is based on the difference between full reactor pressure and the shutoff head of the RHR pump. This allows the injection valve to open at the earliest possible moment after a LOCA signal. Although the injection valve (F042) is open, the RHR discharge pipe is not subject to primary system pressure until the RHR pump discharge pressure exceeds reactor pressure and opens the check valve (F041). This will occur at about 300 psig, which is the approximate shutoff head of the RHR pump. No single active failure or operator error will result in overpressurization of the lower pressure piping.

The head spray piping has three swing check valves in series (two belonging to the RCIC system and one (F019) belonging to the RHR system), to protect it from higher vessel pressures. Additionally, a globe valve (F023) is located in series and has a pressure interlock to prevent opening at high inboard pressures (approximately 135 psig reactor pressure), which is well below the design pressure of the RHR discharge pipe (500 psig). No single active failure nor operator error will result in overpressurization of the lower pressure piping.

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Q. 211.029
(5.4.7)

Provide more detailed information in Section 5.4.7.1 of the FSAR regarding the actuation of the automatic minimum flow valves which are used to protect the RHR pumps from damage if these pumps were to be operated when the discharge valve is closed. For example, state the flow rates which would initiate a signal to open and close the minimum flow valves. Indicate whether the control system satisfies the requirements of IEEE Standard 279-1971.

Response:

The minimum flow valve opens automatically at main line flows less than approximately 800 gpm. This allows flow to return to the suppression pool through the minimum flow bypass line, which branches off the main line upstream of the flow element. The minimum flow valve closes at main line flows greater than 800 gpm and forces the entire pump discharge flow through the main line. The text of 5.4.7.1.2 is revised to reflect this and references the setpoint controlling document, i.e., Chapter 16, Technical Specifications.

The minimum flow valve controls meet IEEE-279 requirements.

Q. 211.030
(5.4.7)

In Figure 5.4-15 of the FSAR you present the RHR pump characteristic curves. However, two sets of curves are shown, one for the maximum diameter piping and the other for the minimum diameter piping. Indicate which of the head versus flow rate characteristics was used in the performance evaluation of the ECCS and the RHR system.

Response:

Figure 5.4-15 has been replaced with Figures 5.4-15 a, b, and c. These figures are the actual pump performance curves.

The LPCI flow assumed in the ECCS analysis is given in Table 6.3-2. Percent LPCI flow versus reactor pressure vessel (RPV) pressure is given in Figure 6.3-9. RHR flows assumed in the containment analyses for other modes of RHR operation are given in Table 6.2-2. Calculations performed by the AE using the pump performance curves ensure the flow values in Figure 5.4-14b and in the "full capacity" column of Table 6.2-2 are met.

Q. 211.031
(5.4.7)

In Table 5.4-3 of the FSAR, you indicate that the RHR isolation valves MOF008 and MOF009 are closed upon generation of a signal indicating reactor low water level. It appears that you have mislabelled these valves in this table as "recirculation line suction" rather than as "RHR isolation". Indicate whether this valve isolation signal is based on the same signal as the RHR pump actuation in the low pressure coolant injection system (LPCI) mode (i.e., a water level which is 1.0 foot above the active core). If not, indicate the water level in the reactor pressure vessel at which the isolation signal is generated, thereby isolating the RHR suction valves. Show that cooling of the reactor core can be maintained assuming a pipe break outside the containment. Assuming a pipe break outside containment in the RHR system when the plant is in a shutdown cooling mode, provide the following additional information:

a. Identify the systems available for maintaining core cooling.

b. Indicate the maximum discharge rate resulting from the postulated break and the time interval available for recovery based on the discharge rate and its effect on core cooling.

c. Identify the alarms available to alert the operator in the event of such a break and show that sufficient time is available for operator action to prevent damage to safety-related systems.

d. Indicate what recovery procedures are available.

e. Following a postulated break in a moderate energy line, the single failure criterion should be applied in the manner discussed in Section 3.6.1 of the Standard Review Plan (SRP) NUREG-75/087, and in Branch Technical Position APCSB 3-1, "Protection Against Postulated Piping Failures In Fluid Systems Outside Containment", November 24, 1975.

Response:

Table 5.4-3 has been revised to indicate that the RHR isolation valves MOF008 and MOF009 are the "shutdown cooling suction" valves.

F008 and F009 isolate at reactor water level 3 which is 174 inches above the top of the active fuel. LPCI is initiated at reactor water level 1 (Reference Figure 5.2-6).

The following items respond directly to the items requested above:

a. Should a pipe failure occur, outside the containment, in the RHR system when the plant is in shutdown cooling, acceptable core cooling would be achieved by the core cooling systems. The following core cooling systems would be available to maintain core cooling when applying SRP 3.6.1 and BTP APCSB 3-1:

   - If the single active failure is HPCS the following are available: LPCS + 2 LPCI + ADS.

   - If the single active failure is LPCS the following are available: HPCS + 2 LPCI + ADS.

   - If the single active failure is LPCI (not shutdown cooling loop) the following are available: HPCS + LPCS + 1 LPCI + ADS.

   A special analysis for LaSalle was made of a hypothesized crack in the RHR suction line outside of primary containment during operation in the shutdown cooling mode. This analysis was performed with the standard GE LOCA models. For this event the realistic or actual system conditions are as follows.

   No high pressure systems are available for water inventory restoration, i.e., no feedwater, no CRD flow, no HPCS, and no RCIC, but the reactor water level is at normal elevation at the start of this event. Vessel pressure is less than 150 psia and the MSIVs are closed at the start of this event. The decay heat is approximately 1% of rated power, i.e., approximately 4 hours have elapsed subsequent to reactor scram or shutdown.

   For a conservative solution to this hypothetical event, the following sequence of events and conditions were assumed to exist or ensue from the hypothesized crack in the suction line:

1. Crack occurs in the RHR line, water level decreases to reactor vessel level 3, then the RHR isolation commences and is completed 40 seconds later.

2. System pressure rises as a result of the isolation to where the vessel pressure reaches the SRV setpoint thus causing them to open, blowdown, and reclose.

3. Inventory depletion results from blowdown and from leakage out of the cracked line.

4. The operator manually actuates ADS to reduce vessel pressure to where the low pressure ECCSs can replenish the water inventory.

5. Water level is restored to within normal limits to protect the core from over temperature.

Results are presented in Figures 211.031-1 through 211.031-4 for a bounding calculation of this event. The standard Appendix K assumptions were used along with these conservative initial conditions:

1. The timing index was started at the RHR isolation (when level 3 was attained) to neglect the time for the level to fall from normal water level to level 3 (about 2 minutes).

2. An initial pressure of 1055 psia was assumed to neglect the pressure rise time from the 150 psia (pressure permissive for shutdown cooling) upon completion of RHR isolation to the 1055 pressure attainment. This results in increased mass loss during the 40-second isolation period due to greater driving pressure. It also decreases the time increment needed for pressure to attain the relief valve setpoint.

3. The analysis assumes that scram occurs coincident with the start of the timing instead of 4 hours earlier. This assumption maximizes the peak clad temperature and steam production during the transient thus driving more fluid from the vessel and prolonging the blowdown phase.

4. Only one LPCS and one LPCI loop were assumed to be available throughout the event. Operator action does not include possible diversion of the other two LPCI loops from the RHR mode.

5. The crack area used in he analysis is defined consistently with the MEB 3-1 guidance for crack size. The crack area is consistent with FSAR postulates.

Results fromt his conservative analysis are that more than 20 minutes are available for the operator to depressurize the vessel. Once the system pressure is below the LPCI or LPCS shutoff head, the reactor water level is restored to normal limits very rapidly. The maximum clad temperature is much less than the arbitrary 2,200°F limitation.

b. The RHR system is a low pressure system, and all of the piping outside of the primary coolant pressur boundary is classified as "moderate energy" piping and, according to BTP MEB 3-1, only cracks (i.e., not breaks) are considered in moderate energy piping. Reactor vessel pressure must be decreased to below 135 psig before the RHR system can be connected to the reactor vessel.

The maximum discharge resulting form the largest crack in the RHR piping outside containment is determined using the guidelines in BTP MEB 3-1 for moderate energy piping. The maximum discharge rate is estimated to be 1,000 gpm, which has been confirmed in the pipe break and missile study) and is based upon a pipe break in the pump discharge piping (18" Schedule 30) at the pump discharge flange, normal water lervel in the reactor during shutdown cooling (approximately 50 inches below the steam line nozzles), reactor pressure of 135 psig, and the RHR pump running at 7,450 gpm (normal shutdown flow). The flow rate sued in the LaSalle analysis referenced in part (a) of this response was 1,443 gpm. See (c) below for the time interval available for recovery.

c. The following alarms are available to the operator in the event of a pipe break in the shutdown cooling line outside containment.

1. Low reactor water level alarm (Level 4, 198.7 inches above active fuel).

2. Low reactor water level (Level 3) to scram and isolate MOF008 and MOF009.

3. Equipment area high temperature (Class 1E) to isolate MOF008 and MOF009.

4. High flow rate in the shutdown cooling suction line to isolate MOF008 and MOF009 (Class 1E).

5. Reactor building floor drain sump level for leakage rates greater than 50 gpm.

6. Reactor building floor drain leakage rate alarm (5 gpm).

7. ECCS pump room flood level instrumentation (Class 1E), installed to detect passive failures in the ECCS post-LOCA (Reference response to FSAR Question 212.003).

Notwithstanding these alarms, however, only about 13,000 gallons of water will spill out the break before the reactor water level drops from the normal shutdown cooling level to Level 3, automatically closing MOF008 and MOF009 and isolating the break. No single active failure can prevent isolation of the break.

For the largest pipe break (1000 gpm), which can only occur in the RHR A or B pump rooms, the flood level resulting from 13,000 gallons will not affect operation of either RHR pump A or B. In addition, the flooding would only affect the room in which the pipe break occurred because of the water resistant integrity of the RHR A and B pump rooms. Therefore, no operator action is required to protect these pumps.

Pipe breaks in the RHR shutdown cooling mode which can affect other ECCS systems (LPCS, HPCS or RHRC) via flooding through the floor drain piping in the upper portions of the reactor building will have flooding rates less than 1000 gpm because they will be higher in the building (less static head), have less driving head due to friction losses, and smaller crack sizes (smaller diameter pipe). These pipe breaks in the upper portion of the reactor building will be immediately detected by the high flow (5 gpm) alarms in the floor drain downcomer piping. Regardless of what the pipe break discharge rate is, the flood level resulting from 13,000 gallons is not capable of affecting the operation of the LPCS, HPCS or RHRC pumps, assuming all of the water is spilled into each pump room. Again, no operator action is required to protect these pumps.

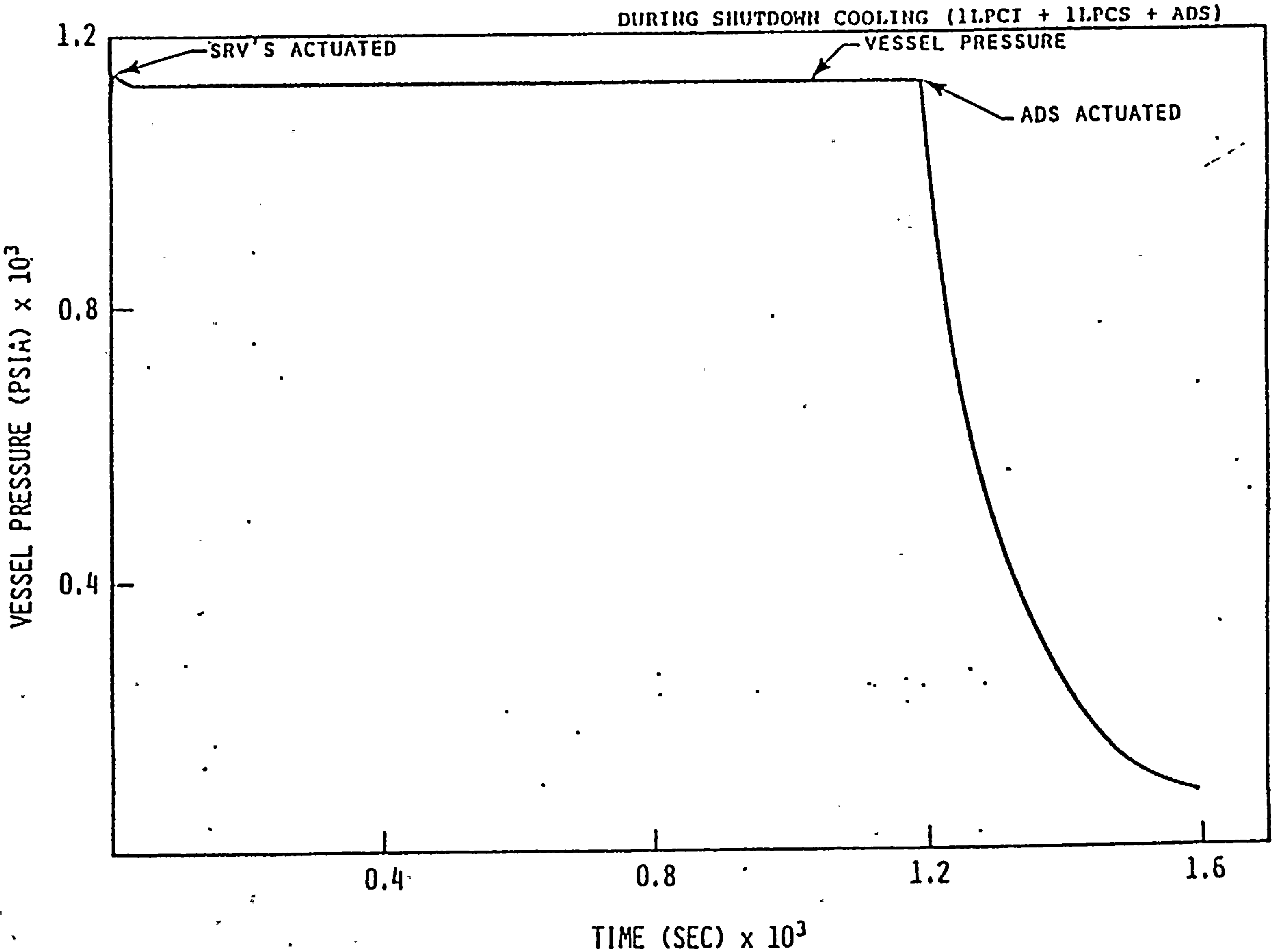
It should be noted that the environmental effects (pressure, temperature and humidity) of pipe breaks during shutdown cooling are being addressed by the ongoing pipe break and missile study.

d. If a break should occur in one RHR shutdown cooling loop outside containment during shutdown, the following action is taken upon detection and isolation. The main steam isolation valves will be reopened and reactor excess steam will blow down to the main condenser until the shutdown cooling process via the outer RHR loop is established.

The redundant shutdown cooling loop components are also not assumed to fail under the cited NRC requirements of BTP APCSP 3-1.

If the pipe crack should occur in the common manifold supplying both redundant loops, the isolation mechanism is the same as before, but recovery would require reversion to the alternate shutdown configuration discussed in 15.2.9. In this configuration, vessel water is circulated from the suppression pool through the RHR heat exchanger to the vessel with return to the suppression pool via the ADS discharge lines.

e. For application of single failure criteria, see (a) above.



WASHINGTON PUBLIC POWER SUPPLY SYSTEM
NUCLEAR PROJECT NO. 2

VESSEL PRESSURE VS. TIME FOR A CRACK IN THE RHR LINE

FIGURE 211.031-1

AMENDMENT NO. 23
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WASHINGTON PUBLIC POWER SUPPLY SYSTEM
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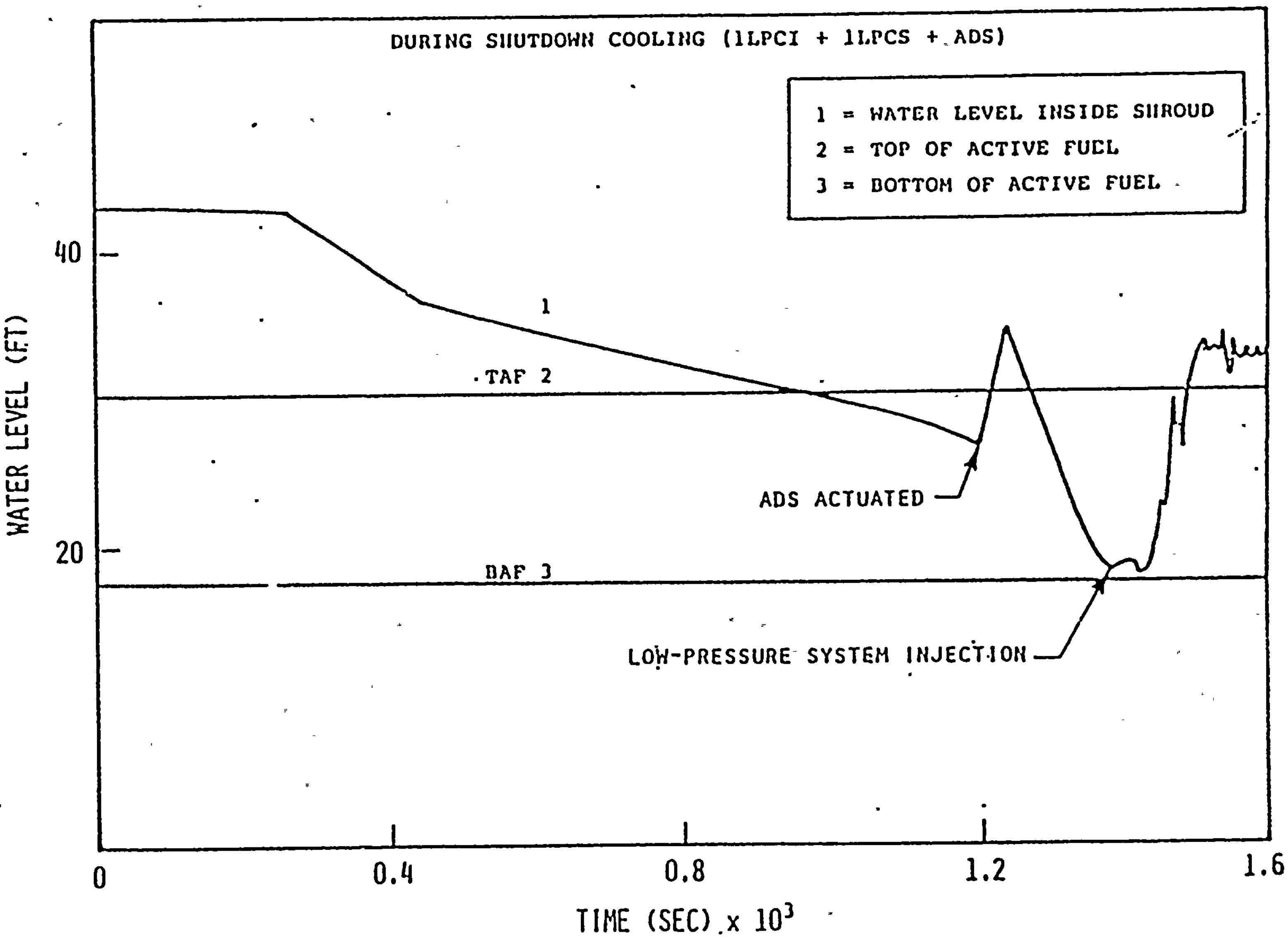
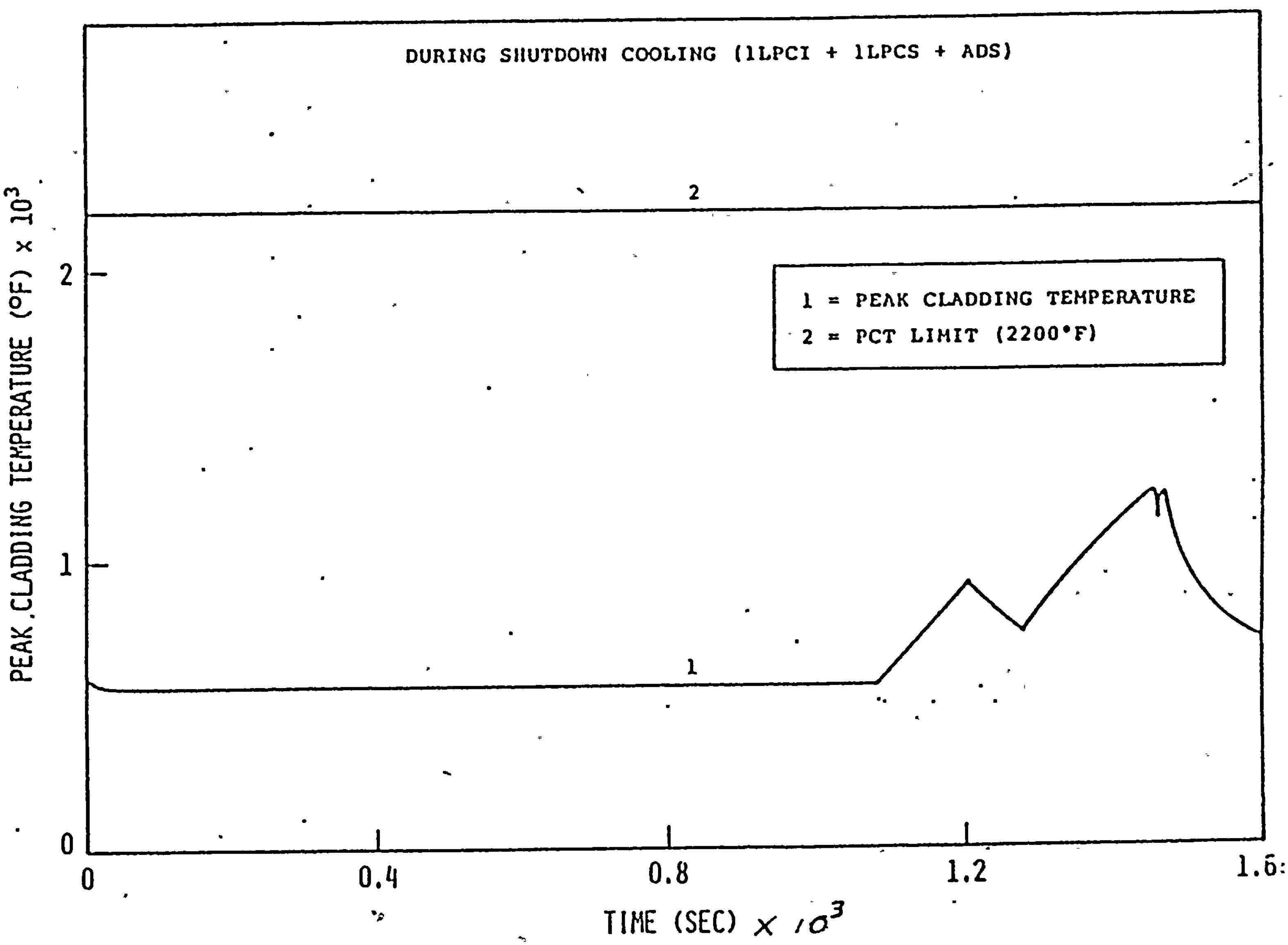


WATER LEVEL VS. TIME FOR A CRACK IN THE RHR LINE

FIGURE 211.031-2

AMENDMENT NO. 23
February 1982

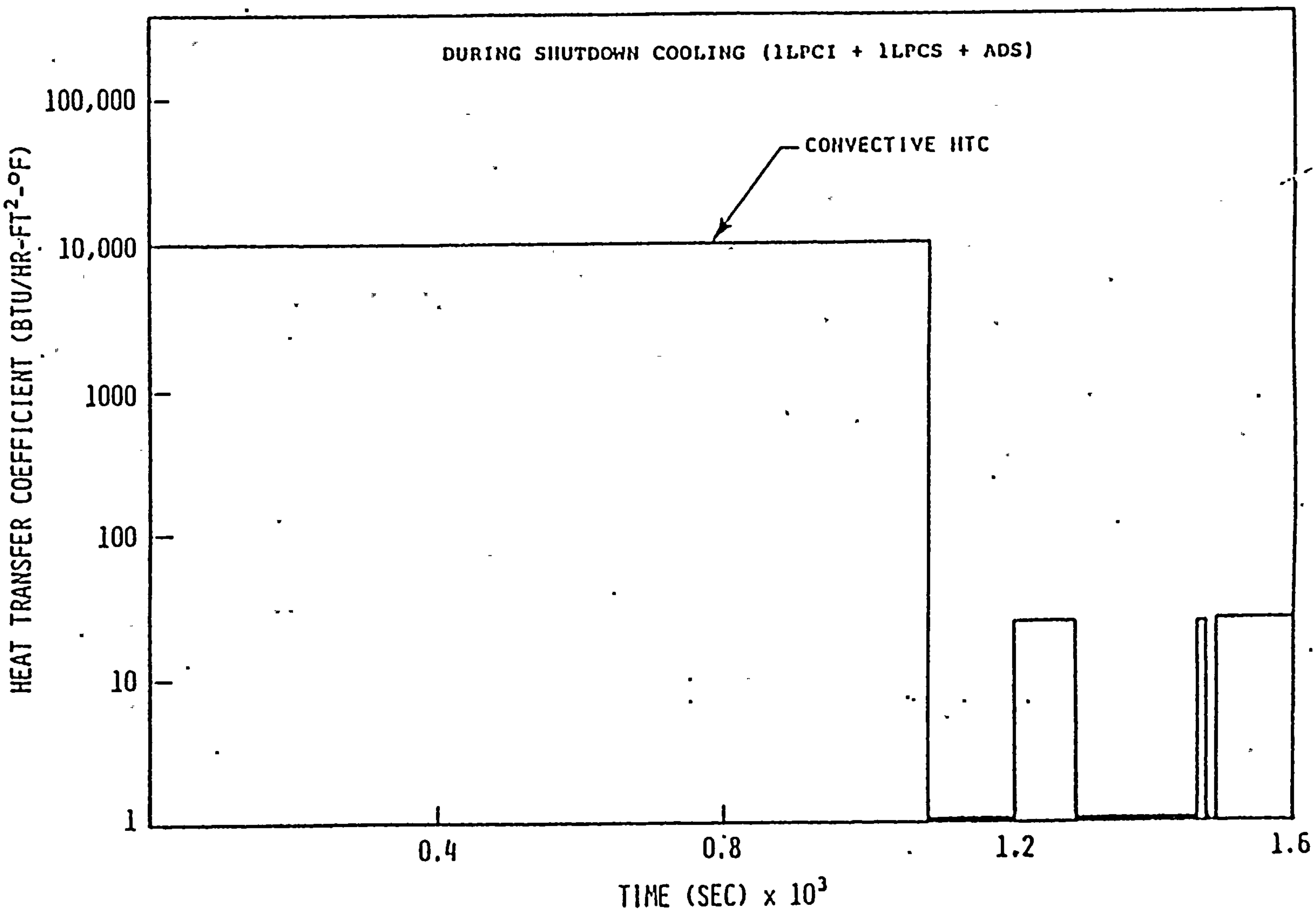


WASHINGTON PUBLIC POWER SUPPLY SYSTEM
NUCLEAR PROJECT NO. 2

PEAK CLADDING TEMPERATURE VS. TIME FOR A CRACK IN THE RHR LINE

FIGURE 211.031-3

AMENDMENT NO. 23
February 1982



WASHINGTON PUBLIC POWER SUPPLY SYSTEM
NUCLEAR PROJECT NO. 2

HTC AT PCT NODE VS. TIME FOR A CRACK IN THE RHR LINE

FIGURE 211.031-4

AMENDMENT NO. 23
February 1982

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Q. 211.032

Discuss the system design provisions incorporated into the facility to prevent damage to the RHR pumps in the LPCI mode during pump runout conditions in the ECCS operating mode and in the test mode. We not that Figures 5.4-13a, 5.4-13b and 5.4-14a of the FSAR indicate that a metering orifice is installed in the discharge lines. Indicate whether this metering orifice can perform the same function as a restricting orifice. If not, it is our position that the discharge lines of the RHR pumps should incorporate a restricting orifice.

Response:

The metering orifice in the discharge line does not serve as a restricting orifice.

The piping for each mode of RHR operation has been investigated to ensure that the resistance is low enough to allow the rated flows given in Figure 5.4-14b yet high enough to prevent pump runout. Restricting orifices are necessary in the system test lines to prevent excessive runout during suppression pool cooling and test modes and in the main discharge line to prevent excessive runout for LPCI and all other RHR modes. Engineering changes are currently being processed which will add these restricting orifices. Figure 3.2-6 will be revised to indicate the location of restricting orifice in the main discharge line.

Q. 211.033
(5.4.7)

Provide a more detailed description, including the location, of the RHR pump suction strainer which is inside the suppression pool. Indicate the pipe beds and the minimum height of the suppression pool water level above this strainer. Show that the required net positive suction head (NPSH) at the centerline of the RHR pump will be available when the pump is operating at its design conditions and at the most limiting operating conditions. Discuss the size of particles that could pass through the strainer into the RHR pump passages. Indicate the amount of material blockage it would take to significantly reduce the RHR pump suction flow from the suppression pool following a postulated LOCA.

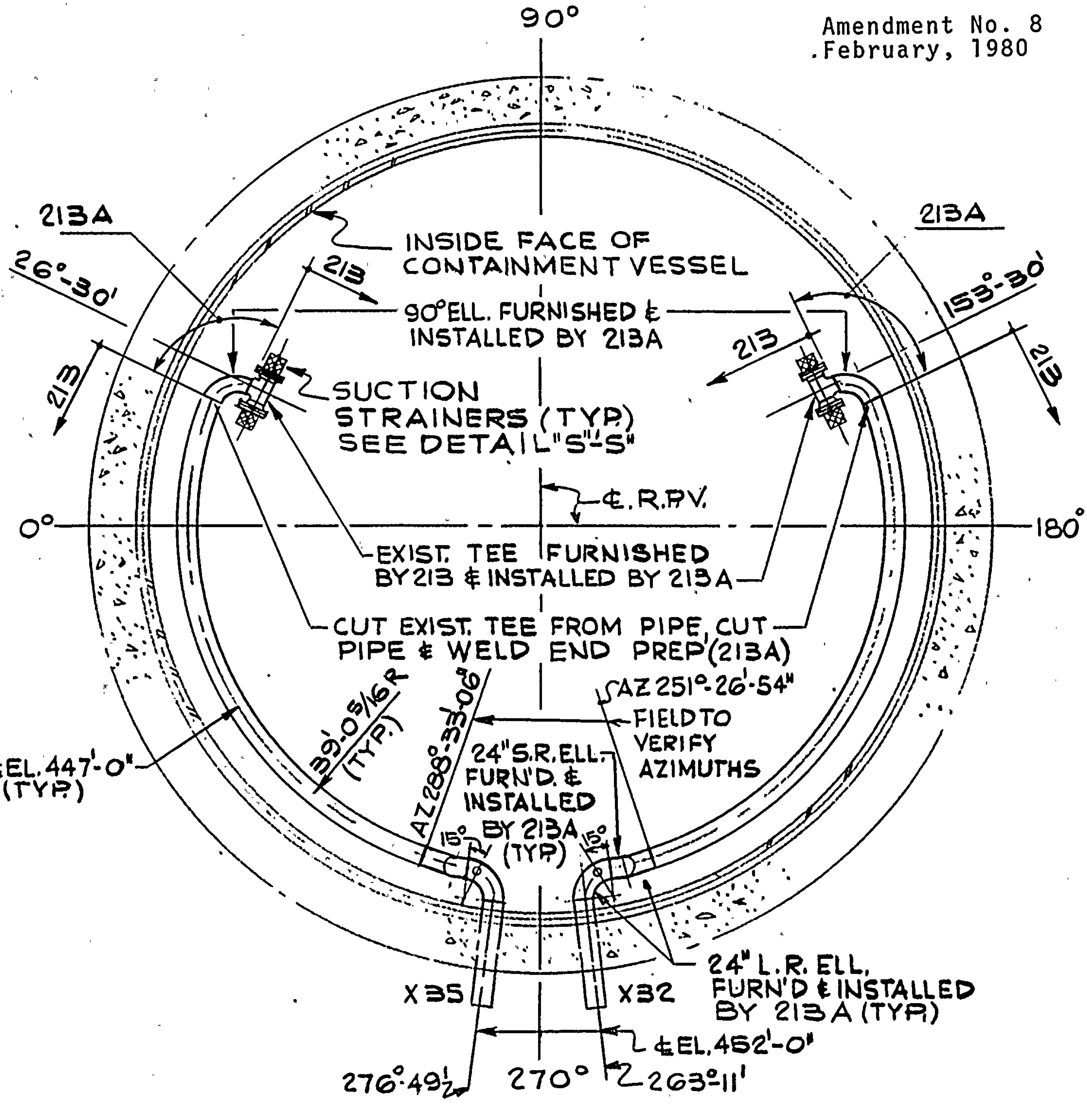
Response:

The suction strainers have been purchased to new criteria as defined by the Mark II Hydrodynamic Load Program. The specifications for the strainer were provided in the response to Question 022.039. The location of the suction strainers inside the suppression pool, as well as the pipe bends, are shown on Figures 211.033-1 and 211.033-2. Outside the suppression pool, RHR A and B loops have five elbows and RHR C has six elbows.

The minimum height of the suppression pool water level is el. 466'-0 3/4" and is controlled by the technical specifications. The centerline elevation of all the RHR suction strainers is el. 447'-0". The minimum NPSHA is calculated per Regulatory Guide 1.1. The calculation for RHR pumps is outlined in the response to Question 022.038. The friction loss in the suction piping for all the RHR loops is approximately 3 feet at 7900 gpm. Using the very conservative assumptions outlined in the response to Question 022.038, the minimum NPSHA is 36 ft., while the maximum required NPSH is about 13 ft. at 7900 gpm. (Reference Figures 6.3-10a, 6.3-10b, and 6.3-10c, RHR pump performance curves). The new suction strainers which meet the Mark II Hydrodynamic Loads will increase the suction friction losses, but with 23 feet of margin between the minimum NPSHA and maximum NPSHR at the most limiting operating condition, this will not affect the safe operation of the RHR pumps. Friction loss through the new strainer is about 4 feet with 50% of the surface clogged. This will be verified during preoperational testing.

The pump manufacturer imposed a maximum particle size of 0.09375 inch based on the size of the smallest orifice/flow path in the pump mechanical seal. This is significantly more restrictive than the requirement imposed by the containment spray nozzles which have an orifice opening of 0.26563 inch. Accordingly, the strainers are sized to prevent the passage of particles 0.09375 inch or greater. Since the water in the suppression pool is kept at a high quality, clogging of the strainers is not considered credible. Reflective insulation panels are used predominately within the primary containment, as well as, non-metallic mass insulation in limited applications. These constitute the only credible debris within the primary containment following a LOCA or seismic event. Blockage of the ECCS strainers by this debris is not considered credible as discussed in 6.2.1.1.2. However, the RHR system is designed to have adequate NPSHA with the suction strainers 50% clogged as noted in the response to Question 022.038.

Amendment No. 8
February, 1980

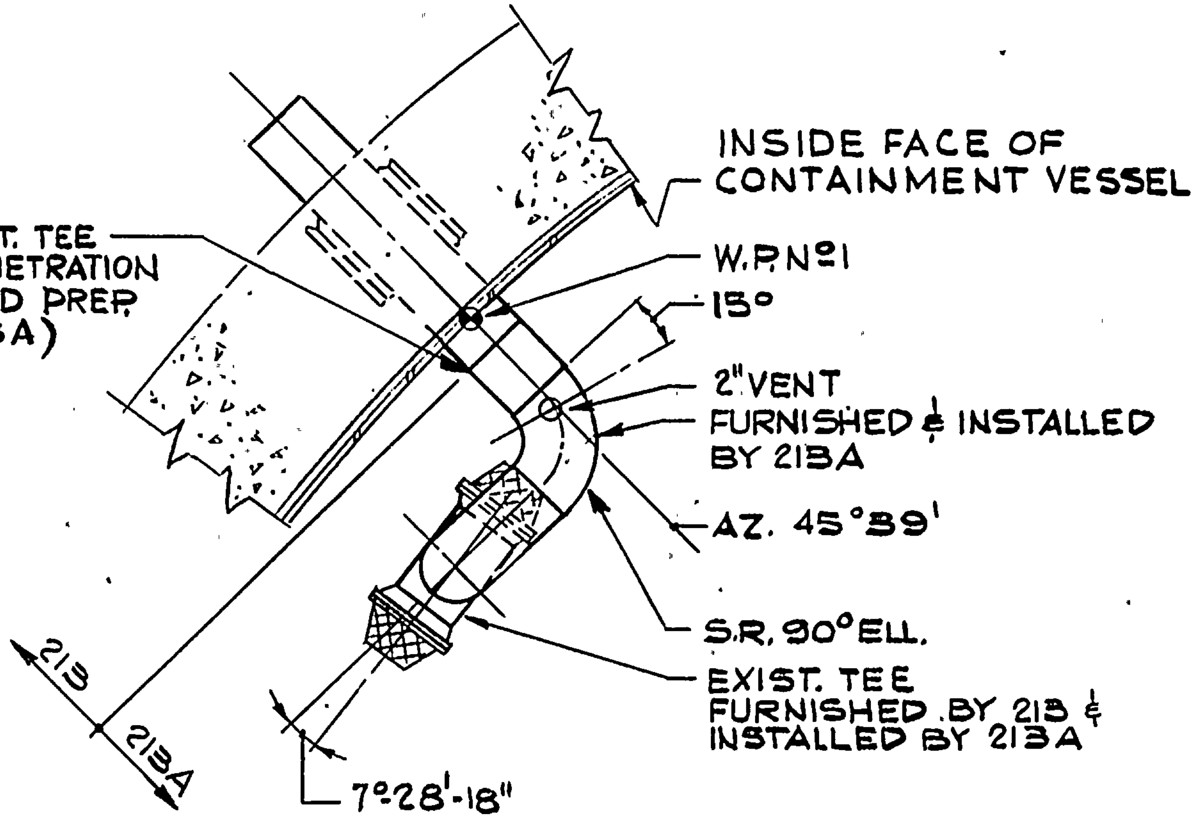


PLAN PENETRATIONS X-32 & X-35

SCALE: 1/16"=1'-0"

WASHINGTON PUBLIC POWER SUPPLY SYSTEM NUCLEAR PROJECT NO. 2	RHR A AND B SUCTION LINES INSIDE THE SUPPRESSION POOL	FIGURE 211. 33-1

Amendment No. 8
February, 1980



PLAN PENETRATION X-36

SCALE : 3/16 = 1'-0"

WASHINGTON PUBLIC POWER SUPPLY SYSTEM NUCLEAR PROJECT NO. 2	RHR C SUCTION LINE INSIDE THE SUPPRESSION POOL	FIGURE 211.33-2

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Q. 211.034
(5.4.7)

Provide the process data (i.e., flow, temperature, and pressure) for all modes of operation of the RHR system which you reference in Figure 5.4-14a of the FSAR (i.e., MPL Item No. E12-1020).

Response:

Figures 5.4-14b and 5.4.14c provide all the process data for all modes of operation of the RHR system. Figure 5.4-14b was inadvertently left out of the FSAR, but was included in Amendment 3, March, 1979, as part of the response to FSAR Question 212.004.

Q. 211.035
(5.4.7)

Identify the pressure interlock setpoints of the RHR isolation valves F008 and F009 which are set to: (1) prevent inadvertent opening to the low pressure suction piping, and (2) initiate valve closure when the reactor pressure is increasing.

Response:

The pressure interlock setpoint for RHR shutdown suction isolation valves F008 and F009 is nominally 135 psig. The setpoint for opening and closing is the same.

Q. 211.036
(5.4.7)

Confirm that all valves performing an isolation function between the high pressure and low pressure boundary in the RHR system (e.g., check valves and motor-operated valves) meet the leak testing and inspection requirements of Section XI of the ASME code for Category A valves. In this regard, it is our position that a combination of two or more check or motor-operated valves in series should have design provisions which permit individual leak testing of any two valves.

Response:

All valves performing an isolation function between the high pressure and low pressure boundary in the RHR system meet the leak testing and inspection requirements of Section XI of the ASME code for Category A valves. The RHR connects to high pressure systems for RPV head spray, shutdown cooling suction, low pressure coolant injection, and shutdown cooling return. Design provisions for these valves to permit individual leak testing of any two valves performing an isolation function is shown in the following table:

Penetration No.	Function	Isolation Valves	Design Provisions
2	RPV Head Spray	RHR-V-23 RCIC-V-66	Fig. 6.2-31e
20	Shutdown Cooling Suction	RHR-V-8 RHR-V-9	Fig. 6.2-31k
12A, B, C	Low Pressure Coolant Injection	RHR-V-42A, B, C RHR-V-41A, B, C	Fig. 6.2-31l
19A, B	Shutdown Cooling Return	RHR-V-53A, B RHR-V-50A, B RHR-V-123A, B	Fig. 6.2-31m

Q. 211.037
(5.4.7)

In Note 12 of Figure 5.14-13a of the FSAR, you state that: "Between valves M0F008 and M0F009 consideration should be given to thermal expansion of the contained water." Provide a commitment to incorporate a method for pressure relief between these two RHR isolation valves. Alternatively, show by analysis that piping integrity would be maintained in the event that a LOCA or stream line break occurred and the water trapped between these two valves, thermally expanded.

Response:

A check valve will be installed between RHR M0F008 and M0F009 which will discharge to upstream of M0F009 to provide overpressure protection. This valve has also been added to Table 6.2-16, Primary Containment Isolation. It meets the following design requirements:

ASME III Class I
Seismic Category I
Quality Class I
Design Pressure 1250 psig
Design Temperature 575°F
Size 3/4" welded

Q. 211.038
(5.4.7)
(14.2.12)

Provide the test acceptance criteria discussed in Section 14.2.12.1.7 of the FSAR regarding preoperational testing of the RHR system.

Response:

Tentative acceptance criteria for the RHR preoperational test is attached.

Acceptance Criteria for RHR Preoperational Test

1. RHR-V-42A, B, C — LPCI injection valve maximum opening time: 27 seconds

2. RHR-V-8, RHR-V-9 — Shutdown cooling suction valve maximum closing time: 40 seconds

3. RHR-V-53A, B — Shutdown cooling return valve maximum closing time: 40 seconds

4. RHR-FCV-64A, B, C — Minimum flow valve maximum opening/closing time: 15 seconds

5. Motor operated valves open with initial differential pressure of:

RHR-V-42A, B, C	Loop A injection	750 psi
RHR-V-16A, B	Containment spray	SOH (shutoff head)
RHR-V-17A, B	Containment Spray	SOH
RHR-V-27A, B	Suppression pool spray	SOH
RHR-V-24A, B	Suppression pool test return	SOH
RHR-V-21	Suppression pool test return	SOH
RHR-V-53A, B	Shutdown cooling return	SOH
RHR-V-8	Shutdown cooling suction	150 psi
RHR-V-9	Shutdown cooling suction	150 psi
RHR-V-23	Reactor vessel head spray	SOH
RHR-V-4A, B, C	LPCI suppression pool suction	70 psi
RHR-V-64A, B, C	Minimum flow	500 psi
RHR-V-123A, B	Shutdown cooling check bypass	1050 psi

6. RHR pump flow at 26 psi pressure differential between the RPV > suppression pool: 7450 gpm minimum.

7. RHR System flow with three (3) pumps at 26 psi pressure differential between RPV > suppression pool: 22,350 gpm minimum.

8. Low pressure coolant injection initiation to rated flow with normal auxiliary power available: 27 seconds maximum.

9. Low pressure coolant injection to rated flow from time diesel generator initiation from loss of auxiliary power: 37 seconds maximum. (Will be done in loss of power test PREOP-PT-301.0.)

10. NPSHA in mode B, post-accident containment spray, 7900 gpm and 220°F suppression pool suction with 50% strainer flow: 39.5 ft.

11. NPSHA in mode D, shutdown cooling, flow 7450 gpm and 335°F suction temperature: 141.5 ft.

Q. 211.039
(5.4.7)

Operation of the RHR system in the steam condensing mode involves partial draining of one or both RHR heat exchangers and introduction of reactor steam into lines and heat exchangers which are initially cold. Describe the methods (e.g., valve operation or air introduction) and the provisions you propose to prevent the occurrence of water hammer during initiation of operation in this mode and in the change to the pool cooling mode. Indicate whether the jockey pump system shown in Figure 5.4-13a of the FSAR can fill the lines to the injection valve in the core spray lines and the RHR lines (i.e., valves F016 and F042, respectively) when the RHR is in the steam condensing mode using one or both heat exchangers. If not indicate what procedure you propose to prevent water hammer following startup of the core spray or RHR pumps.

Response:

The steam condensing mode of RHR will no longer be utilized for WNP-2 so there is no concern for water hammer during initiation of this mode. Deactivation of the steam condensing mode has no effect on the jockey pump's ability to fill, or keep full, the RHR piping system.

Q. 211.040
(5.4.7)

Those pressure relief valves and lines which are designed to prevent overpressurization of the RHR system, are routed outside the containment before being returned to the suppression pool. Discuss the design provisions incorporated into the WNP-2 facility to minimize the potential for water hammer in these lines. State whether these relief lines are capable of withstanding both seismic and dynamic blowdown loads without suffering a loss of structural integrity.

Response:

The RHR relief valves are installed to accommodate thermal expansion and leakage across closed valves in isolated piping systems (see response to Question 211.027 for additional information on RHR relief valves). Pressure buildups in isolated lines will be slow and discharges from the relief valves in these lines will be small. Water hammer and other hydrodynamic loads are not considered a potential problem in those lines.

RHR-RV-36 has been permanently removed from WNP-2. It has been replaced with a Blind Flanged "Testable Pipe Spool Assembly", RHR-TPSA-1.

(DELETED)

Q. 211.041
(5.4.7)

Discuss the procedures to be used in the WNP-2 facility which will minimize the potential for exceeding the allowable cooldown rate (i.e., a cooldown rate greater than 100 degrees Fahrenheit/hour) of the RHR system and the reactor coolant system when placing the WNP-2 facility in a shutdown cooling mode following normal shutdown or following an emergency shutdown.

Response:

The potential of exceeding the 100°F/hr cooldown limit during the cooldown mode will be minimized by the following elements of the operating procedures:

a. Only one RHR loop is initially put into cooldown mode operation. The second loop will not be put into cooldown operation until the full cooling capacity of the one loop is inadequate to maintain the desired cooldown rate.

b. The RHR loop is started with the heat exchanger bypass full open. This limits the flow through the heat exchanger to about 40 to 45% of the total loop flow.

c. The cooldown injection valve E12-F053 is throttled to establish the desired total loop flow rate.

d. As stable operation is established and the initial cooldown rate defined the flow through the RHR heat exchanger will be adjusted with the bypass valve E12-F048 or the cooldown injection valve E12-F053 to adjust the cooldown rate to the desired level.

The minimum flow through the heat exchanger will be required at the start of the cooldown mode. As the reactor is cooled the flow must be increased in order to maintain a given cooldown rate. Thus, once an acceptable cooldown rate is established it will not be exceeded.

Q. 211.042
(5.4.7).

Discuss the reliability of the RHR pumps for long-term operation. It is our position that long-term reliability of these pumps should be demonstrated either by operational experience or by testing. If you cite previous operational experience as the basis for qualifying these pumps in your response to this question, identify any design differences in the pumps and indicate the operating conditions of the pump service life which is cited.

Response:

The RHR pumps are designed for the life of the plant (40 years) and tested for operability assurance and performance as follows:

a. In-shop tests, including (1) hydrostatic tests pressure retaining parts of 150% times the design pressure, (2) performance tests while the pump is operated with flow to determine the total developed head at zero flow and design flow, and (3) net positive suction head (NPSH) requirements.

b. After the pump is installed in the plant, it undergoes (1) the system hydro test, (2) functional tests, (3) the required periodic inservice inspection and operation of once a month, and (4) about one month of operation each year for a refueling shutdown.

c. In addition, the pumps are designed for a postulated single operation of 3 to 6 months for one accident during the unit's 40 year life.

A listing of GE operating experience of Ingersoll-Rand RHR pumps is provided in the response to Question 211.072.

Q. 211.043
(5.4.6)

Provide an RCIC pump performance curve that shows flow rate versus reactor vessel pressure. Identify the most limiting operating condition for the RCIC pump and identify the NPSH margin under this condition.

Response:

RCIC system is designed to provide vessel makeup flow of 600 gpm for varying reactor vessel pressures from 150 psig to 1158 psig. Consequently, there is no RCIC pump performance curve that depicts flow rate versus reactor vessel pressure. Two performance curves are provided; one for constant flow and the other for constant speed. These figures have been added to 5.4 as Figures 5.4-19a and 5.4-19b, respectively.

The available NPSH is calculated for worst-case conditions (i.e., 600 gpm rated fluid flow, maximum fluid temperature), which is RCIC suction from the suppression pool. Using the conservative water temperature of 170°F, the minimum NPSHA is 56 ft. For the case where RCIC is pulling suction from the condensate storage tank and for the water temperature of 100°F, there is 48 ft. of NPSHA at 600 gpm. At the high speed set point for the RCIC turbine (4500 rpm), the required NPSH at 600 gpm is 19 ft. Therefore, there is adequate NPSH margin whether the RCIC system is pulling suction from the suppression pool or the condensate storage tank.

Q. 211.044
(5.4.6)

When the steam isolation valves are temporarily closed for maintenance, it appears that it is possible for some steam condensate to remain in the lines leading to the RCIC steam turbine. Discuss whether the amount of water condensed from steam can cause sufficient damage to the RCIC turbine to render the RCIC system incapable of delivering water to the reactor vessel as required. Describe the design modifications, if any, you propose to prevent water hammer occurring at the RCIC turbine exhaust.

Response:

Refer to Figure 5.4-9a, RCIC P&ID, for valve numbers. If the steam isolation valves were temporarily closed for maintenance, administrative control and specific operating procedures relieve the possibility of thermal shock or water hammer to the steamline, valve seals and discs. Keylock switches are provided for positive administrative control. Operating procedures require throttling open the outboard isolation valve, F008 to remove any condensate trapped between the isolation valves warming up the steamline by throttling open the warmup valve F076 located on a pipeline bypassing the inboard isolation valve, and then opening the inboard isolation valve F063. All the condensate is removed from the steam supply line by a drain pot located at the lowest point.

A vacuum breaker system is installed close to the RCIC turbine exhaust line suppression pool penetration to avoid siphoning water from the suppression pool into the exhaust line, as steam in the line condenses during and after turbine operation. The vacuum breaker line runs from the suppression pool air volume to the RCIC exhaust line through two normally open motor-operated gate valves F080 and F086 and two swing check valves arranged to allow air flow into the exhaust line and to preclude steam flow to the suppression pool air volume. Condensate buildup in the turbine exhaust line is removed by a drain pot in the low point of the line near the turbine exhaust connection. The condensate collected in the drain pot drains to the barometric condenser.

Q. 211.045
(5.4.6)

An isolation signal will close a number of valves (i.e., F063 and F008) in the RCIC system, located inside and outside containment, branched off the main steamline. However, the process and instrumentation drawing (P&ID) for the RCIC (i.e., Figure 5.4-9a) shows that these valves are keylocked open. Explain this apparent discrepancy. Additionally, evaluate the consequences of a postulated pipe break downstream of the first or second isolation valve for steam flow rates which are greater than 300% of the steady-state steam flow. Provide justification for the selection of this 300% limit.

Response:

The keylocked switches for F063 and F008 do not prevent automatic isolation of these valves. The keylocked switches are provided to prevent inadvertent manual isolation of the RCIC steam supply during normal operation. These valves are normally left in the open position. An isolation signal is given for a large pipe break by detecting flow rates greater than 300% of the steady-state steam flow. For leakage with flow rates less than 300% of steady-state steam flow, an isolation signal is signaled by use of area temperature sensors provided by the leak detection system.

If the steam isolation valves were temporarily closed for maintenance, operating procedures give specific directions on opening the steam isolation valves and the warmup line. This administrative control relieves the possibility of thermal shock or water hammer to the steamline, valve seats and discs. Keylock switches on the steam isolation valves provide positive administrative control of the operating procedures.

RCIC isolation for steam flow rates which are greater than 300% of the steady-state steam flow is a sufficiently high setpoint to avoid inadvertent isolation due to startup transients and is high enough to detect large pipe breaks. Small pipe breaks are detected by the leak detection system.

Q. 211.046
(5.4.6)

The acceptance criteria contained in Section 5.4.6 of the SRP states "As a system which must respond to certain abnormal events, the RCIC system must be designed to sesimic Category I standard, as defined in Regulatory Guide 1.29". However, the condensate storage tank, which is the normal supply of water for the RCIC, is not designed to seismic Category I criteria. While the suppression pool provides an alternate source of water from a seismic Category I structure, the switchover to this alternate source in the WNP-2 facility requires operator action. Any one of the following alternatives would be an acceptable approach for meeting the acceptance criterion cited above: (1) a seismic Category I supply; (2) an automatic safety-grade switchover to a seismic Category I supply; or (3) a manual safety-grade switchover to a seismic Category I supply, if appropriately justified. It appears that you are proposing to use the third option. If so, provide justification for the time required for the operator to perform a manual switchover. If the third alternative is not proposed, identify and discuss which approach will be used in the WNP-2 facility.

Response:

As stated in our response to Question 031.015, WNP-2 is providing an automatic safety-grade switchover to a seismic Category I supply (the suppression pool), which satisfies your alternative (2).

Q. 211.047
(15.2.9)

Provide the suppression pool temperature and the reactor vessel temperature and pressure as a function of time for the alternate shutdown cooling modes (i.e., activity C1 and C2) described in Figure 15.2-11 of the FSAR, assuming a failure of the normal RHR shutdown cooling mode. Provide an estimate of the time required to achieve a cold shutdown condition for these alternate cooling paths. Identify the initial pool and service water temperatures assumed in this analysis.

Response:

The suppression pool temperature and the reactor vessel temperature and pressure response for the alternative shutdown cooling modes is shown on Figures 15.2-16, 15.2-17, 15.2-18 and 15.2-19. Cold shutdown is achieved in approximately 36 hours for activity C1.b.2 or in approximately 15 hours to activity C1.b.1 or C2. The initial pool and service water temperatures assumed in this analysis are 95°F and 87°F, respectively, as shown in FSAR Table 15.3-13.

Q. 211.048
(5.2.2)
(5.4.7)
(6.3)

In the FSAR, you state that the volume of air stored in the pneumatic accumulator for each safety/relief valve is sufficient for one actuation of the power-operated relief valves. You also state that the accumulator volume is sufficient for two actuations of the automatic depressurization system (ADS) valves. However, a "noninterruptible" safety-grade source of air to actuate the ADS valves is required to terminate certain postulated transients and accidents without loss of the ADS function. Demonstrate that an adequate supply of air will exist to operate the ADS valves for the following postulated accident conditions:

a. The alternate method of achieving and maintaining a cold shutdown following a loss of offsite power, concurrent with the worst single failure in the RHR system.

b. A small break LOCA concurrent with the failure of the high pressure core spray which would then require the ADS valves to be actuated to: (1) depressurize the reactor vessel; and (2) maintain long-term cooling. In your response, also discuss your proposed procedures to replenish the coolant inventory for this particular postulated accident.

c. A small steam line break disabling the RCIC concurrent with a single failure of the HPCS that would require actuation of the ADS to depressurize the reactor vessel. In your response, discuss the supply of air required to actuate the ADS valves to provide long-term cooling of the reactor core. Additionally, for this specific postulated accident condition, indicate whether the reactor vessel inventory would be maintained above the shutoff head of the low pressure cooling system when the decay heat of the reactor core repressurizes the vessel.

Response:

The ADS valves are capable of remaining open continuously during all postulated post-accident periods. For a description of the "noninterruptible" safety-grade source of air to the ADS valves, please refer to 9.3.1 and Figure 9.3-2. In an effort to clarify the FSAR test, 5.2.2.4 and 9.3.1 have been modified.

With regard to your request for additional information in Item b of this question, please refer to FSAR 6.3.2.2.3 and 6.3.2.2.4. Additionally, in response to Item c, the vessel will not repressurize as you stated, since once the ADS valves open, they remain open.

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Q. 211.049

The analyses you present in the FSAR to show compliance with the requirements for protection against overpressurization which are contained in the ASME Boiler and Pressure Vessel Code, refers to the General Electric topical report, NEDO-10802, for the analytical model used to evaluate transients in the WNP-2 facility. However, GE has submitted an updated analytical model, ODYN, to evaluate plant transients. Accordingly, reanalyze the pressure transients in the WNP-2 facility using the ODYN code. Alternatively, provide assurance that the method of analysis described in NEDO-10802 is bounding in regard to predictions of the peak pressure. The analysis must include the effects of the recirculation pump trip (RPT) due to high pressure and the RPT trip resulting from the turbine sop valve/control valve closure, where applicable. If you reanalyze the pressure transients using the ODYN code, provide an analysis which establishes whether the closure of all main steam isolation valves (MSIV's) is the most severe overpressure transient, including consideration of a second safety-grade scram (e.g., a scram resulting from a high neutron flux) and the effects of the RPT.

Response:

See revised 5.2.2 for the overpressure protection analysis which demonstrates compliance with the ASME B&PV Code considering the effects of end-of-cycle and ATWS RPT. For the limiting rapid pressurization transients, the ODYN code was used to reperform the calculations using the resolution basis of the NRC letter on the subject code dated November 4, 1980 (ODYN SER). Appropriate analyses were done with ODYN to bound Chapter 15 limiting pressurization transients.

WNP-2 primary system pressure response to ATWS events is also presented in 15.8.6.4 and 15.8.7.4 for a turbine trip at low and high power and MSIV closure with ARI and with SLCS.

Q. 211.050

You have not provided sensitivity studies in the FSAR which show the effect of the initial operating pressure on the peak transient pressure attained during a limiting over-pressure event. Accordingly, submit the following additional information.

a. Provide a sensitivity study which shows that increasing the initial operating pressure up to the maximum pressure permitted by the high pressure trip setpoint will have a negligible effect on the peak transient pressure.

b. Alternatively, propose an operating limitation on the reactor pressure which will be incorporated into the WNP-2 Technical Specifications thereby providing assurance that the actual reactor operating pressure will not exceed the initial pressure assumed in your analysis of pressure transients.

Response:

The overpressure analysis shown in Chapter 5 of the FSAR assumed the plant is initially operating at 105% steam flow condition with a maximum vessel dome pressure of 1020 psig. The maximum operating dome pressure at 100% power is expected to be 1005 psig, therefore, the assumed initial operating pressure of 1020 psig is expected to be conservative relative to expected actual operation. In addition, the nominal high pressure scram setpoint is expected to be set at 1043 psig. A study has been performed for a BWR-3 to investigate the effects of increasing the initial reactor pressure relative to the initial value used in the overpressure protection analysis on the peak system pressure. The conclusion was that increasing the initial operating pressure results in an increase of the peak system pressure, which is less than half the initial pressure increase as shown in Figure 211.050-1 for the overpressure design transient (i.e., all MSIV closure with indirect high neutron flux scram). The same general trend is expected to exist for WNP-2. For the WNP-2 project, the allowable value for the proposed technical specification limit on the high reactor pressure scram is 1063 psig. Therefore, the maximum increase in the initial pressure would be limited to only 43 psi and the maximum peak system pressure increase during the overpressure design transient would be limited to less than 20 psi. Thus the overpressure criteria would still be satisfied.

Q. 211.051
(5.2.2)

The performance of essentially all types of safety/relief valves has been below the expectations for this type of safety-related component. Based on the number of reportable events involving malfunctions of these valves in operating boiling water reactors (BWRs), we believe that significantly improved performance of the safety/relief valves (SRVs) should be required of the SRVs installed in new plants such as the WNP-2 facility. Accordingly, provide a detailed description of the provisions you will incorporate in the SRVs of the WNP-2 facility which represent an improvement over the SRVs of presently operating BWR plants in the six areas listed below. In responding to this item, explain why or how your additional provisions will provide the improvements which we seek in the performance of the SRVs. Finally, identify the SRV manufacturer.

a. Valve and Valve Operator Type and/or Design. Provide a discussion of your proposed improvements in the air actuator, especially in the materials used for such components as the diaphragms and the seals. Discuss the safety margins and confidence levels associated with the air accumulator design. Discuss the capability of the reactor operator to detect low pressure in both air accumulators.

b. Specifications. Indicate what new provisions you have employed to ensure that the specifications for the valves and valve actuators include design requirements which reflect the operation of the SRVs over the anticipated range of environmental conditions (i.e., the temperature, humidity, and vibration), to which the valves and valve actuators will be subjected during plant transients and postulated accidents.

c. Testing. It is our position that prior to installation, the SRVs should be proof-tested under the appropriate environmental conditions, for time periods representative of the most severe operating conditions, to which they may be subjected.

d. Quality Assurance. Indicate what new programs you have instituted to assure that valves are manufactured to your design specifications and will operate as required by your specifications.

For example, indicate the test you will perform to assure that the blowdown capacity of the SRVs is correct.

e. Valve Operability. Provide a description of your surveillance program to monitor the performance of the SRVs during the plant lifetime. Identify the information that will be obtained in this surveillance program and indicate how these data will be utilized to improve the operability of the valves. For example indicate how this program will reduce the malfunctions that have occurred in operating BWR facilities.

f. Valve Inspection and Overhaul. You state in the FSAR that half of the SRVs will be bench-checked and visually inspected every refueling outage. However, depending on operating cycle length, this may result in several years between inspections. Our concern in this matter arises from operating experience which has shown that failure of the SRVs may be caused by exceeding the manufacturer's recommended service life for the internal components of the SRVs or their air actuators. Accordingly, indicate the frequency at which you intend to visually inspect and overhaul those SRVs which function as part of the automatic depressurization system (ADS). Indicate what provisions will be incorporated into the WNP-2 facility to ensure that inspection and overhaul of all the SRVs is in accordance with the manufacturer's recommendations for the SRVs installed in the WNP-2 facility and that the design service life for any component of the SRV, is not exceeded.

Response:

a. Valve and Valve Operator Type and/or Design

Past BWRs utilized reversed-seated, pilot-operated, safety/relief-type valves as shown in Figures 211.051-1 and 211.051-2. WNP-2, which is a GE BWR/5, utilizes a conventional-type simple, direct-acting, spring-loaded, safety/relief valve with an auxiliary pneumatic actuator assembly with solenoid valves to provide for an independent mode of operation for relief service based upon user/operator command. (See Figures 211.051-3 and 211.051-4). As such, the safety/

relief function is directly and automatically controlled by the static steam pressure acting at the main seat of the valve inlet nozzle and disc.

The independent mode of operation is via the servo-air-pneumatic cylinder-valve arrangement and mechanism when actuated by the user/operator. Use of the conventional simple, direct-acting, spring-loaded, safety/relief valve provides the optimum accepted type of overpressure protection device presently available with numerous years of relief experience in similar industrial, marine, and naval steam service applications. See Table 211.051-1 for SRV improvements as compared to present operating plants.

Material selections for this type of safety/relief valve (Crosby dual function) are in accordance with ASME Section III and are suitable for the intended environment and functional application. Successful qualification test results confirmed the adequacy of material selections. Each safety/relief valve and actuator assembly is subjected to relief operations to verify proper operability and leaktightness prior to delivery.

Note that should the air supply fail, the pneumatic actuator assembly may not be able to open the valve in the relief mode of operation. The independent safety mode for overpressure protection is not affected by a loss in air supply.

With regard to the air accumulators, each safety/relief valve has a relief accumulator sized to allow one actuation against normal drywell pressure with reactor pressure at 1000 psig, should the air supply to the valve fail. The ADS valves each have a separate accumulator sized to allow one actuation against maximum drywell pressure with the reactor at 0 psig, should the ADS air supply fail. Failure of the air supply is extremely unlikely since the ADS air supply is Seismic Category I back through the nitrogen bottles. See the response to Question 211.048.

Each air or nitrogen supply system (2 ADS + 1 normal) has pressure indication and alarm to indicate low pressure conditions in the system.

Excessive compressor cycling would indicate leakage if pressure does not drop low enough to actuate the alarm. Specific indication of individual accumulator pressure is not required since the only occurrence not indicated by the above would be isolation of an accumulator system with the manual isolation valve. This is extremely unlikely since each accumulator/check valve is inspected and tested per IWV (Section XI). A pressure decay test is performed as a final part of the maintenance procedure to prove system operability. (See part c of this response.) This test requires the manual isolation valve be open. In addition, of course, the safety/relief valve for protection against overpressure is automatically controlled and actuated by static inlet steam pressure and is not dependent on an air supply.

A summary of operating experience of the Crosby direct acting valve to date is contained in the response to Question 212.131 on the LaSalle docket. The design of the SRVs to be installed in WNP-2 are a modified version of those installed in Chinshan 1 and 2. Based on operating experience (principally Browns Ferry), recent modifications to the Crosby valves were incorporated to reduce the potential for steam leakage, thereby minimizing maintenance and improving plant availability. The changes include the following:

1. Modifications to the lifting mechanism, adjusting bolt and thrust bearing adapter to improve the opening and closing kinematics, reduce friction and improve alignment of the valve during operation;

2. Replacement of the nozzle and disc from Crosby's standard design configuration to a semi-flexible disc of Inconel and a 316 stainless steel flexi-disc nozzle for improved seat tightness;

3. Raising of the setpoint or the lowest set SRV to be 150 psi above the nominal reactor operating pressure to reduce relief valve simmering.

Prequalification production tests were made on each modified SRV at the vendor's plant. Data on those tests is filed at GE (San Jose) in "Design Reference File 207C-B21/22 F013-D (6xRx10) - Crosby SRV Modification Effort". These design improvements significantly reduced the inherent SRV potential leakage to below specification leakage (20 lb/hr); these design improvements did not adversely affect other required functions.

b. Specifications

The GE Safety/Relief Valve Equipment Specification(s) identifies and includes all the design requirements necessary for operation of the valve and valve actuator assembly in its expected normal and postulated abnormal environments. Verification of the design for safety/relief valve acceptability is and has been demonstrated by life cycle testing, environmental testing in accordance with IEEE 323-1971, and seismic testing in accordance with IEEE 344-1975.

c. Testing

Three test units of the modified design of the safety/relief valve were subjectd to the following qualification test programs in order to demonstrate compliance with the performance requirements under the specified conditions delineated in design specifications.

1. Life Cycle Tests - These tests consisted of subjecting each of the prequalification production units to approximately 300 safety and relief actuations in order to verify acceptability of the design to meet the requirements for (a) set pressure, (b) opening and closing response time, (c) blowdown, (d) seat tightness, (e) achievement of flow rated capacity lift (ASME) during each actuation, (f) proper reclosure after each actuation without sticking open or a tendency thereto, chatter or disc oscillation, and (g) opening of the SRV without any inlet pressure applied which simulates an emergency operability condition. Conditions such as environmental temperature, pressure ramp rates, induced dynamic and static back pressures, pneumatic

operating pressure, and solenoid voltage were varied to assure valve operability under normal and transient operating conditions to which the safety/relief valve may be subjected. Upon completion of the tests, test units were disassembled and inspected. This test program established the qualified service life of the safety/relief valve.

2. Environmental and Seismic Tests - In order to demonstrate acceptability of the design for either an upset, emergency or faulted condition, a test unit was subjected to the type tests described in the following paragraphs.

The test unit subjected to the seismic test was one which had been subjected to the life cycle tests except that the electro-pneumatic actuator assembly used on the safety/relief valve had been subjected to the following environmental tests as required by IEEE 323-1974 for Class 1E equipment.

Prior to seismic testing of the safety/relief valve, the electro-pneumatic actuator assembly was separately subjected to a qualification aging test which consisted of: (a) a reference frame test prior to testing to determine leakage, response timing, and solenoid electrical characteristics for subsequent comparison purposes, (b) radiation aging to a cumulative radiation dosage of 3×10^7 RADS, (c) a post-radiation reference frame test, (d) thermal aging to a temperature of 343 + 9°/-0°F for a duration of 96 continuous hours (four days) in an air atmosphere with uncontrolled humidity and with 90 psig operating air pressure applied to the inlet side of the solenoid pilot seat, (e) post-thermal reference frame tests, (f) mechanical aging in a normal environment by mechanically cycling the actuator assembly 500 times with each solenoid air valve assembly against an equivalent load of 250 psig and with the maximum permitted pneumatic air supply source pressure of 200 psig, and, (g) a post-mechanical aging reference frame test. The environmentally and mechanically aged electro-pneumatic actuator assembly was then attached to a safety valve which had completed the life cycle tests. This complete test unit was then subjected to the seismic tests as described below.

o Seismic

The test unit was subjected to seismic tests to simulate the normal, upset, emergency, and faulted conditions. The seismic test program consisted of: (a) resonant frequency determination, (b) nozzle loading, (c) operating basis earthquake, (d) safe shutdown earthquake, and (e) reference frame tests. The resonant frequency determination test was performed using a dynamic evaluation test technique in which the test unit was fixed to a reaction mass with a force input provided by a lightweight armature shaker. The input force and acceleration were monitored to determine the resonant frequencies of the test unit. Resonance was defined as those frequencies where the input force and acceleration have a 90 degree phase relationship.

Testing was also performed to determine the effect of nozzle loads on the test unit. The loads induced into the inlet and outlet flanges represent combined static and dynamic loads anticipated at the piping interfaces when installed in the plant for either normal or abnormal conditions.

The range of nozzle loads was from zero to a maximum of 800,000 and 600,000 inch-pounds on the inlet and outlet flanges, respectively. The moments were applied simultaneously by a loading arm and a hydraulic cylinder attached to the outlet flange. Inlet and outlet flange studs were instrumented with strain gages to monitor the effects of the applied moments on the studs. The moments were applied in incremental steps and the test unit was relief operated at each step and operability characteristics recorded.

The test unit was then subjected to a series of operating basis earthquake (OBE) and safe shutdown earthquake (SSE) simulations in each of two test orientations to demonstrate operability assurance during upset conditions. The OBE test consisted of 30-second duration simultaneous biaxial horizontal and vertical phase incoherent inputs of random motion. The horizontal and vertical inputs consisted of frequency bandwidths spaced one-third octave apart over the required frequency range. The amplitude of each one-third octave bandwidth was independently adjusted in each axis until the test reponse spectra enveloped the required response spectra. The resulting table motion was analyzed by a spectrum analyzer using one-sixth octave bandwidths at 5% damping. The test conditions and operability during each of the OBE tests were varied as shown in Table 211.051-2.

The test unit was then subjected to a safe shutdown earthquake (SSE) simulation. The test and operability conditions during the SSE test are also shown in Table 211.051-2.

Post-OBE and post-SSE reference frame tests were performed to determine the operability effects due to repeated combinations of seismic simulations, nozzle loadings, temperature, and pressure. These reference frame tests consisted of set pressure determination during safety actuation, response time determination during relief actuation, valve leakage, and an emergency operability test. These reference frame tests were performed with induced nozzle loads applied.

In order to evaluate the design capability of the test unit, the OBE and SSE tests were repeated using a higher input level. The test conditions during these tests are shown in Table 211.051-2.

A reference frame test was performed at the conclusion of the high level OBE and high level SSE tests to determine the effects of the simulation.

o Post-Seismic Environmental Tests

Subsequent to the seismic tests, the electro-pneumatic actuator assembly was removed from the test unit and subjected to post-seismic reference frame tests, a negative pressure test, post-negative pressure reference frame tess, a postulated loss-of-coolant accident (LOCA) environment test, and a post-LOCA reference frame test and inspection.

Conclusions

The qualification test results (1) verified, by demonstration, that the SRV design will be operable and is structurally sound under the various normal and abnormal environmental and dynamic conditions to which the valve may be subjected either separately or in combination when placed in service, (2) established the basis for confirming the installed and qualified life of the valve, and (3) provided information necessary to enhance the established Quality Assurance program to ensure that new valves are equivalent to the qualified design, are properly installed, operate, maintained, and inspected.

We have not experienced any SRV common mode failures on the Target Rock and modified Crosby type SRVs installed in operating BWRs. Based on operating history and qualification testing of the modified Crosby SRVs we do not expect any common mode failures of these SRVs.

d. Quality Assurance

The GE safety/relief valve specification incorporates all of the required performance, structural, interface and test requirements.

To assure that safety/relief valves are manufactured and will perform to the requirements specified by the GE safety/relief valve specification, the following types of actions are taken with the valve supplier:

1. Valve supplier is evaluated for capability in complying with specification requirements;

2. A qualified design is established that demonstrates compliance with specification requirements;

3. The details and manufacturing process of the qualified design is frozen;

4. Each safety/relief valve assembly is manufactured to the approved design freeze list and manufacturing procedures;

5. Each safety/relief valve and actuator assembly is production tested to GE approved procedures to assure a high degree of confidence that the delivered equipment will perform as required;

6. Quality Assurance inspection points are instituted throughout the process along with both general and random GE surveillance and periodic audits.

For example, to verify that the SRV flow capacity is correct, the following is verified or performed:

1. Design is ASME certified for flow capacity;

2. Nozzle bore diameter is dimensionally inspected;

3. Each valve is checked to assure that it opens to flow capacity lift position by use of an LVDT and O-Graph readout.

e. <u>Valve Operability</u>

1. Each SRV is equipped with a position indicating device showing actual valve position instead of the ordered position. The indicators permit prompt operator response to a malfunction or emergency situation and contribute to identification of corrective maintenance requirements. (Note: This indication system is currently under design and is not yet reflected in the FSAR.)

2. Routine surveillance of SRV discharge-port thermocouple recorder readings are conducted to identify valves which have

operated or show a tendency to leak. This data will be used in identifying preventative or corrective maintenance requirements.

3. SRV accumulator check valves are functionally tested for seating capability by performing an accumulator pressure decay test on a frequency as specified by IWV, ASME Section XI. In conjunction with the pressure decay test, accumulators are blown from low-point drains and evidence of excessive moisture or particulate matter is used in adjusting refurbishing schedules of SRV piston-cylinder actuator assemblies and pilot solenoids.

4. Solenoid circuit integrity for valves performing an ADS function is monitored during normal control room operations. Energized indicating lights at control room panels H13-P628 and H13-P631 verify solenoid circuit continuity.

5. For valves performing an ADS function, channel functional testing will be performed monthly in accordance with the WNP-2 Technical Specifications. Testing will verify operability of sensors and associated circuitry.

6. SRV history logs are maintained which contain the following type of information in a readily retrievable form:

   a. Valve identificaiton by SRV supplier, type, style or model number and serial number;

   b. Date placed into service;

   c. Date removed from service along with the estimated number of cyclic operations and hours that the SRV has been in actual service;

   d. Identification of all tests, results noted, disassemblies performed (including extent and purpose), maintanance, refurbishments, modifications and replacement parts made to SRV along with reference to the applicable procedure or instructions used. The historical information provides insight into the potential problem area(s) that can be corrected.

f. Valve Inspection and Overhaul

1. SRV/ADS pilot solenoids and air-cylinder actuators will be inspected and refurbished on a three-year cycle in accordance with the manufacturer's recommendation; unless surveillance activities indicate a more frequent refurbishment as evidenced by excessive moisture or particulate matter in the air supply.

2. Adherence to the manufacturer's recommended schedule of inspection and overhaul is aided with the use of the SRV history log. Routine surveillance of the SRV history log and instruction manual insures that the design service lift for any components of the SRVs or their air actuators is not exceeded. SRVs will be refurbished in accordance with the manufacturer's recommendation on a frequency defined by IWV, ASME Section XI.

Please note that in addition to the above response, the BWR Owner's Group for Three Mile Island Concerns is working with GE to develop a more comprehensive response to these concerns. We are actively participating in this program and will implement applicable recommendations developed as a result of the meetings and discussions between the Owner's Group and the NRC.

TABLE 211.051-1

COMPARISON OF SRV IMPROVEMENTS

DESCRIPTION	OTHER PLANT(S)	WNP-2	REMARKS
Valve Manufacturer	Target Rock Corporation	Crosby Valve & Gage Co.	
Valve Type	Reverse Seated, Pilot Operated, Dual Function	Direct Acting, Spring Loaded, Dual Function	See Figures 211.051-1 through 211.051-4 for Cross-Section View(s)
Valve Model/Style	67F	HB-65-BP	
Valve Size	6-inch inlet 10-inch outlet	6-inch inlet 10-inch outlet	
Performance Anomalies	Excessive pilot leakage resulting in plant blow-down.	No pilot used.	Steam leakage past the Crosby-type SRV nozzle and disc interface does not result in inadvertent SRV opening to cause a plant blowdown. SRV opening will result due to a system pressure exceeding SRV spring set or if the actuator cylinder is actuated.
	Air operator diaphragm failure due to use of an inadequate diaphragm design and incorrect lubrication	No diaphragms used.	The Crosby-type of SRV utilizes a standard-type (direct acting) pneumatic cylinder which contains proven static and dynamic seals which have been properly lubricated. The design and materials used has been successfully subjected to life cycle and environmental tests.

TABLE 211.051-2

TEST CONDITIONS

TEST	ORIENTATION	NOZZLE LOADS (in/lbs) INLET	OUTLET	TEST UNIT TEMPERATURE	INLET PRESSURE (psig)	OPERABILITY CONDITION
REFERENCE FRAME TESTS						
OBE 1	Longitudinal/Vertical	0	0	Ambient	0	Closed
OBE 2	Longitudinal/Vertical	400,000	300,000	Ambient	0	Closed
OBE 3	Longitudinal/Vertical	400,000	300,000	Operating	1,000	Closed
OBE 4	Longitudinal/Vertical	400,000	300,000	Operating	1,000	Relief
OBE 5	Longitudinal/Vertical	400,000	300,000	Operating	1,000*	Safety
REFERENCE FRAME TESTS						
SSE	Longitudinal/Vertical	400,000	300,000	Operating	1,000	Relief
REFERENCE FRAME TESTS						
OBE 1	Lateral/Vertical	0	0	Ambient	0	Closed
OBE 2	Lateral/Vertical	400,000	300,000	Ambient	0	Closed
OBE 3	Lateral/Vertical	400,000	300,000	Operating	1,000	Closed
OBE 4	Lateral/Vertical	400,000	300,000	Operating	1,000	Relief
OBE 5	Lateral/Vertical	400,000	300,000	Operating	1,000*	Safety
REFERENCE FRAME TESTS						
SSE	Lateral/Vertical	400,000	300,000	Operating	1,000	Relief

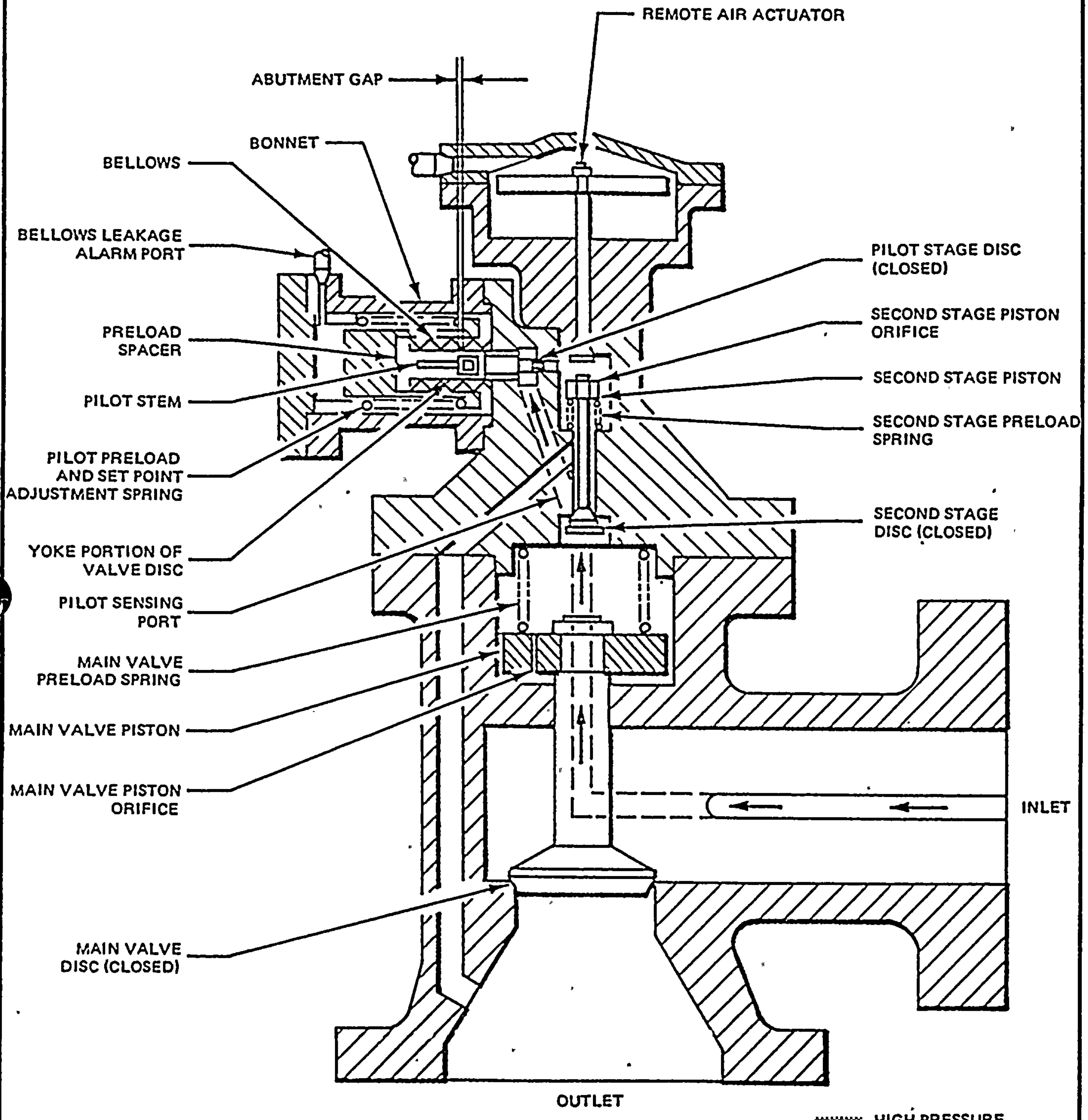
*High Level Inputs

TABLE 211.051-2 (Continued)

TEST	ORIENTATION	NOZZLE LOADS (in/lbs) INLET	OUTLET	TEST UNIT TEMPERATURE	INLET PRESSURE (psig)	OPERABILITY CONDITION
REFERENCE FRAME TESTS						
OBE 1*	Lateral/Vertical	400,000	300,000	Ambient	0	Closed
OBE 2*	Lateral/Vertical	800,000	600,000	Ambient	0	Closed
OBE 3*	Lateral/Vertical	800,000	600,000	Operating	1,000	Closed
OBE 4*	Lateral/Vertical	800,000	600,000	Operating	1,000	Relief
OBE 5*	Lateral/Vertical	800,000	600,000	Operating	1,000*	Safety
REFERENCE FRAME TESTS						
SSE*	Lateral/Vertical	800,000	600,000	Operating	1,000	Relief
REFERENCE FRAME TESTS						
OBE 1*	Longitudinal/Vertical	400,000	300,000	Ambient	0	Closed
OBE 2*	Longitudinal/Vertical	800,000	600,000	Ambient	0	Closed
OBE 3*	Longitudinal/Vertical	800,000	600,000	Operating	1,000	Closed
OBE 4*	Longitudinal/Vertical	800,000	600,000	Operating	1,000	Relief
OBE 5*	Longitudinal/Vertical	800,000	600,000	Operating	1,000*	Safety
REFERENCE FRAME TESTS						
SSE*	Longitudinal/Vertical	800,000	600,000	Operating	1,000	Relief

*High Level Inputs

AMENDMENT NO. 11
September 1980



WASHINGTON PUBLIC POWER SUPPLY SYSTEM NUCLEAR PROJECT NO. 2	TARGET ROCK VALVE SCHEMATIC (CLOSED)	FIGURE 211.051-1

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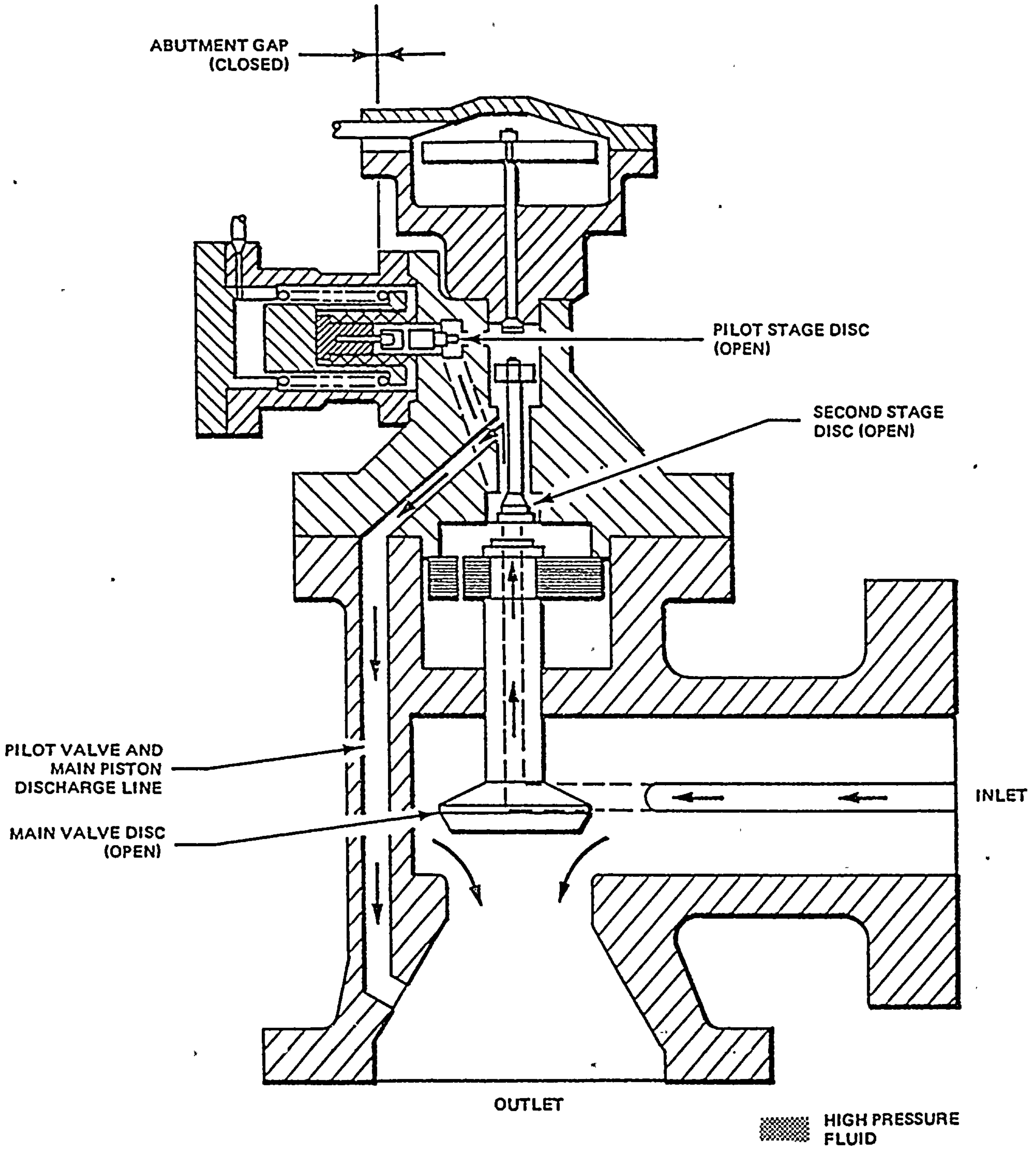
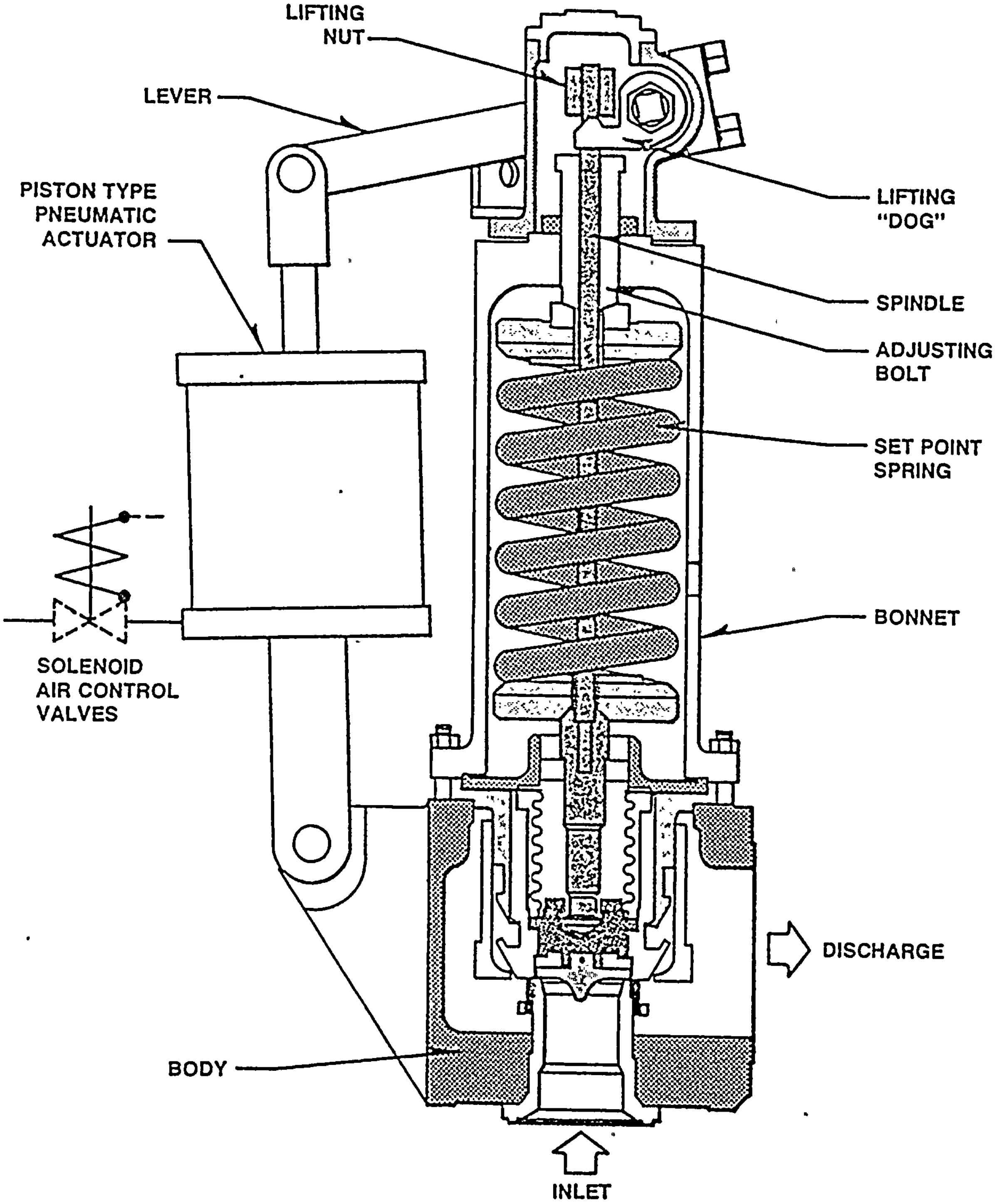
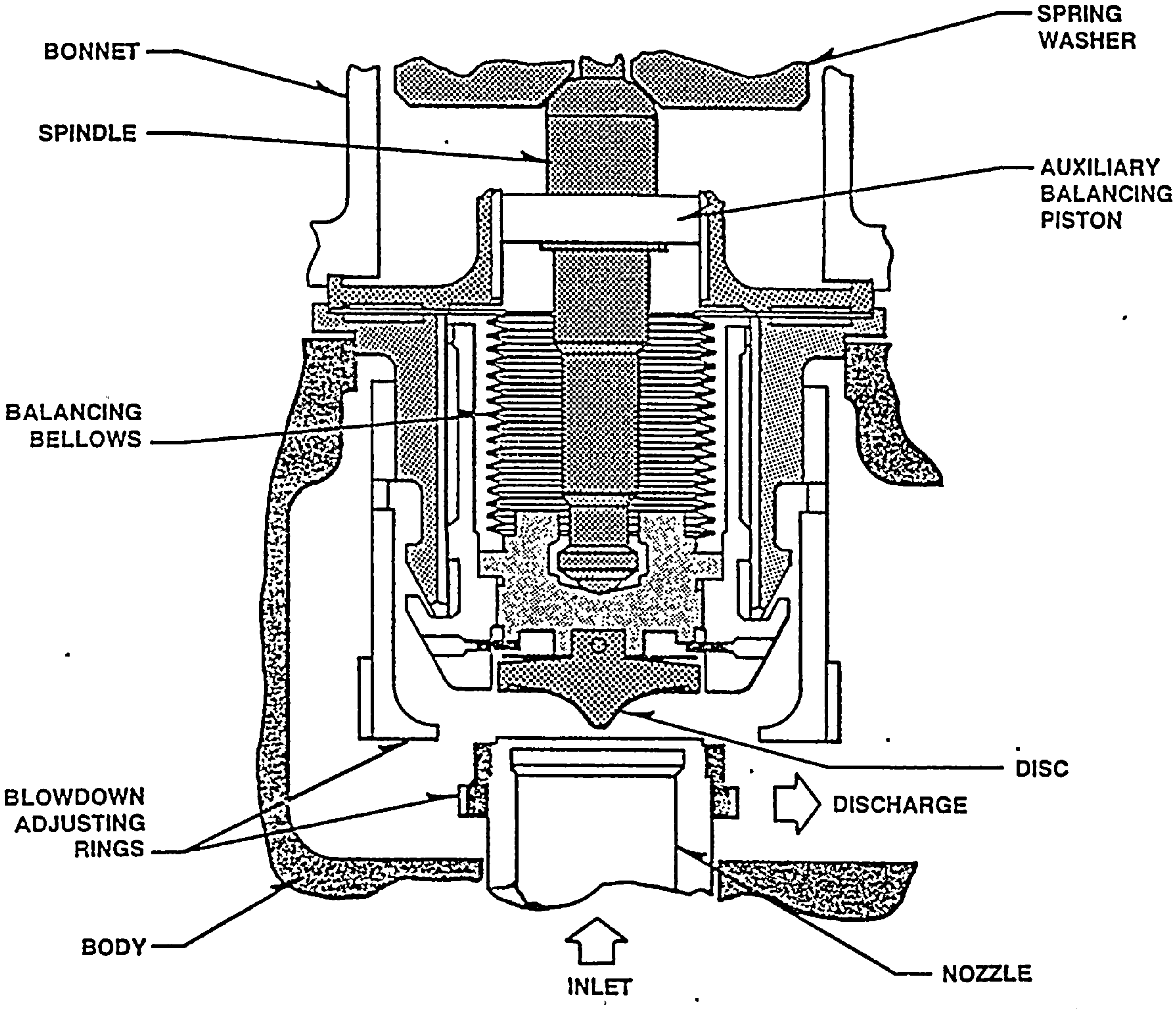


WASHINGTON PUBLIC POWER SUPPLY SYSTEM NUCLEAR PROJECT NO. 2	TARGET ROCK VALVE SCHEMATIC (OPEN)	FIGURE 211.051-2



WASHINGTON PUBLIC POWER SUPPLY SYSTEM NUCLEAR PROJECT NO. 2	CROSBY VALVE	FIGURE 211. 051-3



WASHINGTON PUBLIC POWER SUPPLY SYSTEM NUCLEAR PROJECT NO. 2	INTERNAL DETAILS OF CROSBY VALVE	FIGURE 211.051-4

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Q. 211.052
(5.2.2)

Provide the initial values of all system and core parameters assumed in your analysis of pressure transients, including: (1) their nominal operating range; (2) their uncertainties; and (3) the operating limits on these parameters that will be established in the WNP-2 Technical Specifications.

Response:

The initial values of system and core parameters assumed in the overpressure analyses are listed in 5.2.2.2.2.1 of the FSAR. They are:

	Analysis Value	Nominal Value
a. Operating Power		
- MWt	3463.0	3323.0
- % NBR	104.2	100.0
b. Steam Flow		
- 10^6 lb/hr	14.98	14.29
- % NBR	105.0	100.0
c. Dome Pressure		
- psig	1020.0	1005.0

The operating power and steam low are limited by the operating license to their nominal values. The effect of different operating dome pressure on overpressure protection is shown in the response to Question 211.050, which concludes that even with a dome pressure of 1063 psig, which is the allowable value for the proposed Technical Specification limit on high reactor pressure scram setpoint, the overpressure criteria would still be satisfied. Therefore, no Technical Specification limit on operating steam dome pressure is necessary. The reload confirmatory analysis performed every fuel cycle, uses the values shown in FSAR Section 5.2.2.2.2.1. Due to methodology differences, the values of Section 5.2.2.2.2.1 may vary slightly from the above values. In the event that significant differences exist, the above response will be re-examined.

Q. 211.053
(5.2.2)

In Section 5.2.2.2.4 of the FSAR, you discuss SRV characteristics which include valve groups and pressure setpoints. However, it is not apparent to us how these two items are factored into your analysis. For example, the setpoint range for the spring actuation safety mode is indicated in Section 5.2.2.2.4 as 1165 to 1205 pounds per square inch gauge (psig) whereas Table 5.2-2 lists 1130 to 1205 psig for this range. Define the phrase "valve groups" and indicate how you include consideration of valve groups in your analysis. Discuss how you use these different setpoint values in your analyses.

Response:

It is assumed that the question is directed to 5.2.2.2.2.4, Safety/Relief Valve Transient Analysis Specifications.

In the overpressure analysis described in 5.2.2.2.2.4, the valves are divided into five hypothetical groups or "valve groups" such that each group has 1/5 of the total calculated capacity. Within a group, the valves have the same opening and closing pressure setpoints.

The group pressure setpoints listed below are used in the overpressure analysis, while the valve setpoints shown in Table 5.2-2 are the specified nominal values. It is clear that the setpoints in the analysis are higher (i.e., more conservative) than the specified values. This is to account for initial setpoint errors and any instrument setpoint drift that might occur during operation.

Group	Setpoint
1	1177
2	1187
3	1197
4	1207
5	1217

Section 5.2.2.2.2.4 incorrectly states the setpoint range used in the transient analysis. It has been revised to reflect the values shown above.

Q. 211.054
(5.2.2)

The peak pressures occurring after closure of the MSIV's due to scrams initiated by high flux and high pressure signals are not consistent between Figures 5.2-4 and 5.2-5 of the FSAR. Further, Section 5.2.2.2.3.1 erroneously states that generator load rejection with bypass failure is shown on Figure 5.2-4. Correct these inconsistencies.

Response:

The inconsistencies stated are corrected in revised 5.2.2.2.3.1 and revised Figures 5.2-4 and 5.2-5. The curve for peak vessel bottom pressure from pressure scram in Figures 5.2-4 and 5.2-5 were mistakenly placed onto these figures and have been deleted. It should be noted that the design of safety/relief valves for General Electric reactors is based on the requirements of Section III, Nuclear Vessels of the ASME Boiler and Pressure Vessel Code, which has also been adopted by the NRC as part of the requirements in the Code of Federal Regulations, 10CFR50.55a. It is GE's interpretation that this Code does not require the failure of qualified scram signals such as the direct safety grade position scram. GE, therefore, considers the failure of the direct scram signal and relies on flux scram to terminate the event to be an appropriate licensing basis for reactor vessel overpressure protection compliance. Analysis shows adequate margin does exist in the design of the safety/relief system, and that even if the flux scram signal failed and the event was terminated by pressure scram (clearly an emergency event), the peak vessel pressure would still be less than the emergency and upset ASME Code limits. This position is expressed in a letter from I. F. Stuart to the Director of Nuclear Reactor Regulation (attention V. Stello, Jr.), dated December 23, 1975.

The reference to generator load rejection with bypass failure in 5.2.2.2.3.1 was incorrect and has been deleted.

Q. 211.055
(5.2.2)

Indicate whether the WNP-2 facility will incorporate a fast scram system.

Response:

WNP-2 will not incorporate a fast scram.

Q. 211.056
(5.2.2)

Provide calculations to support the values you assume for the discharge coefficients and the flow capacities of the SRV's.

Response:

The values used for the average discharge coefficient and flow capacities are not assumed but rather were determined by experiment. The valve manufacturer, Crosby Valve and Gage Company located in Wrentham, Massachusetts, physically tested three different size valves of the type used at WNP-2 at three different popping pressures using saturated steam to obtain flow data for the valve type. These tests were performed in 1968 and the data obtained was submitted to the National Board of Boiler and Pressure Vessel Inspectors for certification. Certification was approved in November of 1971. The certification includes verification of the average discharge coefficient shown in 5.2.2.4.2.1. The following table gives the certified flow capacities for a Crosby-style HB pressure relief valve.

CROSBY VALVE & GAGE COMPANY
STYLE HB - Section III, Nuclear
(Formula: W = 51.5 x 0.966 x AP x 0.90)
Accumulation 3% per Section III

		Popping Press. Lbs.	Capacity Lbs. Per Hour
Inlet Size:	6 in.	50	47,789
		100	84,966
Bore Dia.:	4.530	200	159,321
		300	233,675
Area:	16.117	500	382,385
		1000	754,158
		1500	1,125,931

The experimental results verify the use of the ASME flow rate formula as used in Table 5.2-2.

$$\text{Flow Rate (LBM/HR)} = 51.5 \times 0.966 \times A \times P \times 0.90$$

Where A is the orifice area of the valve in square inches and P is the absolute pressure at the upstream position of the valve measured in psi.

It should be noted that the Crosby Style HB safety/relief valves used at WNP-2 have been returned to the manufacturer for design changes which will greatly improve the valves functional characteristics and reliability. The design changes do not affect discharge coefficient or flow capacities obtained experimentally for the valve.

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Q. 211.057
(15.0)

Indicate the power-operated pressure relief setpoints and the flow capacities assumed in your transient analyses in Section 15 of the FSAR.

Response:

The assumed relief setpoints for transient analyses are: 1106, 1116, 1126, 1136, 1146 (psig). The flow capacity of the 18 valves is 107.1% NBR at 1164 psig. The above information is listed in Table 15.0-2 of the FSAR.

The individual relief valve capacity at 1164 psig is:

$$\frac{107.1\%\ NBR}{18} = 850{,}533\ \text{lbs/hr where NBR} = 14.292\ \text{Mlbs/hr at 3323 MWth}$$

Now at the relief valve setpoints:

Opening Setpoint assumed in FSAR, psig	Respective Capacity, lbs/hr.
1106	808,692
1116	815,906
1126	823,120
1136	830,334
1146	837,548

The relief valve capacity shown above is consistent with data given in Table 5.2-2. For example, at 1106 psig the flow capacity is:

$$\frac{(1106 + 14.7)\ \text{psia}}{(1148 \times 1.03 + 14.7)\ \text{psia}} \times 863{,}900\ \text{lbs/hr} = 808{,}738\ \text{lbs/hr}$$

Q. 211.058
(6.3)

Confirm that adequate net positive suction head (NPSH) will exist if operator action is not initiated within 20 minutes following a postulated loss-of-coolant accident (LOCA). Provide your detailed NPSH calculation to demonstrate conformance with our positions in Section C of Regulatory Guide 1.1, "Net Positive Suction Head for Emergency Core Cooling and Containment Heat Removal System Pumps", November 1970, for the pumps in the emergency core cooling system (ECCS).

Response:

The ECCS NPSH calculation demonstrating conformance to Regulatory Guide 1.1 has been presented in the response to Question 022.038. The suppression pool temperature used in this calculation is 220°F. The available NPSH is 36 feet, using the unrealistic assumption of not taking credit for wetwell air space pressure being the vapor pressure of the suppression pool water at 220°F. The NPSH required by the RHR pumps, as documented by the pump performance curves (Figures 6.3-10a, b and c) is 11 feet at 7450 gpm rated flow. The NPSH required for the LPCS pump, as documented by the pump performance curve (Figure 6.3-8), is 12 feet at a maximum flow of 7800 gpm. The HPCS pump was tested by the manufacturer from 500 gpm to runout (7270 gpm) with an available NPSH of 31.6 feet and there was no evidence of cavitation. This is not considered the required NPSH, but it does verify the adequacy of the available NPSH.

The response to Question 211.062 addresses the affect on NPSH due to a drop in suppression pool water level from passive failures post-LOCA. About five days of operator action time is available before the NPSHA drops to 31.6 ft.

The 220°F peak suppression pool temperature predicted by the containment response and analysis presented in 6.2.1 assumes the following:

a. no containment heat removal for the first 10 minutes;

b. containment heat removal after 10 minutes assuming a full fouled RHR heat exchanger and rated RHR flow, 7450 gpm, through the shellside of the heat exchanger;

c. no credit taken for any heat losses other than through the RHR heat exchangers;

d. a conservative, steady 95°F standby service water (SW) temperature; and

e. a suppression pool volume of 107,850 $feet^3$

No specific calculations on suppression pool temperature were performed to show the effects of starting long-term cooling 20 minutes after the accident. However, there are enough conservatisms in the suppression pool temperature analyses to justify the adequacy of the WNP-2 design if a 20-minute operator action time is used.

The assumption of no containment heat removal prior to operator action is not realistic. ECCS and Standby Service Water (SW) to ECCS components, including the RHR heat exchangers, are automatically started after receipt of the LOCA signal, even if off-site power is lost. The RHR system, which is used for long-term containment cooling, is automatically aligned to the low pressure coolant injection (LPCI) mode at the start of the accident. About 45% of the LPCI flow goes through the RHR heat exchanger, while the balance of the flow goes through the heat exchanger bypass valve F048 (reference Figure 5.4-13). Valve F048 automatically opens after a LOCA signal. Without any operator action, some containment cooling is initiated. In order to place the plant in a long-term cooling mode, all the operator has to do is close the RHR heat exchanger bypass valve F048. Even with only 45% LPCI flow through the RHR heat exchanger, 73% of the rated thermal conductivity is still available. The RHR heat exchanger's thermal conductivity is 229 BTU/sec °F with the reduced shell side flow as compared to 289 BTU/sec °F with rated shell side flow.

Because of the small temperature difference between the suppression pool and the ultimate heat sink during the early part of the transient, the RHR heat transfer rate is not high. Changing the assumption in the analysis presented in 6.2.1 of no containment cooling until 20 minutes results in less than 2°F increase in the suppression pool temperature 20 minutes after the start of the accident. This was determined by calculating the total heat removed by the RHR heat exchanger between 10 and 20 minutes after the accident and then adding that quantity of heat to the suppression pool mass. This small temperature increase will in turn result in less than 1°F increase in the peak suppression temperature, which occurs several hours later. This increase will not cause NPSH problems.

The assumption of a steady 95°F SW temperature is very conservative. Ultimate heat sink parametric studies have determined that if the realistic, although still conservative, SW transient presented in the response to Question 010.023 and presented in 9.2.5 is used, the peak suppression pool temperature will be approximately 10°F lower than predicted using a steady 95°F SW temperature.

In the ultimate heat sink temperature transient analysis in 9.2.5.3, the effect on suppression pool temperature transient was determined, assuming a fully fouled RHR heat exchanger, no operator action to close F048, and the predicted service water temperature response. This suppression pool transient is shown in Figure 9.2-7a, and it results in a suppression pool temperature less than 220°F.

As shown in Table 6.2-1, the actual minimum suppression pool volume outside the pedestal is 127,197 feet^3 not the 107,850 feet^3 used in the analysis. The latter figure is used to maximize the initial blowdown effects after a LOCA and does not include the water volume more than 12 feet below the down-comer exits. Since the maximum calculated suppression pool temperature does not occur until about 16 hours after the accident (reference Figure 6.2-8), credit can be realistically taken for all the water outside the pedestal area, i.e., 127,197 feet^3.

Therefore, there is enough conservatism in the suppression pool temperature transient analysis to show that even with an assumed 20-minute operator time, the suppression pool will remain below 220°F, and at 220°F, there is adequate NPSH available in accordance with Regulatory Guide 1.1 to operate the ECCS pumps.

Q 211.059
(6.3)

You state in the FSAR that no operator action is required until 10 minutes after an accident. However, it is our position that no operator action should be required for 20 minutes after an accident. Accordingly, discuss the consequences of the reactor operator not performing his required duties until 20 minutes after a postulated LOCA. Discuss all actions which the operator is required to perform to place the plant in the long-term cooling mode following a postulated LOCA.

Response:

As indicated in 6.3.2.8, no operator actions are assumed for 10 minutes after a postulated LOCA. Of the five criteria specified in Section 50.46 and Appendix K to 10 CFR 50, the maximum peak cladding temperature, maximum cladding oxidation, maximum hydrogen generation, and transients which might jeopardize maintaining coolable geometry all occur before 10 minutes for the design-basis accident.

The only criterion not met in less than 10 minutes is that of maintaining long-term cooling. This latter criterion is met by the initiation of the suppression pool cooling mode. As explained in 6.2.2.3 and in the response to Question 211.058, the only action the operator must perform to place the plant in a long-term cooling mode is to close the RHR heat exchanger bypass valve F048 (Reference Figure 5.4-13). As shown in the response to Question 211.058, there is enough conservatism in the suppression pool transient analysis to show that even with an assumed 20-minute operator action time, the suppression pool will remain below 220°F, and at 220°F, there is adequate NPSH available in accordance with Regulatory Guide 1.1 to operate the ECCS pumps.

The only type of loss-of-coolant accident which would require operator action is a break outside the containment in a line connected directly with the reactor pressure vessel. Operator action is required to activate the automatic depressurization system if HPCS is not available because there will be no high drywell pressure signal. Then the low pressure ECCS can terminate the transient. The maximum steam line break (MSLB) is representative of this class of break. A discussion for assuming a 20 minute operator action time after a MSLB is presented in the response to Question 211.065. The conclusion is that the peak cladding temperature only reaches about 1250°F, far below the 2200°F limit.

Q. 211.060
(6.3)

On page 6.3-10 of your FSAR, you state that the high pressure core spray (HPCS) is automatically shutdown by a signal indicating a high water level in the reactor pressure vessel (RPV). Indicate what provisions are incorporated in the WNP-2 facility to prevent premature termination of the HPCS flow. State whether any interlocks are provided (e.g., a LOCA signal) which would prevent automatic shutoff.

Response:

Premature termination of HPCS flow prior to attaining high water level (level 8, per Figure 5.2-6) is prevented by a requirement that the level 8 high level trip consist of a two-out-of-two logic permissive to close the HPCS injection valve MO-F004 (Reference Figure 6.3-2). LOCA logic does not prevent automatic shutoff on level 8. If water level decreases to level 2 after HPCS flow has been shut off, the HPCS injection valve will automatically reopen. The logic for MO-F004 is shown in FSAR Figure 7.3-8, High Pressure Core Spray FCD, Sheet 1. During the time the injection valve is closed, the HPCS pump is circulating flow to the suppression pool.

Q. 211.061
(6.3)

When the water level in the condensate storage tanks (CST) drops to a predetermined level, the HPCS pump switches automatically to the suppression pool. Provide assurance that the water level in the CST will supply an adequate NPSH at the time this switchover occurs. In addition, show that the minimum submergence of the suction piping in the CST will preclude formation of an undesirable vortex. Describe the preoperational testing you will perform to demonstrate that such vortex formation will not occur.

Response:

During performance testing of the HPCS pump, no direct measurement of the required NPSH was obtained. However, in lieu of a direct measurement of the required NPSH, the pump was tested with the available NPSH held constant at approximately 31.6 feet (reference centerline suction nozzle) for flows ranging from 519 gpm to 7255 gpm (runout). During these tests no evidence of cavitation in the pump was detected. Although this is not considered the required NPSH, it does indicate that the 31.6 feet used in the tests meets or exceeds the required NPSH for the full flow range of the pump. The rated HPCS pump flow is 6856 gpm with the RPV pressure 20 psi above primary containment pressure, and 1550 gpm with the RPV pressure 1130 psi above the pressure at the source of suction. The available NPSH to the HPCS pump at suction transfer from the CST to the Suppression Pool is calculated using the following data:

a. atmospheric pressure, 14.7 psia, above the CST's.

b. vapor pressure, 1.7 psia, conservatively assuming the CST's are at 120°F.

c. pressure drop due to friction, 7.2 feet, for a flow of 6856 gpm.

d. static head when the CST's are at 447'4" (switchover level), 26.96 feet. (pump suction C.L. el. 420'-4-1/2")

The available NPSH is 49.8 feet which is significantly greater than the performance test parameter of 31.6 feet.

The HPCS pump is guaranteed a continuous suction supply during suction switchover, since the suppression pool suction supply valve is designed to open on a low level signal from the

CST's. Once the suppression pool suction supply valve is fully open, the suction supply valve from the CST's is automatically closed. Refer to Figure 6.3-1 for the HPCS valving configuration.

The suction piping in the CST's has been reviewed to determine if vortexing will be a problem. As a result of this review, the HPCS suction switchover level has been modified to assure minimum submergence the suction piping in the CST to prevent vortexing for all operating modes of the HPCS. During preoperational testing, suction transfer from the CST to the suppression pool of low CST level was verified to occur without causing HPCS pump cavitation.

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Q. 211.062
(6.3)

Provide assurance that adequate NPSH exists in the event of a passive failure of the ECCS in a water-tight pump room. Discuss the possibility of vortex formation at the suction intake of the remaining ECCS pumps with the lowered suppression pool level that would result from this type of postulated accident. Discuss the preoperational tests you will perform to demonstrate that there is no impairment of the functional capability of the ECCS due to a lowered suppression pool level.

Response:

Passive failures in ECCS piping and their affects on available NPSH were previously addressed in the response to Question 212.003. In this response, it was determined that the operator has approximately 5 days to detect and isolate any ECCS passive failure before the suppression pool drops below the minimum level required for ECCS pump requiring the most NPSH, which is the HPCS pump (31.6 ft). See the response to FSAR Question 211.061 for further information on NPSHR. Five days represent more than enough time to isolate any leaks, since the safety grade level alarm system in the ECCS pump rooms will alert the operator to ECCS room flooding prior to any significant loss of suppression pool water level.

All ECCS suction lines in the suppression pool have been designed with large diameter piping (24 inches) to reduce the inlet velocity (maximum 6.67 ft/sec). This inlet velocity will support a vortex of no more than 2-1/2 feet in height. The inlet to each of the ECCS suction lines is greater than 22 feet below the minimum suppression pool level. Vortex formation at the ECCS pump inlets as a result of lowered suppression pool level is thus not considered a problem.

Since it has been conservatively established that all ECCS suction lines are adequately submerged to preclude formation of an undesirable vortex, no confirmatory preoperational testing will be performed.

Q. 211.063
(6.2)
(6.3)

Confirm that the low pressure coolant injection (LPCI) system does not perform any other function such as containment cooling during the short-term portion of the recovery phase following a postulated LOCA. If the LPCI system will be used for another function during this time period, this additional function must be considered in your LOCA analyses. (Refer to Question 211.082 of this enclosure.)

Response:

A LOCA signal, which automatically initiates the LPCI mode of RHR system, is also used to isolate all other modes of RHR operation and revert system valves to LPCI line up. The RHR system continues in the LPCI mode until the operator determines that another mode of operation is needed (such as containment cooling) and takes action to manually initiate that mode. By training, the operator will not divert LPCI to any other mode of operation until adequate core cooling is assured. No operator actions are needed during the short-term (see also 6.3.2.8 and 6.2.2.2).

Q. 211.064

Provide the values of the total break area which you assumed for the following postulated breaks: (1) the recirculation line break; (2) the steam line break inside and outside containment; (3) the feedwater line break; and (4) the core injection spray line break.

Response:

The maximum recirculation break area of 3.113 ft^2 is comprised of the following areas: recirculation safe end area (2.565 ft^2), total jet pump nozzle area of one recirculation loop (0.468 ft^2), and the minimum flow area of the reactor water cleanup system piping connecting the two loops (0.080 ft^2). As explained in 6.2.1.1.3.3.2, the maximum steam line break inside the containment is initially based on the steam line safe end area (3.050 ft^2), plus the minimum flow restrictor area (0.910 ft^2). After the main steam isolation valves have closed, the flow is limited by critical flow through the safe end. This is shown in Figure 6.2-10. The maximum outside steam line break area (3.650 ft^2) is based on the minimum flow limiter area for each steam line (0.910 ft^2). The feedwater line break area (0.362 ft^2) is based on the inside area of the feedwater sparger pipe (0.181 ft^2). The maximum core spray line break area is based on the limiting area of the core spray line safe end (0.470 ft^2).

Q. 211.065
(6.3)

Indicate the differences between the assumed values of break areas for postulated steam line breaks inside and outside containment. Your analyses of these postulated breaks indicates that the reactor core could become uncovered if no operator action took place within 20 minutes after this postulated accident. Indicate the effect on the peak clad temperature if the operator takes no action for 20 minutes after an accident. In your response, include a discussion of all your assumptions.

Response:

The difference between the assumed values of break areas for postulated steam line breaks inside and outside containment is explained in 6.2.1.1.3.3.2 and in the response to Question 211.064. The maximum steam line break inside containment is initially based on the steam end area (3.05 ft^2) plus the minimum restrictor area (0.91 ft^2). After the main steam isolation valves have closed, the steam flow is limited by critical flow through the safe end. This is shown in Figure 6.2-10. The maximum outside steam line break area (3.65 ft^2) is based on the sum of the minimum flow restrictor areas for each steam line (0.91 ft^2).

Any break outside the primary containment in a line connecting directly to the reactor pressure vessel will need operator action under loss-of-coolant accident (LOCA) analysis assumptions because there will be no high drywell pressure signal to activate the automatic depressurization system (ADS). Given LOCA analysis assumptions, no credit is taken for the feedwater system and the reactor core isolation cooling (RCIC) system. Also, the high pressure core spray (HPCS) system is assumed to fail. With no credit for the above systems, the operator must manually initiate the ADS to depressurize the vessel below the shutoff head of the low pressure ECC systems, allowing these systems to terminate the transient.

The outside steam line break is representative of this class of breaks. A complete analysis of the outside steam line break assuming no operator action for 20 minutes is presented in the response to LaSalle Question 212.098. Briefly summarizing that analysis, no operator action was assumed until 20 minutes after a maximum steam line break outside the containment. This resulted in a peak cladding temperature of about 1250°F, far below the 2200°F limit. It is appropriate to apply the LaSalle analysis to WNP-2 because the two plants are identical in size and have the same ECC system design and therefore will exhibit LOCA characteristics that are very similar. Significant margin is demonstrated in the LaSalle case to account for any minor differences between the two plants.

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Q. 211.066
(6.3)

Identify all ECCS valves which may be potentially submerged or subject to spray impingement following a postulated LOCA. Discuss the environmental qualification of these valves for these conditions.

Response:

The below listed valves represent the ECCS systems valves inside containment required for safe shutdown following a LOCA which may be subject to spray impingement following a postulated LOCA:

Valve No.	Type	Qty.	System
HPCS-V-5	Testable Check Valve	1	High Pressure Core Spray
HPCS-V-51	Gate Valve	1	High Pressure Core Spray
LPCS-V-6	Testable Check Valve	1	Low Pressure Core Spray
LPCS-V-51	Gate Valve	1	Low Pressure Core Spray
RHR-V-41A,B,C	Testable Check Valve	3	Low Pressure Coolant Injection
RHR-V-111A,B,C	Gate Valve	3	Low Pressure Coolant Injection
MS-RV-3D,4A,4B 4C,4D,5B,5C	Safety/Relief Valves	7	Automatic Depressurization System

None of the above listed valves are subject to flooding following a postulated LOCA because all the water released by the LOCA will flow to the suppression pool and all the listed valves are above the drywell floor.

The safety/relief valves, testable check valves and gate valves listed above and associated components are designed to be suitable for the following accident thermal environment:

Temperature	340°F	320°F	250°F	200°F
Pressure	-2 to 45 psig	-2 to 45 psig	-2 to 25 psig	-2 to 20 psig
Relative Humidity	100%	100%	100%	100%
Duration	3 hrs.	6 hrs.	1 day	100 days

In addition, they have been designed to be operable during and after an SSE.

The gate valves listed above are maintenance valves and are normally locked open. Although they are designed to be operable, they are not required to operate following an accident. The only electrical components on these valves are the limit switches, which are utilized to provide verification that these valves are open during normal plant operation. Therefore, there is no effect on the operation of the ECCS if these valves are subject to jet impingement following a postulated large pipe break.

The testable check valves are equipped with an air actuator to allow valve stroking during normal plant shutdown and thus verify operability. This air actuator is designed so that it will not prevent the check valve from opening for forward flow or closing to prevent reverse flow. The only electrical components on these valves are the stem actuated limit switches which provide position indication of the air actuator rod, and magnetic sensors which provide position indication of the valve disc. The solenoid valve for the air actuators and control element for the magnetic sensors are located outside primary containment. Therefore, there is no effect on the operation of the ECCS if these valves are subject to jet impingement following a postulated large pipe break.

The ADS valves are not designed for operability after steam jet impingement. However, WNP-2 has evaluated the consequences of jet impingement on the ADS valves.

In all cases of postulated jet impingement on an ADS valve, the consequences were found to be acceptable from a safe shutdown standpoint, including a single active component failure in an ECC system. Therefore, no protection from jet impingement is required.

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Q. 211.067
(6.3)

Indicate whether there have been any recent changes or corrections to your ECCS analysis. If so, provide the references for the latest model changes and corrections in the list of references provided for your ECCS analysis.

Response:

The additional references required for the latest model changes and corrections to 6.3.6 are as follows:

6.3-4 "Safety Evaluation for General Electric ECCS Evaluation Model Modifications," letter from K. R. Goller (NRC) to G. G. Sherwood (GE), dated April 12, 1977

6.3-5 Letter, A. J. Levine (GE) to D. F. Ross (NRC) dated January 27, 1977, "General Electric (GE) Loss-of-Coolant Accident (LOCA) Analysis Model Revisions - Core Heatup Code CHASTE05."

6.3-6 Letter, A. J. Levine (GE) to D. B. Vassallo (NRC), dated March 14, 1977, "Request for Approval for Use of Loss-of-Coolant Accident (LOCA) Evaluations Model Code REFLOOD05."

Section 6.3.3.7.1 has been revised for the SAFE/REFLOOD and CHASTE model descriptions to include the appropriate references above. References 6.3-4 and 6.3-6 apply to SAFE/REFLOOD and references 6.3-4 and 6.3-5 apply to CHASTE.

Q. 211.068
(6.3)

Justify the designation in Table 6.3-3 of the FSAR, of the Zimmer facility as the lead plant for the WNP-2 facility with respect to the LOCA break spectrum analysis. Our concern is that the Zimmer fuel assembly is an 8x8 fuel array with one water rod while the WNP-2 fuel assembly will be an 8x8, two water rod array.

Response:

The lead plant analysis approach to LOCA calculations serves to unify the analyses for plants of a given product line by making use of the fact that the LOCA characteristics of similar plants of a product line are similar. A complete break spectrum analysis was performed for LaSalle covering all locations, sizes, and failure combinations via either the lead plant analysis, which identified the limiting failures and breaks, or by the LaSalle-specific break analyses requested. The specific plant response for the limiting cases and the generic response are the same. The locations of the limiting break are insensitive to changes in power level or fuel type. This is the basis of the lead plant concept. The Zimmer LOCA analysis, therefore is an appropriate break spectrum analysis for LaSalle and WNP-2 for the purpose of identifying the LOCA characteristics of these plants.

In conclusion, because the general break spectrum shape does not change with plant size, power level, or fuel type, the lead plant approach is justified for use in identifying break/failure combinations. The limiting points in the break spectrum will be analyzed on a plant-unique basis and the results presented in the WNP-2 FSAR.

Q. 211.069
(6.3)

Correct the small break model curves shown on Figure 6.3-13 of the FSAR for both the failure of the diesel-generator which disables the LPCI and the diesel-generator failure which disables the low pressure core spray (LPCS). Specifically, correct the apparent inconsistency between the values of peak clad temperature (PCT) in Figures 6.3-32 and 6.3-39 of the FSAR and those in Figure 6.3-13 at a break area equal to 80 percent of the break area for the design basis accident (DBA) and at 60 percent of DBA break area.

Response:

The small break model curves shown on Figure 6.3-13 for both the failure of the diesel-generator which disables LPCI and the diesel-generator which disables LPCS are correct. Some confusion may have arisen because at the 0.5 ft^2 break size the two curves appear to intersect, which they do not. They intersect only at the 0.8 ft^2 (approximate) break size.

The PCT curves shown in Figures 6.3-32 and 6.3-39 are taken from the Zimmer lead plant analysis for BWR/5's. The curve in question in Figure 6.3-13 shows the plant specific results at the limiting points of the break spectrum determined by the lead plant analysis and shows that the rest of the spectrum is less limiting than the DBA. Figures 6.3-32 and 6.3-39 from the lead plant analysis are included in the FSAR as representative results for non-limiting breaks. For further discussion of the lead plant concept, refer to Question 211.068.

Q. 211.070
(6.3)

Demonstrate that a postulated failure of the HPCS in conjunction with a postulated break whose area ranges from 1.0 square foot to the DBA break area is not more limiting than the postulated failure of the diesel-generator which disables the LPCI system over the same range of break areas.

Response:

In the large break region, the single failure which disables the greatest number of ECCS systems is in general the most limiting. In the large break region, substantial amounts of initial vessel inventory are lost through the break during the blowdown. With fewer systems available, there is less ECCS flow available for reflooding the core and the core will reflood later. The later reflooding results in higher peak cladding temperatures. Thus, the failure of either diesel which powers two low pressure ECC pumps is more severe than the failure of the HPCS system which involves the loss of only one pump.

Section 6.3.3 of the WNP-2 FSAR has been revised to incorporate a plant specific LOCA analysis for WNP-2. The limiting failure for the break spectrum from 1.0 ft^2 to the DBA has been supplied. Single failure analyses are presented in 6.3.3.3.

Q. 211.071
(6.3)

Indicate why the plots of water level versus time for the 1.0 square foot transition break assuming a failure of the HPCS system are different for the small break method and the large break method.

Response:

The difference in the water level plots for the 1.0 square foot transition break is due to the differences in the vaporization and the void calculations between the small and large break models in the REFLOOD code.

The two most significant differences between the small and large break models are:

a. Use of the Vaporization Correlation: The vaporization of spray water in the core during the period when core sprays are operating is calculated using a bounding correlation. The correlation requires the Peak Cladding Temperature, PCT, at time of spray initiation. The LBM correctly uses a constant value whereas the SBM conservatively uses a continuously increasing value. This difference generally results in a more conservative calculation of the reflooding time using the small break model.

b. Level and Vaporization Following Bottom Reflooding: The LBM uses an empirically based void fraction of 0.50 for calculating the level and the vaporization below the level. The SBM uses the conservative fuel rod heatup model with a reflooding heat transfer coefficient to calculate the level and the vaporization below the level. This difference generally results in a more conservative calculation of the reflooding time using the SBM.

A further discussion of the small and large break models of the REFLOOD code is contained in FSAR Reference 6.3-2, "General Electric Company Analytical Model for Loss-of-Coolant Analysis in Accordance with 10CFR50, Appendix K (NEDO-20566)".

Q. 211.072
(6.3)

Provide information on applicable tests which demonstrate that the pumps used for long-range cooling, both for normal operation and following a postulated LOCA, will operate effectively during the time period required to fulfill their function.

Response:

The RHR pumps and LPCS pumps are used for long-term cooling. Tests to which these pumps are subjected for operability assurance and performance have been described in the response to Question 211.042.

GE operating experience of Ingersoll-Rand ECCS pumps is as follows:

Hatch 2	RHR Pump	2A	864	hours
		2B	1,112	hours
		2C	629	hours
		2D	569	hours
	LPCS Pump	2A	13.5	hours
		2B	11.8	hours
Chinshan 1	RHR Pump		100	hours
	Core Spray Pump		30	hours
Chinshan 2	RHR Pump		75	hours
	Core Spray Pump		20	hours

No problems have been reported on these pumps.

Pump design principles applied by Ingersoll-Rand to these units are not unique. Assurance of a predictable functional reliability is also provided by a history of design, production, and application of pumps for similar pumping requirements in other nuclear and non-nuclear applications.

Recently, Staff questions have been asked on other BWR projects under review regarding operating experience of pumps similar to those used for ECCS functions. This same information is provided below as part of the WNP-2 docket.

The vertical pumps used for ECCS functions at WNP-2 are sized at 1200 to 8100 gpm. They are multistaged axial pumps. A partial list of the application history for similar pumps made by the same vendor is as follows:

Year	Size Range-gpm	Number of Pumps
1963	<4,000	12
1964	<3,000	24
1965	<5,000	32
1966	<4,500	39
1967	<5,000	39
	8,000	3
1968	<6,500	25
	9,000	6
	11,000	9
1969	<6,500	39
	8,000-9,000	9
1970	<6,500	33
	8,000	14
	12,000	6
1971	<6,500	53
	9,000	3
	10,000-12,000	12
1972	6,500	44
	8,000	18
	10,000-12,000	18
1973	<6,500	41
	8,000	8
	10,000-13,800	20

Year	Size Range-gpm	Number of Pumps
1974	<6,500	32
	8,000	2
	10,000-13,800	30
1975	<7,500	76
	8,500	18
	10,000-13,800	50
1976	8,500	9

Although the operating experience in nuclear applications is just beginning, the post-operating experience in non-nuclear applications with these vertical pumps is very extensive. It indicates that the WNP-2 ECCS pumps can be expected to operate as required.

In reviewing this table, the generic pump design should be recalled because larger capacity pumps are configured from stages that comprise the smaller capacity pumps. Design refinements are evident in the capacity growth of these stages, whether in single, double, or multiple axial stackups.

Q. 211.073
(6.3)

Table 6.3-5 is not clear. Discuss the intent of the column headed, "Effect on ECCS", with regard to the particular break location; i.e., indicate the postulated break location.

Response:

Table 6.3-5 has been deleted because the information is also included in revised Table 6.3-7. In 6.3.2.5 of the FSAR text, the reference to Table 6.3-5 has been changed to refer to the revised Table 6.3-7.

Q. 211.074
(6.3)

Check valves in the discharge side of the HPCS, the LPCI/RHR and the LPCS systems perform an isolation function since they protect these low pressure systems from the high pressures in the reactor. We require that: (1) these check valves be classified as ASME IWV-2000, Category AC; and (2) the leak testing for these valves be performed according to the applicable code specifications. You should recognize that a test which simply draws suction on the low pressure size of the outermost check valves, will not be acceptable. Such a test only verifies that one of the check valves in series is fulfilling its isolation function. The required testing frequency is that specified in the ASME Boiler and Pressure Vessel Code, except in those cases where only one or two check valves separate high and low pressure systems. In these cases, we require that you perform leak testing of these valves at each refueling after the valves have been exercised. Accordingly, identify all ECCS check valves which should be classified as Category AC in accordance with our position on this matter. Verify that you will perform the required leak testing in accordance with the required frequency and that you have the necessary test lines to leak test each valve. Provide the leak detection criteria that you propose for the WNP-2 Technical Specifications.

Response:

The valves enumerated below are check valves which separate a low pressure system from reactor pressures. These valves are ASME Section XI, IWV-2000, Category AC valves: LPCS-V-6, RHR-V-41A, RHR-V-41B, RHR-V-41C, RHR-V-50A, and RHR-V-50B.

To assure that these valves adequately protect the low pressure systems, they are tested as part of the WNP-2 Inservice Testing Program Plan in accordance with the requirements of ASME Section XI, IWV-3000. This program and the appropriate leak detection criteria have been submitted for your review in accordance with the response to Question 110.034. The test line arrangement for the valves in question is shown in Figures 6.2-31(1) and 6.2-31(m).

Q. 211.075
(6.3)

Indicate the provisions incorporated in the WNP-2 facility to protect the water level instrumentation for the CST and the lines from this tank leading to the HPCS systems from the effects of cold weather and dust storms. In responding to this item, cross-reference your responses to Items 010.16 and 211.22.

Response:

The water level instrumentation for the CST and the lines from this tank leading to the HPCS system are totally protected from the effects of cold weather and dust storms. The lines are electrically heat traced and a Seismic Category I enclosure has been provided for all tubing and instrumentation. All level instrumentation shall be NEMA type 4 rated (watertight and dust-tight indoor and outdoor).

See also the response to Question 211.012. The response to Question 010.016 does not address the concerns of this question. The safety-related instrumentation necessary for switchover of HPCS and RCIC pump suction from the CST is located indoors and, as such, is not directly affected by cold weather or dust storms.

Q. 211.076
(6.3)

Some of the ECCS relief valve discharge lines penetrate primary containment and have outlets below the surface of the suppression pool. Since these lines are part of the primary containment boundary, we are concerned that excessive dynamic loads resulting from water hammer during actuation of the relief valves may cause cracking or rupture of these lines. Accordingly, identify these lines which penetrate the primary containment. Provide information concerning the measures you are taking to prevent line damage due to water hammer.

Response:

The ECCS relief valves shown on Table 211.076-1 have discharge lines which penetrate the primary containment and have discharges below the suppression pool water level (Reference Figures 5.4-13a, 5.4-13b, 6.3-1, 6.3-5).

All relief valves shown on this Table Section are purchased on ASME III, Class 2 requirements to match the requirements of the piping they are protecting. As such, the setpoint tolerance is ±3%, per ASME, Section III, Paragraph NC-7614.2.

The relief valves are installed to accommodate thermal expansion and leakage across closed valves in isolated piping systems. Pressure buildups in isolated lines will be slow and discharges from the relief valves in these lines will be small. Water hammer and other hydrodynamic loads are not considered a potential problem in these lines.

Table 211.076-1

Relief Valve	Setpoint/ Capacity	Location	Piping Design Pressure
LPCS-RV-18	550 psig/ 100 gpm	LPCS Discharge Leg Relief	550 psig
LPCS-RV-31	100 psig/ 10 gpm	LPCS Suction Leg Relief	100 psig
HPCS-RV-35	1474 psig/ 25 gpm	HPCS Dischage Leg Relief	1575 psig
HPCS-RV-14	100 psig/ 10 gpm	HPCS Suction Leg Relief	100 psig
RHR-RV-25 (A, B, C)	500 psig/ 25 gpm	RHR Discharge Leg Relief	500 psig
RHR-RV-88 (A, B, C)	125 psig/ 10 gpm	RHR Suppression Pool Suction Relief	220 psig A, B 125 psig-C
RHR-RV-5	220 psig/ 25 gpm	RHR Shutdown Cooling Suction Relief	220 psig
RHR-RV-30	125 psgi/ 10 gpm	RHR Flush Line Relief	125 psig
RHR-RV-1 (A, B)*	500 psig/ 20 gpm	RHR Heat Exchanger Thermal Relief	500 psig
RHR-RV-36**	75 psig/ 1750 gpm	RHR Heat Exchanger Condensate Relief	125 psig

* RHR-RV-1A, B are shown on Figures 5.4-13a and 5.4-13b (thermal relief valve on heat exchangers RHR-HX-1A, B) but are not designated by tag number.

** RHR-RV-36 does not serve a pressure relief function. However, it does serve a containment isolation function since the RHR steam condensing mode has been deactivated, see 5.4.6.2.5.3.

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Q. 211.077
(6.3)

Since the ECCS contains both manually operated and motor-operated valves, there is a possibility that manual valves might be left in the wrong position and that this condition will remain undetected when an accident occurs. Accordingly, provide a list of the locations and types of all manually operated valves in the safety-related systems of the WNP-2 facility. For each of these valves, provide a discussion of your procedures to minimize the possibility of an occurrence as described above. We require that you provide indication in the control room for all critical ECCS valves, either manually or motor-operated.

Response:

The following table provides a list of the location, type, size and special features of all manually operated valves (excluding test, root, vent, drain and instrument block valves) in the safety-related ECCS systems of the WNP-2 facility. Test, root, vent and drain valves are excluded from the list since such improperly positioned valves will initiate a high Reactor Building sump level alarm or low pump discharge pressure alarm and cannot remain undetected. Instrument block valves are checked on a frequency established by instrument calibration requirements.

As can be seen from the list, precautions have been taken to minimize the possibility that manual valves may be left in the wrong position. Most of the valves, including all the valves in the main process flowpath, are equipped with a padlock and chain to help ensure administrative control over their being maintained in the appropriate position. In addition, all motor operated valves, as well as critical manual valves (i.e., the maintenance valves in the ECCS injection lines) are provided with limit switches to provide position indication in the control room. Manual valves are considered critical if they are in the main process flowpath and cannot be verified to be in the correct position either by visual inspection during normal plant operation or by ECCS pump surveillance testing. Please refer to Figure 3.2-7, High Pressure Core Spray and Low Pressure Core Spray Systems, for the relative location of the valves listed (and Figures 3.2-6A and 3.2-6B Residual Heat Removal Systems).

211.077-2

VALVE NO.	QTY.	SIZE	SPECIAL TYPE	FEATURE	LOCATION	NOTES
RHR-V-7	1	3	Gate	LC	Flush supply to loop A suction.	
RHR-V-18, A, B, C	3	6	Gate	LO	RHR pump minimum flow.	
RHR-V-63, A, B, C	3	3	Gate	LC	Flush supply to shut-down cooling loop.	
RHR-V-67	1	18	Gate	LC	RHR loop C crosstie.	
RHR-V-70	1	3	Gate	LC	RHR, HPCS & LPCS to drain to radwaste.	
RHR-V-71 A, B, C	3	3	GAte	LC	RHR pump suction drain.	
RHR-V-72 A, B	2	3	Gate	LC	RHR pump discharge drain.	
RHR-V-82	1	2	Gate		Water leg pump suction isolation.	6
RHR-V-85, A, B, C	3	1-1/2	Stop Check		Water leg pump discharge to RHR pump discharge line.	6
RHR-V-86	1	3	Gate	LC	Flush supply to reactor head spray.	
RHR-V-104		10	Globe	LC	Intertie to Fuel Pool Cooling system.	
RHR-V-106	1	3	Gate	LC	Flush supply to RHR Pump C suction.	
RHR-V-109	1	18	Gate		RHR Pump C suction from condensate system.	7, 9
RHR-V-110 A, B, C	3	18	Gate	LO	RHR pump discharge isolation.	
RHR-V-111 A, B, C	3	14	Gate	LO, LS	LPCI line at RPV.	1
RHR-V-112 A, B	2	12	Gate	LO, LS	Shutdown cooling injection.	
RHR-V-113	1	20	Gate	LO, LS	Shutdown cooling suction.	
RHR-V-114	1	3	Gate	LC	RHR pump C discharge drain.	
RHR-V-121	1	3	Gate	LC	Radwaste sump pump intertie to suppression pool.	
RHR-V-130 A, B	2	3	Globe	BF	Spray ring header test connection.	
RHR-V-170	1	1-1/2	Gate		Drain Pot outlet.	7, 10

VALVE NO.	QTY.	SIZE	SPECIAL TYPE	FEATURE	LOCATION	NOTES
RHR-V-171	1	1-1/2	Gate		Drain Pot outlet.	7, 10
RHR-V-172, A, B	2	18	Gate	LO	RHR Test Line.	
RHR-V-173, A, B	2	2	Gate		RHR Heat Exchange Vent.	7
RHR-V-174	1	18	Gate		RHR Test Line.	7, 8
LPCS-V-4	1	3	Gate		LPCS Pump discharge check valve bypass.	2
LPCS-V-8	1	3	Gate	LC	LPCS Drain.	
LPCS-V-25	1	3	Gate		Flush supply to LPCS pump discharge.	9
LPCS-V-32		2	Gate		Water leg pump suction isolation.	3
LPCS-V-34	1	1-1/2	Stop Check		Water leg pump discharge isolation.	3
LPCS-V-51	1	12	Gate	LO,LS	LPCS line at RPV.	1
LPCS-V-52	1	6	Gate	LO	LPCS pump minimum flow.	
LPCS-V-60	1	12	Gate		LPCS test line.	2, 8
HPCS-V-3	1	3	Gate		Flush supply to HPCS discharge.	11
HPCS-V-6	1	1-1/2	Stop Check		Water leg, pump discharge isolation.	4
HPCS-V-19	1	3	Gate	LC	HPCS drain.	
HPCS-V-26	1	3	Gate		HPCS pump discharge check valve bypass.	5
HPCS-V-34	1	2	Gate		Water leg pump suction isolation.	4
HPCS-V-51	1	12	Gate	LO/LS	HPCS, line at RPV.	1
HPCS-V-53	1	4	Gate	LO	HPCS pump minimum flow.	
HPCS-V-64	1	12	Gate		HPCS test line.	5, 8
HPCS-V-31	1	3	Gate		Flush supply to HPCS discharge.	11

* LO - has padlock and chain to lock valve in open position.
LC - has padlock and chain to lock valve in closed position.
LS - has integrally mounted limited switches to provide position indication in control room.
BF - blind flange is attached to piping on side of valve away from ECCS process piping 1-1/2" and smaller.

211.077-3

NOTES:

1. A critical ECCS manual valve which is not accessible during normal plant operation and for which no verification is provided during RHR pump surveillance testing that the valve is open.

2. The position of this valve does not affect the ability of the Low Pressure Core Spray (LPCS) to perform its safety function.

3. Closure of this valve will initiate the LPCS pump discharge line low pressure alarm in the Control Room.

4. Closure of this valve will initiate High Pressure Core Spray (HPCS) Pump discharge line low pressure alarm in the Control Room.

5. The position of this valve does not effect the ability of the HPCS to perform its safety function.

6. Closure of this valve will initiate the Residual Heat Removal (RHR) pump discharge line low pressure alarm in the Control Room.

7. The position of this valve does not effect the ability of the RHR system to perform its safety function.

8. Routine surveillance testing of ECCS pump flow confirms valve is open. Valve is accessible during normal operation for position verification.

9. Blind flange in place preventing flow loss even if valve mispositioned. Valve is accessible during normal operation for position verification.

10. Located within the isolated boundary of the "Steam Condensing Mode of RHR" which is deactivated.

11. Both valves accessible during normal operation, both valves would have to be mispositioned and check valve HPCS-V-101 would have to fail for the misposition to effect the HPCS safety function.

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Q. 211.078
(6.3)

Recent experience at an operating plant identified a potential for a common mode flooding of ECCS equipment rooms. The problem involved the equipment drain lines. (Refer to IE Circular No. 78-06, May 30, 1978 which is attached to this enclosure). Verify that the specific design of the WNP-2 floor and equipment drains is such that flooding in any one room or location, will not result in flooding of redundant ECCS equipment in other rooms. In responding to this item, cross-reference your response to Item 010.28.

Response:

Cross connection of ECCS pump rooms from the Reactor Building equipment drain system (Figure 9.3-5) is not possible. The equipment drain from RHR pump rooms A and B are capped. The equipment drains in the other ECCS pump rooms are directed to the floor drains.

As described in the response to Question 010.28, the Reactor Building floor drain system is served by four sumps. Each sump serves up to two rooms, with an isolation valve in the interconnecting piping. The isolation valve is not Seismic Category 1 or Class 1E, but using the acceptance criteria of Standard Review Plan 3.6.1, the floor drain system design is acceptable. Our conclusion is based on our ability to bring the reactor to cold shutdown after a pipe break outside containment and assuming single active failures. Assuming a failure of the isolation valve while flooding one room could flood the interconnected room. However, there is still adequate essential equipment not affected by the flooding to shut down the reactor.

For conditions where credit cannot be taken for non-Seismic Category 1 or non-Class 1E equipment, i.e. post-LOCA, no credit is taken for the isolation valves in the cross-connecting floor drain piping. Class 1E leak detection devices in each ECCS pump room will give the operator at least 44 hours to identify and isolate passive failures in the ECCS post-LOCA before the flooding has any additional adverse effects on another ECCS pump or on the available HPSH from the suppression pool. See the response to Question 212.003 for justification of the available operator action time.

Q. 211.079
(6.3)

The discussion in 6.3.2.2.5 of the FSAR regarding the fill system you propose to prevent water hammer resulting from empty discharge lines in the residual heat removal (RHR) system and in the ECCS, is inadequate. Since there have been about fifteen damaging events due to water hammer that resulted from empty discharge lines of the core spray and RHR systems, we are concerned with the adequacy of fill systems, including their associated instrumentation and alarms, to minimize water hammer. Accordingly, respond to the following matters:

a. Provide a detailed description of the fill system, including the associated instrumentation and alarms, with appropriate references to process and instrumentation drawings (P&ID's).

b. Level transmitters apparently are not used to detect trapped air bubbles upstream of injection valves. A pressure level read downstream of a pump discharge check valve, which is greater than the gravity head corresponding to the highest point in the system, does not necessarily indicate the absence of trapped air pockets. Accordingly, indicate what provisions you have made to avoid trapping of air pockets in the lines. In your response, include a discussion of the effect of leaking valves in bypass test lines.

c. If required maintenance on a particular loop (e.g., the RHR system) necessitates draining of this loop, indicate how the fill system protects the other loop and systems; e.g., the containment spray (CS) system.

d. Indicate the surveillance testing which will be required to demonstrate that the fill system instrumentation is capable of performing its function.

e. Indicate how surveillance tests will be made to determine if the discharge lines for the RHR and CS systems are full as will be required in the WNP-2 Technical Specifications.

f. Assuming the jockey pump system does not maintain full lines, water hammer could occur during surveillance tests of the RHR and CS pumps. If damage occurred due to water hammer, the event would be reported in a licensing event report (LER). However, if special fill and vent procedures were used prior to these tests, water hammer would not occur and any inadequacies of the jockey pump system might not be evident. Accordingly, discuss: (1) your procedures for surveillance tests involving startup of RHR and CS pumps; and (2) your reporting procedures if special filling and venting procedures are used and indicate partially empty lines.

Response:

a. Each of the three ECCS divisions and the RCIC system has a separate water leg pump system powered from essential power of the same division and remote manually operable from the control room. The four water leg pump systems are shown on the following drawings:

RHR loops B and C, water leg pump RHR-P-3 (Division 2)	3.2-6
RHR loop A and LPCS, water leg pump LPCS-P-2 (Division 1)	3.2-7
HPCS, water leg pump HPCS-P-3 (Division (3)	3.2-7
RCIC, water leg pump RCIC-P-3	3.2-8

Each water leg pump motor is provided with indicating lights in the main control room to allow the operators to monitor that the motor is energized. In addition, each ECCS loop has a low pressure alarm in the control room which will alert the operator that the loop is not pressurized. These alarms are shown on their respective functional control diagrams and flow diagrams.

b. The water leg pumps maintain the ECCS loops pressurized. Any leakage, except as noted below, is out of the loops and is made up by the water leg pumps. Leakage across the valves on the injection lines is from the reactor pressure vessel into the ECCS loop; however, this leakage consists of water.

Gases in the ECCS loops are expected as a result of corrosion and temperature changes. The surveillance testing discussed below in d, e, and f will ensure that no significant gas accumulation occurs.

c. Division 1 and 2 water leg pump systems each maintain two ECCS loops filled. (See part a. above). They take a suction on the LPCS pump suction and RHR loop C pump suction, respectively. Maintenance on the LPCS or RHR loop C can disable the respective water leg pump system; however, no more than one ECCS division is affected. Maintenance on RHR loop A or B does not disable the water leg system since these loops can be isolated from their respective water leg pump system by a stop check valve. Thus, the other loop is not affected.

d. Every 31 days as part of the surveillance testing program, each of the "keepfilled" pressure instruments will be tested to verify that each alarms at its low pressure setpoints (see part "a" for list of alarms and setpoints). Every 18 months, the "keepfilled" pressure instrumentation will be recalibrated.

e. Surveillance testing verifying full RHR, HPCS and LPCS pump discharge lines will be performed every 31 days by manually opening the high point vents in each system to verify there is no trapped air in the system.

f. Prior to startup of the HPCS, LPCS and RHR pumps during surveillance testing, the pump discharge lines are verified as being full by venting the systems high point vents. If the discharge lines are found to contain significant amounts of air or gases the system will be refilled and the as-found condition reportd per technical specification surveillance test non-conformance procedures. If management determines that the incident is a reportable licensing event, it will be reported in accordance with Regulatory Guide 1.16. No special fill procedure is required, since the jockey pumps for the systems run continuously to maintain the discharge lines full. It should be noted that the design of the fill system on WNP-2 meets the same criteria as was documented as acceptable in the Zimmer Safety Evaluation Report (NUREG-0528, Page 7-9, 10).

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Q. 211.080
(6.3)

It is our position that the ECCS should be designed to provide sufficient capability to cool the reactor in the event of any single active or passive failure in the ECCS during the long-term cooling phase following a postulated accident. However, you have not presented sufficient information in the FSAR to demonstrate that you satisfy our requirement with regard to passive failures. In particular, our position is that you should provide leakage detection and appropriate alarms which would: (1) alert the reactor operator in the event of passive ECCS failures during the long-term cooling phase; and (2) allow the operator sufficient time to identify and isolate the faulted ECCS line. This design feature should satisfy the requirements of IEEE Std 279-1971, except for the single failure requirements. Accordingly, discuss the following considerations:

a. Indicate the assumed maximum leak rate in the ECCS, including a justification for this value.

b. Indicate the maximum allowable time for corrective operator action, including a justification for this time interval.

c. Demonstrate that your leak detection system will be sensitive enough to: (1) initiate, by alarm, operator action; (2) permit identification of the faulted line; and (3) permit isolation of the line prior to a leak creating undesirable consequences such as flooding of redundant equipment. Our position is that the minimum initiation time for operator action for this task is 30 minutes after the alarm.

d. Demonstrate that your leak detection system can identify the faulted ECCS train and that a leak would be isolable.

You should determine the effects on the ECCS of passive failures of such components as pump seals, valve seals, and measuring devices. Your analysis should address the potential for flooding caused by the ECCS and the potential for ECCS inoperability which could result from a depletion of the water inventory in the suppression pool. Your analysis should include consideration of (1) the flow paths of the radioactive fluid through floor drains sump pump discharge piping, and the auxiliary building; (2) the operation of the auxiliary systems that would receive the radioactive fluids; and (3) the ability of the leakage detection system to detect a passive failure. Examine the auxiliary system piping in the vicinity of ECCS equipment and address the potential for flooding from nonsafety-grade piping. (Refer to Attachment 1 to this enclosure).

Response:

See response to Question 212.003, Amendment 5, concerning Reactor Systems Branch Technical Position, Leak Detection Requirements for ECCS Passive Failures. It addresses the potential for flooding caused by the ECCS and the potential for ECCS inoperability which could result from the depletion of the water inventory in the suppression pool. An examination of the auxiliary system piping in the vicinity of ECCS equipment and the potential for flooding from nonsafety grade piping is addressed in the response to Questions 010.28 and 211.078.

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Q. 211.081
(6.3)

During the long-term cooling phase following a small break LOCA, the reactor operator must control the primary system pressure to preclude overpressurization of the RPV after it has been cooled down. Accordingly, provide the following information:

a. Describe the instructions which the operator will follow while performing long-term cooling of the plant.

b. Indicate the time frame in which the operator will perform the required actions, including justification for the timing of the operator's actions.

c. List the instrumentation and components needed to perform this action and confirm that these components meet safety grade standards.

d. Discuss the pertinent safety concerns during this cool-down period and indicate the design margins available for each concern.

e. Provide plots of the temperature, pressure, and the water inventory in the reactor coolant system (RCS), showing the important occurrences during this cool-down period.

In your response account for the following events: (1) a loss of offsite power; (2) an operator error or (3) a single failure.

Response:

During long-term cooling following a small LOCA, there are no operator actions required to control system pressure to preclude overpressurizing the pressure vessel after it has been cooled off. The system is always protected by relief valves which are more than adequate to handle decay heat energy generation. If the small LOCA caused reactor vessel water level to drop to level 3 or resulted in sufficient drywell pressurization, then the plant would automatically scram. If water level drops to level 2, then HPCS would come on automatically and re-establish water level for the postulated small LOCA, and would automatically control water level to provide adequate core cooling. If the small LOCA had caused sufficiently high drywell pressure and the water level decreased to level 1, then ADS would automatically come on to depressurize the vessel and all remaining ECCS systems would automatically initiate to re-establish water level. The ADS valves stay open once actuated and are designed to stay open for at least 100 days thereby precluding any significant repressurizing of the reactor vessel.

In response to particular portions of this question, we offer the following:

a. There are no operator actions required following a small LOCA to preclude overpressurizing the pressure vessel after it has been cooled off. Operator actions to establish long-term cooling are discussed in 6.2.2.2 and 6.2.2.3.

b. No operator actions are required.

c. No operator actions are required.

d. Limiting safety concerns are addressed in 6.2, Containment Barrier Integrity; 6.3, Peak Cladding Temperature; and Chapter 15, Radiological Releases. The event is not a limiting event for designing to assure the health and safety of the public.

e. System characteristics for the more severe design basis events are shown in 6.2 and 6.3.

The above discussion accounts for:

(1) Loss of Offsite Power

(2) Operator Error or Single Failure

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Q. 211.082
(6.3)

Demonstrate that for all sizes of breaks in a recirculation loop or in ECCS lines which would thereby require actuation of the ECCS, the reactor core is sufficiently covered with water so that diversion of the LPCI system to wetwell spray after 10 minutes is acceptable and that the ECCS systems are in compliance with the requirements of Criterion 35 of the General Design Criterion (GDC) and Section 50.46 of 10 CFR Part 50. In your response, indicate what consideration you have given to the full spectrum of potential single failures and to potential break locations. Confirm that no operator action affecting the performance of the ECCS is required prior to 20 minutes after the initiation of the accident.

In particular, discuss the effects of the following matters on cooling of the reactor core and provide information to show that the requirements of GDC 35 and Section 50.46 of 10 CFR Part 50 are not violated.

a. Provide assurance that the system which diverts the LPCI flow meets the single failure criterion so that diversion of the LPCI system less than 10 minutes after a postulated accident need not be considered.

b. Provide justification for the conclusion that a break in a ECCS line is the most limiting break location when evaluating the effects of a postulated LOCA followed by diversion of the LPCI flow.

c. Provide a sensitivity study of the PCT as a function of break size for small break LOCA's, assuming LPCI diversion will be initiated 10 minutes after the start of the accident. Perform this study for postulated breaks in the ECCS and recirculation lines. For the most limiting break, provide the following figures: (1) the water level inside the shroud as a function of time following the postulated LOCA; (2) the reactor vessel pressure versus time; (3) the convective heat transfer coefficient versus time; (4) the peak clad temperature versus time; and (5) the ECCS flow rate versus time.

d. Provide assurance that LPCI diversion after 10 minutes will have less severe consequences than diversion at 10 minutes, considering the appropriate break sizes for diversion at times greater than 10 minutes after the accident.

e. Provide a discussion which contrasts the need for LPCI diversion for the limiting break size with the need for abundant core cooling required by GDC 35. For example, this discussion could consider the likelihood of LPCI diversion for the limiting break size.

Response:

An analysis which shows acceptable results following diversion of LPCI 10 minutes after a break is provided in the Zimmer docket in response to their Question 212.072. The Zimmer analysis is typical of any BWR/5, as they have the same complement of ECCS systems and is therefore applicable to WNP-2.

No operator action affecting the performance of the ECCS is required prior to 20 minutes after initiation of the accident. We have evaluated the consequences of no operator action for 20 minutes in our response to Question 211.059 and conclude that the requirements of GDC 35 and 10 CFR 50.46 are met. The diversion of LPCI for wetwell sprays is addressed in the response to Question 031.070. Diversion is not anticipated to be required at all, and certainly not in the first 20 minutes. Bounding studies indicate that over 167 minutes are available for the operator to take action after a small break before drywell design pressure is exceeded, assuming bypass leakage five times that allowed per technical specification requirements. Leakage rates smaller than this do not exceed drywell design pressure.

Specific parts of this question are answered as follows:

a. This question presumes that an automatic wetwell spray system is provided. However, in our response to Question 031.070, we showed why automatic sprays are not needed for WNP-2. The Residual Heat Removal system, which provides for diversion of LPCI, is safety-related, redundant and powered from different divisions.

b. The HPCS line break/LPCS diesel-generator failure is the limiting event. Justification is provided in the Zimmer analysis.

c. The information requested on PCT is provided in Figures Q212.72-1 through Q212.72-5 of the Zimmer analysis. The information requested for the most limiting break is provided in Figures Q212.72-6 through Q212.72-10 of the Zimmer analysis.

d. The information requested is provided in the Zimmer analysis.

e. The information requested is provided in the Zimmer analysis.

Q. 211.083
(6.3)

Provide assurance that the fast closure of a recirculation flow control valve conincident with a LOCA is not expected to occur. Alternatively, provide the results of a sensitivity study which evaluates the effects of a fast closure of a recirculation flow valve conincident with the design basis LOCA and the worst postulated ECCS failure.

Response:

Refer to our response to Question 031.058 for a detailed discussion of why closure of the recirculation flow control valve will not occur.

However, to be responsive to the NRC concern, ECCS analyses were performed to qualify the effect (sensitivity) on peak clad temperature from FCV closure at the design rate of 11% per second, concurrent with LOCA. Using standard approved licensing models, the calculated worst case maximum peak clad temperature increase (various locations and break sizes were examined) was $\leq$ 45°F for all BWR/5's and BWR/6's.

Q. 211.084
(15.2)

Your proposed reclassification of the transients resulting from a generator trip and a turbine trip without bypass, from a frequent to a infrequent event in Section 15.2.2.1.2.2 of the FSAR has not been accepted by us and is still under generic review. Accordingly, reanalyze the events cited above to determine the operational limit on the minimum critical power ratio (MCPR) which would not violate the minimum safe valve of 1.06 for the MCPR. It is our position that the limiting transient be reanalyzed with the ODYN code cited in Item 211.49 of this enclosure.

Response:

The limiting rapid pressurization transients for WNP-2 have been reclassified using the moderate frequency category and reanalyzed using the ODYN code. Accordingly, the operational limit CPR has been selected such that the MCPR for any moderate frequency transient will not go below the safety limit of 1.06. See the cycle specific Core Operating Limits Report. Also, see revised response to Question 211.049.

Q. 211.085
(15.A)

Modify your nuclear safety operational analysis (NSOA) drawings to show the nonsafety-grade equipment for which you take credit to mitigate transients and accidents. Such equipment includes relief valves, turbine bypass valves, and a vessel level trip indicating high water in the RPV (i.e., a Level 8 trip).

Response:

Each transient and accident discussed in Chapter 15 corresponds to one protection sequence of an event in Appendix 15A. The NSOA drawings (protection sequences) are consistent with the analytical bases of 15.A.3 and the measures of safety (unacceptable results) of 15.A.2.7 and are primarily directed at system level response requirements. Certain Chapter 15 events assume, following the initiating single-failure, the normal operation of some nonsafety-grade equipment functions; these instances are identifiable from the text.

Much discussion has occurred between the NRC and General Electric concerning the use of nonsafety-grade equipment in analyzing transients. Table 211.85-1 summarizes the nonsafety-grade equipment which is utilized and gives appropriate justification for taking credit for such equipment.

TABLE 211.085-1

IDENTIFICATION OF NONSAFETY-GRADE EQUIPMENT ASSUMED TO FUNCTION IN CHAPTER 15 ANALYSES

Nonsafety-Grade System/Function Utilized	Transient(s) Involved by Number	Justification for Taking Credit in the Analyses
Feedwater Control System (High Rx Water Level Trip Logic, L8)	21, 22, 23, 27, 30, 25, 31, 28, 29, 13, 12, 11, 38, 39	The L8 circuitry is 2 out of 3 logic with diverse power supplies such that a single level switch (is) falluure will not cause or prevent the trip function from occurring. The Tech. Spec. surveillance committed to by the 211.086 response will provide assurance that the trip function will operate when required. This resolution was agreed upon by the NRC (GE-NRC meeting, Nov. 20, 21, 1978) and affirmed at the Zimmer ACRS hearings.
Turbine DEH System (Bypass Valve Operability)	11, 12, 13, 21, 22, 23, 25, 26, 27, 28, 29, 38, 39	The DEH system is functioning continuously at power which demonstrates its operability. The Tech. Spec. surveillance committed to by the 211.086 response will provide additional assurance that the BPVs themselves are functional. This resolution was agreed upon by the NRC (GE-NRC meeting, Nov. 20, 21, 1978) and affirmed at the Zimmer ACRS hearings.
Pressure Relief System (Power Actuated Relief Mode)	8, 22, 23, 27, 29, 30, 31, 12, 14, 26, 20, 13, 15, 24, 25, 28, 38, 29, 40, 42, 43, 44, 45, 51, 52, 53	For all transients identified, failure to actuate has no impact upon Core Thermal Limits (MCPR). Peak Rx pressure would be higher. However, the vessel over-pressurization analysis is still bounding. See the response to 31.064. In addition, NRC concerns in this area include the use of protection system inputs which are non-Seismic Category I or are located in non-Seismic Category I

TABLE 211.085-1 (Continued)

Nonsafety-Grade System/Function Utilized	Transient(s) Involved by Number	Justification for Taking Credit in the Analyses
Pressure Relief System (Power Actuated Relief Mode) (continued)		structures (i.e., the Turbine Building). Responses on the LaSalle docket to NRC Questions 212.55, 212.61, 212.105, 212.115, 212.129, and 212.144 address this issue in detail and are considered applicable to WNP-2. Similarly, conclusions from responses on the Zimmer docket, Questions 221.270 and 221.359 are considered applicable to WNP-2.
RCIC Initiation (Initial Core Cooling)	8, 21, 13, 14, 15, 20, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 38, 39, 40, 51, 53	The RCIC system has been upgraded by the addition of a Seismic 1 water supply via auto-transfer of the pump suction from the CST to the Suppression Pool. The system has long been covered by Tech. Spec. surveillance and now is as reliable as a fully safety-grade system. This resolution was agreed upon by the NRC. (Zimmer SER, NUREG-0528, p. 7-9).
RSCS/RWM/RBM (Prevent improper rod movement)	16, 17, 40 (implicit/passive)	The RWM/RSCS are independent systems. Below 20% power the RWM/RSCS work in tandem to prevent rod withdrawal errors. At these lower power levels the neutron monitoring system via the IRMs acts to scram the Rx and prevent fuel damage in the event of RWM/RSCS failure. Above 20% power the RBM (2 independent channels; 1 required to initiate a rod block) provides protection from improper rod motion. In addition, strict administrative controls enforce approved rod withdrawal sequences. Only unauthorized, unsupervised rod movements should challenge the RBM system to function. See the response to NRC Question 31.109 for further information.

TABLE 211.085-1 (Continued)

Nonsafety-Grade System/Function Utilized	Transient(s) Involved by Number	Justification for Taking Credit in the Analyses
Refueling Interlocks/RPS (Prevent more than 1 rod withdrawal while in states A & B)	16	Refueling operations are a period of strictly supervised actions. Rod motion is required only to confirm proper fuel cell loading/CRD mode operation and subcriticality. The refueling interlocks in addition to administrative controls prevent more than 1 rod withdrawal. Several levels of supervision would have to be bypassed to produce a challenge to the refueling interlocks. The refueling interlock system, in addition, provides two independent channels of interlock protection designed to fail-safe philosophy. See revised 7.7.1.13 for more detail.

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Q. 211.086
RSP
(15.1.2)

During recent meetings with GE, we have discussed whether non-safety-grade equipment can be assumed to function when analyzing anticipated transients. It is our understanding that one of the more limiting events is the failure of the feedwater controller which would result in a maximum flow demand. For this transient, the plant operating equipment which has a significant role in mitigating this event, are: (1) the turbine bypass system; and (2) the reactor vessel high water level trip (Level 8) that closes the turbine stop valves. To assure an acceptable level of performance, it is our position that the availability, the setpoints and the surveillance testing of this equipment be identified in the WNP-2 Technical Specifications. Accordingly, submit your plans for implementing this requirement along with any system modifications that may be required to satisfy our requirements in this matter.

Response:

As a means to assure an acceptable level of performance of both the turbine bypass system and the reactor vessel high water level trip logic, the Supply System will place these components under WNP-2 Technical Specification surveillance. For the L8 trip circuitry, the trip setpoints and surveillance frequency should be similar to that of the HPCS injection valve closure on high level logic presently controlled by Technical Specifications. Tentatively, a trip setpoint of +55.5" and a surveillance frequency of monthly functional checks and quarterly calibration is envisioned. A minimum number of two channels should be available in operational conditions 1 and 2. For the turbine bypass system, a setpoint, per se, does not apply. Valve operability will be performed monthly while at power with a DEH logic check performed at each refueling. Availability requirements will specify that all required valves must be operable in operational conditions 1 and 2.

Q. 211.087
(15.1)

It is not evident to us that the drop of 100° Fahrenheit which you assume in the feedwater temperature results in a conservative evaluation of the cold feedwater transient when the recirculation flow is manually controlled. For example, a feedwater temperature drop of about 150° Fahrenheit occurred at an operating BWR in this country as a result of a single failure of an electrical component. The electrical equipment malfunction which was a breaktrip of a motor control center, caused a complete loss of all feedwater heating due to a total loss of extraction steam. Accordingly, submit: (1) a sufficiently detailed failure modes and effects analysis to demonstrate the conservatism of the 100° Fahrenheit feedwater temperature drop you assume considering the potential effects of any single electrical malfunction; or (2) calculations using a limiting feedwater temperature drop which clearly bounds current operating experience.

Further, reductions in feedwater temperature less than 100° Fahrenheit can occur which would represent more realistic (i.e., slower) changes in feedwater temperature with time. In particular, slow transients with the surface heat flux in equilibrium with the reactor power when the reactor scrams due to a feedwater temperature drop smaller than 100° Fahrenheit, could result in a larger change in the critical power ratio (CPR). Accordingly, evaluate the cold feedwater transient for all sequences of events that can cause a slow transient and demonstrate the conservatism of the values of the feedwater temperature drops, including the rate of change with respect to time, which you assume in your present transient analysis.

Response:

The GE feedwater heater system design specification to the A/E requires that the maximum temperature decrease which can be caused by bypassing feedwater heater(s) by any equipment single failure or operator error should be less than or equal to 100°F. This is the basis of the assumed drop of 100°F in feedwater temperature in the analysis. To verify proper design by the A/E, a review of the feedwater system was performed. A summary of the results of this review is given later in this response. In addition, the startup test program is designed to verify the results of this review by verifying the most limiting single failures or operator errors in terms of impact on feedwater temperature drop. A startup test will then be performed which simulates such a failure or error to confirm plant response, MCPR transient behavior and feedwater temperature drop.

From the analysis with the assumed drop of 100°F in feedwater temperature, it shows that reactor scram due to high thermal power occurs during the transient. It is evident that transients resulting from feedwater temperature decreases greater than 100°F would also result in reactor scram due to high thermal power. Therefore, the transients are not more severe than the one shown in the FSAR. The conclusion that a greater than 100°F feedwater temperature reduction does not result in more severe transients is substantiated by an analysis performed on the LaSalle docket in the response to LaSalle Question 212.142. Due to similarity of design, the analysis is applicable to WNP-2. The analysis assumed a feedwater temperature drop of 150°F which bounds observed operating experience.

It should be pointed out that the peak valve of surface heat flux at the time of scram is determined only by the thermal power scram setpoint independent of the loss of feedwater heating rate. Therefore, reduction in feedwater temperature less than 100°F will not result in a larger CPR than that reported in the FSAR.

The review of the plant feedwater heater cycle for WNP-2 was performed to determine the effects of the removal from service of combinations of feedwater heaters. Feedwater heaters were removed from service in accordance with the allowable feedwater system valving installed in the piping system (see Figure 211.087-1). The removal of feedwater heaters from service could be considered as planned or accidental, but the temperature drops in the feedwater were based on steady state (i.e., not transient) conditions. The following observations are pertinent:

a. Loss of part of, or all the low pressure heaters 1A, 1B, 1C, 2A, 2B, 2C, coincidently has little or no impact on the final feedwater temperature provided the remaining feedwater heaters are in service.

b. Loss of part of, or all the low pressure heaters 1A, 1B, 1C, 2A, 2B, 2C, 3A, 3B, 3C, 4A, 4B, 4C, coincidently has only a slight impact on the final feedwater temperature as long as all 5A, 5B, and 6A, 6B heaters are in service.

c. Loss of part of, or all low pressure heaters 3A, 3B, 4A, 4B, 4C, coincidently with one No. 5 and one No. 6 heater has a large temperature drop, however, calculations indicate this to be less than 100°F reduction in final feedwater temperature.

d. The effects of loss of or removal from service of both No. 6 heaters has a large temperature drop, but it is far less than 100°F.

e. The effects of loss of or removal from service of both No. 5 heaters with No. 6 heaters still in service has a small temperature drop since the No. 6 heaters perform with increased duty.

f. Removal from service of both No. 5 heaters, and one No. 6 heater or one No. 5 heater and both No. 6 heaters results in a temperature drop approaching but still less than 100°F, provided all other heaters are in service.

g. The investigation of the feedwater cycle indicated that a large part of the feedwater heaters have to be removed from service before any substantial temperature drop results.

h. The removal of one of each of the three feedwater heaters No. 1, 2, 3, and 4 and one of each of the two feedwater heaters No. 5 and No. 6 coincidently (i.e., six feedwater heaters out of service, one from each stage extraction) results in a moderate (less than 50°F) temperature drop.

i. The removal from service of all the heaters of a turbine extraction stage has little effect on the final feedwater temperature except in the case of loss of both No. 6 heaters.

j. The removal from service of all No. 3, 4, and 5 heaters with only No. 1, 2, and No. 6 heaters in service has a notable temperature depression drop, however, it is well below 100°F.

It should be noted that there are many non-mechanistic combinations of heaters which, if lost simultaneously, could result in a temperature drop greater than 100°F. However, no single equipment failure or operator error can produce these combinations. For information, these combinations are presented in Note 1.

Several transients were also reviewed to determine if it was possible to obtain a combination of feedwater heaters which resulted in a feedwater temperature drop greater than 100°F. No combination was found to exist.

The following transients were among those reviewed:

a. Loss of offsite power - stops feedwater flow

b. Loss of instrument air - bypasses feedwater to the condenser

c. Loss of any motor-operated or air-operated extraction steam valve - loss of one heater

d. Loss of any motor-operated or air-operated valve in the condensate feedwater system - loss of feedwater heating train which would reduce feedwater flow or bypass of feedwater to the condenser

e. Loss of any motor-operated or air-operated valve in the heater drain system - negligible impact because heating might be lost in one feedwater heater

NOTE:

The following partial listing of coincident combinations of removal from service, or lost feedwater heaters which will result in a feedwater temperature drop of 100°F or greater although no single equipment failure or operator error will produce these combinations.

1. 6A, 6B, 5A, 5B
2. 6A, 6B, 5A, 5B, 4A, 4B, 4C
3. 6A, 6B, 5A, 5B, 4A, 4B, 4C, 3A, 3B, 3C
4. 6A, 6B, 5A, 5B, 4A, 4B, 4C, 3A, 3B, 3C, 2A, 2B, 2C
5. All the feedwater heaters
6. 6A, 6B, (5A or 5B), 4A, 4B, 4C
7. 6A, 6B, (5A or 5B), 4A, 4B, 4C, 3A, 3B, 3C
8. 6A, 6B, (5A or 5B), 4A, 4B, 4C, 3A, 3B, 3C, 2A, 2B, 2C
9. 6A, 6B, (5A or 5B), 4A, 4B, 4C, 3A, 3B, 3C, 2A, 2B, 2C, 1A, 1B, 1C
10. (6A or 6B), 5A, 5B, 4A, 4B, 4C,
11. (6A or 6B), 5A, 5B, 4A, 4B, 4C, 3A, 3B, 3C
12. (6A or 6B), 5A, 5B, 4A, 4B, 4C, 3A, 3B, 3C, 2A, 2B, 2C
13. (6A or 6B), 5A, 5B, 4A, 4B, 4C, 3A, 3B, 3C, 2A, 2B, 2C, 1A, 1B, 1C
14. (6A or 6B), (5A or 5B), 4A, 4B, 4C, 3A, 3B, 3C, 2A, 2B, 2C
15. (6A or 6B), (5A or 5B), 4A, 4B, 4C, 3A, 3B, 3C, 2A, 2B, 2C, 1A, 1B, 1C
16. 5A, 5B, 4A, 4B, 4C, 3A, 3B, 3C, 2A, 2B, 2C
17. 5A, 5B, 4A, 4B, 4C, 3A, 3B, 3C, 2A, 2B, 2C, 1A, 1B, 1C
18. 6A, 6B, 4A, 4B, 4C, 3A, 3B, 3C, 2A, 2B, 2C
19. 6A, 6B, 4A, 4B, 4C, 3A, 3B, 3C, 2A, 2B, 2C, 1A, 1B, 1C

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PLANT RW HEATER PIPING
ARRANGEMENT (FW PIPING)

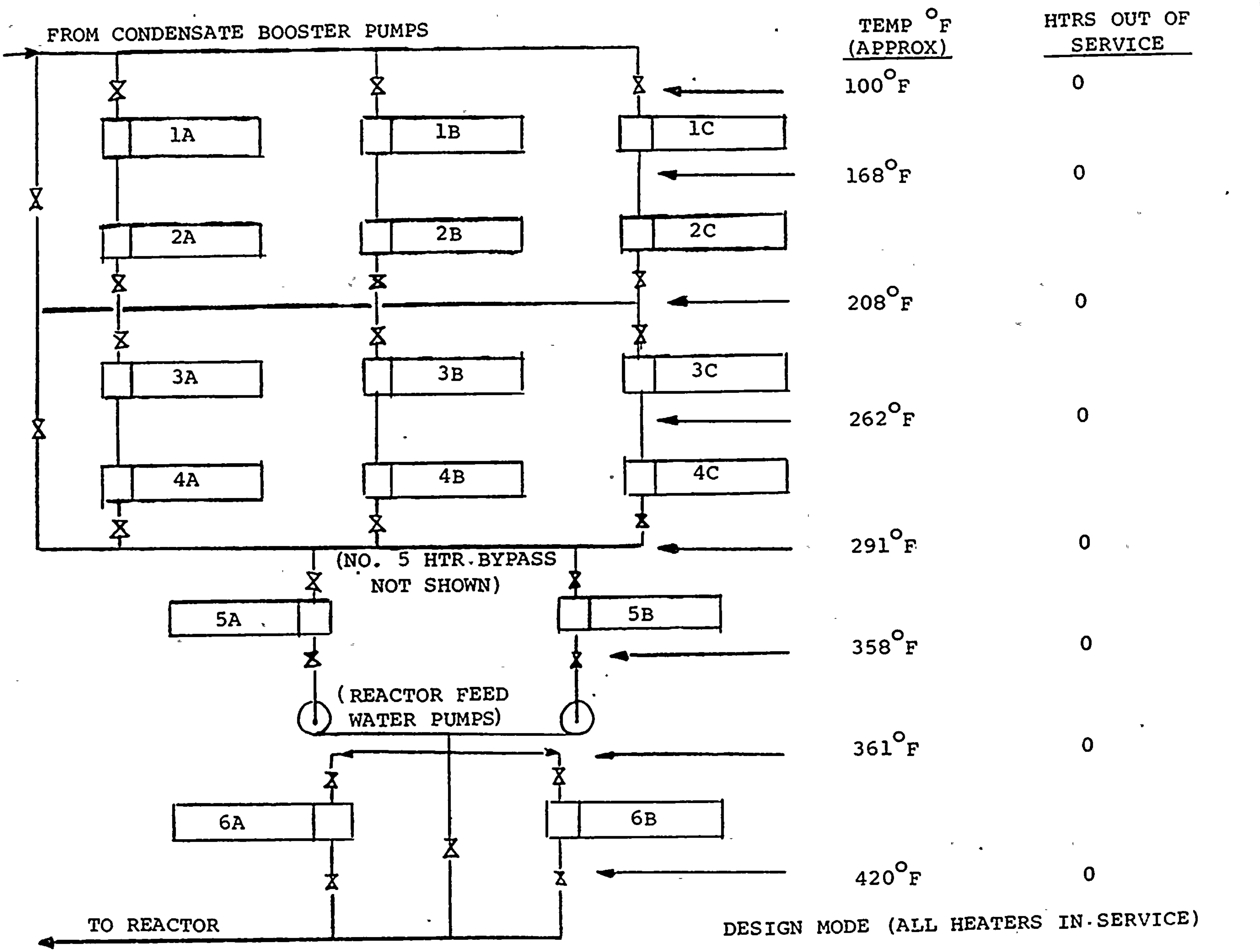

FIGURE
211.
087-1

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Q. 211.088
(15.2)

In your evaluation of the generator load rejection transient, you assume 0.15 seconds for the full stroke closure time of the turbine control valve and state that it is conservative compared to an actual closure time of 0.2 seconds. However, in Table 15.2-2 of the FSAR, you indicate that the turbine control valves close in 0.07 seconds. Explain this apparent discrepancy. Additionally, the pressure peaks caused by closure times from the partially open to the fully closed position are not addressed in the FSAR. For full-stroke closure, the closure time you assume appears to be conservative in light of the information in the FSAR. However, for operation in the full arc (i.e., full throttling) mode, the closure times may be significantly less than 0.15 seconds for typical cases where the control valves are only partially open. We have two concerns with respect to this particular transient. Our first concern is that the minimum closure times for part-stroke may be less than those you assumed in your analysis. Our second concern is that your analysis, which is based on initial conditions which include 105 percent, nuclear boiler rated, steam flow and the control valves wide open, may result in a less conservative evaluation than the initial conditions at a somewhat lower power with the control valves partially open. Accordingly, demonstrate that control valve closure times smaller than 0.15 seconds do not result in unacceptable increases in the MCPR and in the reactor peak pressure. Alternatively, either provide justification that shorter closure times cannot occur or indicate a minimum closure time to be incorporated into the WNP-2 Technical Specifications.

Response:

In the evaluation of the generator load rejection transient as shown in 15.2-2, the closure characteristics of the turbine control valves are assumed such that the valves operate in the full arc mode and have a full stroke closure time, from fully open to fully closed, of 0.15 seconds. So Table 15.2-2 shows that turbine control valves close in 0.07 seconds, since the turbine control valves are initially partially open.

Sensitivity study shows that the most severe initial condition for this transient is when the reactor operates at 105% NBR steam flow with the assumption of full arc operation, since the pressurization rate is higher at higher initial power level.

Other sensitivity study shows that turbine control valve closure times smaller than the assumed 0.15 seconds do not result in unacceptable increase in CPR and reactor peak pressure. For example, if the turbine control valve closure time is 0.10 seconds, the peak surface heat flux would increase by $\sim$1%, peak reactor pressure $\sim$1 psi. Since this transient is not the most limiting transient, which determines the operating CPR limit, the turbine control valve closure time will not affect the operating CPR limit.

Q. 211.089
(15.1.1)

For the transient resulting from a loss of feedwater heating while in the manual flow control mode, the thermal power monitor (TPM) is used to scram the reactor. Explain the need for the TPM and indicate the specific transients for which this trip signal initiates a reactor scram. Describe the surveillance testing of the TPM which will be incorporated into the WNP-2 Technical Specifications.

Response:

If there were no high thermal power trip scram design available in the WNP-2 plant design, reactor scram during the loss of feedwater heating transient would occur when the neutron flux exceeds the high APRM flux scram setpoint. Usually, the high APRM flux scram setpoint is higher than the high thermal power scram setpoint by approximately 3-6%. Therefore, the loss of feedwater heating transient would be more severe without the high thermal power trip scram design. This would lead to higher operating CPR limit and reduce the flexibility of plant operation.

TPM scrams are applicable to those transients associated with slow neutron flux increases. One such transient would be the loss of feedwater heating (see the response to Question 211.087).

The surveillance testing of TPM will be defined in WNP-2 Technical Specifications. Typical wording is illustrated in the attached sections from the Standard Technical Specifications.*

*The Technical Specifications are under development and the attached is for information only.

POWER DISTRIBUTION LIMITS

3/4 2.2 APRM SETPOINTS

LIMITING CONDITION FOR OPERATION

3.2.2 The APRM flow biased simulated thermal power-upscale scram trip setpoint (S) and flow biased simulated thermal power-upscale control rod block trip setpoints (S_{RB}) shall be established according to the following relationships:

$$S \leq (0.66W + (54)\%)\ T$$
$$S_{RB} \leq (0.66W + (42)\%)\ T$$

where: S and S_{RB} are in percent of RATED THERMAL POWER,
W = Loop recirculation flow in percent of rated flow,
T = Lowest value of the ratio of design TPF divided by the MTPF obtained for any class of fuel in the core, T greater than or equal to 1.0, and

Design TPF for 8x8 fuel = (2.43).

APPLICABILITY: OPERATIONAL CONDITION 1, when THERMAL POWER is greater than or equal to (25)% of RATED THERMAL POWER.

ACTION:

With the APRM flow biased simulated thermal power-upscale scram trip setpoint or the flow biased simulated thermal power-upscale control rod block trip setpoint less conservative than S or S_{RB}, as above determined, initiate corrective action within 15 minutes and restore S and S_{RB} to within the required limits within 2 hours or reduce THERMAL POWER to less than (25)% of RATED THERMAL POWER within the next 4 hours.

SURVEILLANCE REQUIREMENTS

4.2.2 The MTPF for each clas of fuel shall be determined, the value of T calculated, and the flow biased scram and control rod block trip setpoints verified to be within the above limits or adjusted, as required:

a. At least once per 24 hours,

b. Within ( ) hours after completion of a THERMAL POWER increase of at least 15% of RATED THERMAL POWER, and

c. Initially and at least once per 12 hours when the reactor is operating with MTPF greater than or equal to (2.43).

TABLE 3.3.1-1

REACTOR PROTECTION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	APPLICABLE OPERATIONAL CONDITIONS	MINIMUM OPERABLE CHANNELS PER TRIP SYSTEM (a)	ACTION
1. Intermediate Range Monitors:			
a. Neutron Flux - Upscale	2, 5(b)	3	1
	3, 4	2	2
b. Inoperative	2, 5(b)	3	1
	3, 4	2	2
2. Average Power Range Monitor:			
a. Neutron Flux - Upscale	2, 5(b)	2	1
	3, 4	2	2
b. Flow Biased Simulated Thermal Power - Upscale	1	2	3
c. Neutron Flux - Upscale	1	2	3
d. Inoperative	1, 2, 5(b)	2	4
e. LPRM	1, 2, 5	(c)	NA
3. Reactor Vessel Steam Dome Pressure - High	1, 2(d)	2	5
4. Reactor Vessel Water Level - Low, Level 3	1, 2	2	5
5. Main Steam Line Isolation Valve - Closure	1(e)	4	3
6. Main Steam Line Radiation - High	1, 2(d)	2	6
7. Primary Containment Pressure - High	1, 2(f)	2	5

211.089-3

TABLE 4.3.1.1-1

REACTOR PROTECTION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION[a]	OPERATIONAL CONDITIONS IN WHICH SURVEILLANCE REQUIRED
1. Intermediate Range Monitors:				
a. Neutron Flux - Upscale	S/U[c], S	S/U[b]	R	2
	S	W	R	3, 4, 5
b. Inoperative	NA	W	NA	2, 3, 4, 5
2. Average Power Range Monitor:				
a. Neutron Flux - Upscale	S/U[c], S	S/U[b], W	SA	2
	S	W	SA	3, 4, 5
b. ~~Flow Biased Simulated Thermal Power - Upscale~~	~~S~~	~~S/U[b], W~~	~~W[d][e], SA~~	~~1~~
c. Neutron Flux - Upscale	S	S/U[b], W	W[d], SA	1
d. Inoperative	NA	W	NA	1, 2, 5
e. LPRM	S	NA	(f)	1, 2, 5
3. Reactor Vessel Steam Dome Pressure - High	NA	M	Q	1, 2
4. Reactor Vessel Water Level - Low, Level 3	S	M	R	1, 2
5. Main Steam Line Isolation Valve - Closure	NA	M	R	1
6. Main Steam Line Radiation - High	S	W[g]	R[h]	1, 2
7. Primary Containment Pressure - High	NA	M	Q	1, 2

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TABLE 3.3.1-2

REACTOR PROTECTION SYSTEM RESPONSE TIMES

FUNCTIONAL UNIT	RESPONSE TIME (Seconds)
1. Intermediate Range Monitors:	NA
a. Neutron Flux - Upscale	NA
b. Inoperative	
2. Average Power Range Monitor*:	
a. Neutron Flux - Upscale	NA
b. Flow Biased Simulated Thermal Power - Upscale	$\leq$ (0.09**)
c. Fixed Neutron Flux - Upscale	$\leq$ (0.09)
d. Inoperative	NA
e. LPRM	NA
3. Reactor Vessel Steam Dome Pressure - High	$\leq$ (0.55)
4. Reactor Vessel Water Level - Low, Level 3	$\leq$ (1.05)
5. Main Steam Line Isolation Valve - Closure	$\leq$ (0.06)
6. Main Steam Line Radiation - High	NA
7. Primary Containment Pressure - High	NA
8. Scram Discharge Volume Water Level - High	NA
9. Turbine Stop Valve - Closure	$\leq$ (0.06)
10. Turbine Control Valve Fast Closure, Trip Oil Pressure - Low	$\leq$ (0.08)#
11. Reactor Mode Switch in Shutdown Position	NA
12. Manual Scram	NA

*Neutron detectors are exempt from response time testing. Response time shall be measured from the detector output or from the input of the first electronic component in the channel. (This provision is not applicable to Construction Permits docketed after January 1, 1978. See Regulatory Guide 1.18, November 1977.)

(**Not including simulated thermal power time constant.)

#Measured from start of turbine control valve fast closure.

Q. 211.090
(15.4)

Provide assurance that the plots of pressure with time in Section 15 of the FSAR are consistent with the initiation logic for the SRVs. For example, you may have modified the safety/relief system to prevent subsequent reopening of these valves during transients involving an increase in the reactor pressure to satisfy your present design bases for pool dynamic loads in the containment.

Response:

The plots of pressure with time in Chapter 15 of the FSAR are indeed consistent with the initiation logic for the SRVs. If changes to accommodate the Low-Low Set design are made in the future, the transient analyses will be revised accordingly. Currently, this feature is not necessary on WNP-2.

Q. 211.091
(15.4.5)

Provide the initial operating MCPR determined at 56 percent of rated power (nuclear boiler) and 36 percent of the core flow for the postulated failure of the recirculation flow control system while undergoing an increasing flow transient. In addition, provide the K_f* factors as a function of the core flow for both the automatic and manual flow control modes of operation. Provide the maximum flow control setpoint calibration limit (e.g., 100 percent or 105 percent of rated flow) for the recirculation loop flow control valves used in the transient analysis. Additionally, we note that you reference the GE topical report, NEDO-10802, for the dynamic model which you used to simulate this event. However, NEDO-10802 does not describe the complete event. Accordingly, discuss in greater detail the overall method you used to calculate the change in the CPR.

Response:

The initial operating MCPR at 56% of nuclear boiler rated power and 36% of core flow is 1.54.

A plot of the K_f factor vs. core flow appears on the attached figure. The mode of operation (automatic or manual) of the recirculation flow control system has no impact upon the K_f curve.

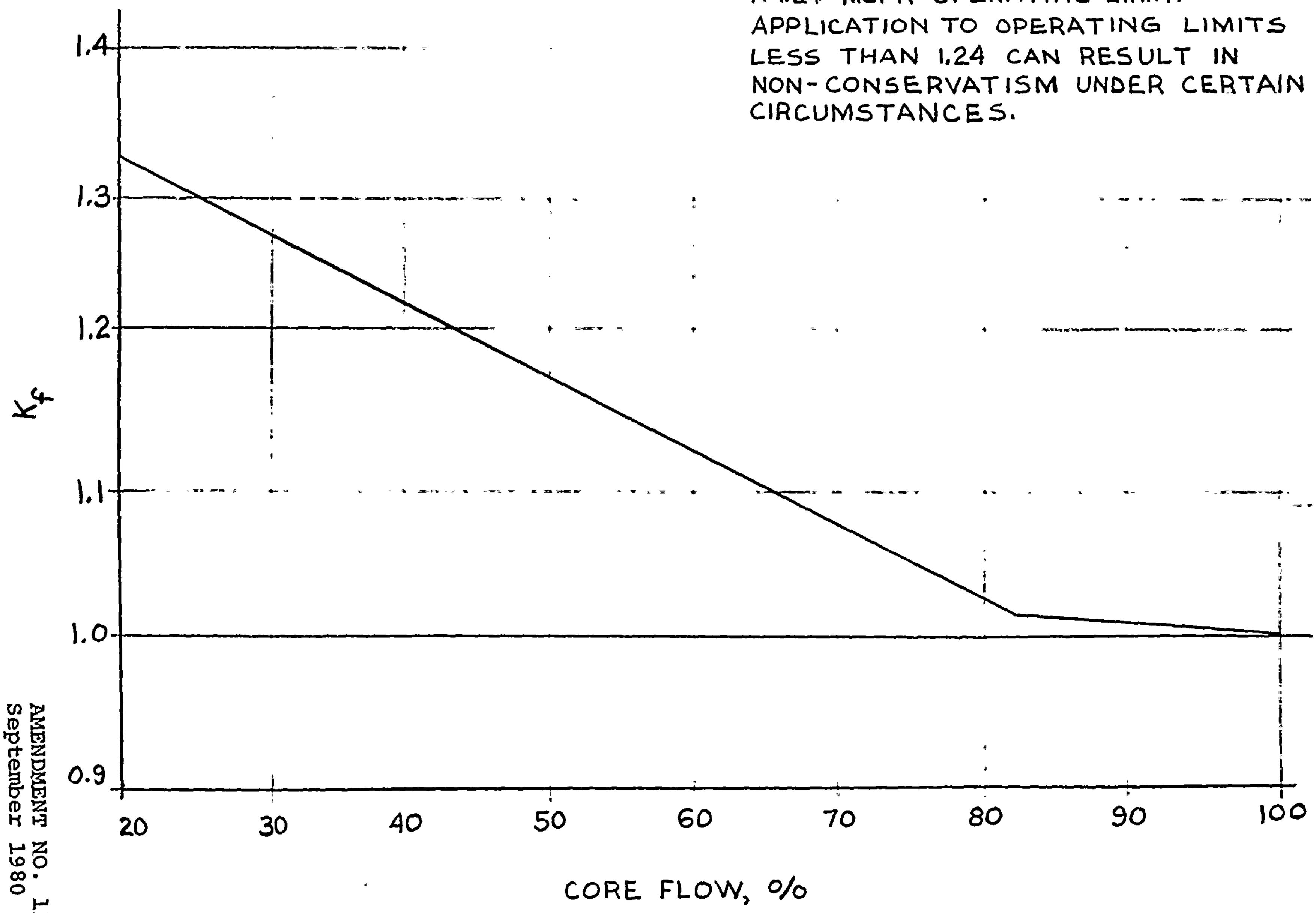
The K_f curve for WNP-2 is based upon 114% maximum flow. The maximum flow will be limited to a value of 102.5% maximum. Therefore, the K_f curve is conservative.

The method of calculating the change in CPR is described in the General Electric BWR Thermal Analysis Bases (GETAB): data, correlation and design application, NEDO-10958A.

*K_f is defined as the ratio of the MCPR at a given reactor coolant flow rate to the MCPR at 100% power (i.e., 1.20).

NOTE:

THIS CURVE WAS DEVELOPED BASED ON A 1.24 MCPR OPERATING LIMIT. APPLICATION TO OPERATING LIMITS LESS THAN 1.24 CAN RESULT IN NON-CONSERVATISM UNDER CERTAIN CIRCUMSTANCES.



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WASHINGTON PUBLIC POWER SUPPLY SYSTEM
NUCLEAR PROJECT NO. 2

K_f FACTOR VS. CORE FLOW

FIGURE 211.091-1

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Q. 211.092
(15.3.3)

In Table 15.3-5 of the FSAR, you take credit for non-safety-grade equipment to terminate the postulated accident involving seizure of the recirculation pump. However, it is our position (refer to Section 15.3.3, Revision 1, NUREG-75/087 of the Standard Review Plan) that only safety-grade equipment can be used and that the required safety functions must be accomplished assuming the worst single failure of an active component. Accordingly, reevaluate this accident with the specific criteria cited above. Indicate the resulting change in the CPR and the percentage of fuel rods which would be in boiling transition for this postulated accident.

Response:

The recirculation pump seizure event was reclassified as an accident with the introduction of the General Electric BWR Thermal Analysis Basis Report (NEDO-10958-A) because of the highly unlikely nature of this event. The FSAR analysis assumes that the attendant water level swell will cause a high level (L8) trip thereby shutting down the main turbine and feed pump turbines, and indirectly initiating scrams as a result of the main turbine trip. The FSAR analysis also explains (15.3.1.2.3.2 as referenced in 15.3.3.2.3) that a turbine trip can eventually occur even in the event of failure of the non-single failure proof turbine trip signal circuitry. Pump seizure event analyses have shown that, although coolant flow rate drops rapidly, MCPR does not decrease significantly before fuel surface heat flux begins dropping enough to restore greater thermal margins as the plant intrinsically responds to the reduced flow rate. The potential effects of the hypothetical pump seisure "accident" are very conservatively bounded by the effects of the DBA-LOCA.

This is easily verified by consideration of the two events. In both accidents, the recirculation driving loop flow decreases extremely rapidly. In the case of seizure, stoppage of the pump occurs; for the DBA-LOCA, the severance of the line has a similar, but more rapid and severe influence. Following a pump seizure event, water level is maintained, the core remains submerged, and this provides a continuous core cooling mechanism. However, for the DBA-LOCA complete flow stoppage occurs and water level decreases due to loss of coolant, thus resulting in uncovery of the reactor core and subsequent overheating of the fuel rod cladding. Also, complete depressurization occurs with the DBA-LOCA, while reactor pressure does not significantly decrease for the pump seizure event. Clearly, the increased temperature of the fuel cladding and the reduced reactor pressure for the DBA-LOCA both combine to yield a much more severe stress and potential for cladding perforation for the DBA-LOCA than for the pump seizure. Therefore, it is concluded that the potential effects of the hypothetical pump seizure accident are very conservatively bounded by the effects of the DBA-LOCA and a specific core performance analysis or radiological evaluation is not considered necessary. However, to be completely responsive to the NRC question, the following narrative is provided to show the impact of not taking credit for non-safety grade equipment to terminate this event:

a. Level 8 Turbine Trip

The FSAR analysis of the pump seizure event assumes that the vessel water level swell due to pump seizure will cause high water level (Level 8) trips of the main turbine and the feedwater pumps, and indirectly initiates a reactor scram as a result of the turbine trip. The FSAR (15.3.1.2.3.2 referenced by 15.3.3.2.3) discusses the Level 8 trip function and shows that a turbine trip will eventually occur even in the event of failure of the non-single failure proof turbine trip signal circuitry. In the case of the pump seizure without an L8 trip, the event is less severe than the analysis in the FSAR with the L8 trip for the following reason: A pump seizure, should it occur, would result in core flow reduction which reduces the core power and surface heat flux due to the effect of the negative void reactivity coefficient. Hence, the surface heat flux existing when the turbine trip occurs is lower because the turbine trip occurs later. Therefore, a loss of Level 8 trip would result in a less severe event consequence from the fuel than that depicted in 15.3.1.2.

b. Main Turbine Bypass System

As a result of the NRC's concern respecting reactivity effects of pressure transients, GE and the NRC met on November 20 and 21, 1978 for a comprehensive review of turbine trip and load reject transients without bypass. The principal conclusion of that meeting was that the most limiting BWR transient event which takes credit for non-safety-grade equipment is the feedwater controller failure. Analysis indicates that a CPR increase of approximately 0.08 applies to this transient without a functioning main turbine bypass system.

For recirculation pump seizure with a failure of turbine bypass system, the increase of ΔCPR would be less than that for the feedwater controller failure for the following reason. As this event occurs, the reactor power drops significantly within the first 2 seconds due to decreased core flow. Therefore, by the time of turbine trip, the reactor power is at a low level. The core power is the main parameter which relates to the fuel thermal limit. The effect of failure of the main turbine bypass system to stop the steam flow retains pressure on the core but contributes only a small positive reactivity feedback. This is a secondary effect of much less significance than the reactivity decrease due to fluid flow decreasing through the core.

The increase of core power is more severe for feedwater controller failure (increasing) event than for a recirculation pump failure because it occurs at a higher power level.

c. Relief Function of Safty/Relief Valves

The contribution of MCPR for taking credit for the relief function rather than the safety function of safety/relief valves is not significant because the MCPR always reaches its lowest value before opening of the relief valves.

Analyses of recirculation pump seizure where coolant flow rate drops rapidly have shown that MCPR does not decrease significantly before fuel surface heat flux begins dropping enough to restore greater thermal margins as the plant intrinsically responds to the reduced flow rate. The effect of not taking credit for non-safety-grade equipment is a ΔCPR increase of 0.08. Therefore, the MCPR for pump seizure event is still well above the safety limit of 1.06.

In addition, the non-safety-related equipment used in the analysis (L8 trip/turbine bypass system) has been made more reliable based on Technical Specification surveillance. See the response to Question 211.086.

Q. 211.093
(15.1.2)

For the transient resulting from a postulated failure of the water controller during maximum flow demand, you indicate a feedwater flow of 146 percent in Table 15.1-3 of the FSAR. However, you indicate in Section 15.1.2.3.2 that the feedwater flow is 135 percent for the maximum flow setting in simulating this transient. Clarify this apparent discrepancy.

Response:

Section 15.1.2.3.2 has been revised to state that 146 percent feedwater runout flow will occur at 1020 psig.

Q. 211.094
(15.1.2)

When a sudden increase in feedwater flow occurs, there will be a corresponding drop in the feedwater temperature which contributes to the reactivity increase during the first part of this transient. For example, the combination of a drop in the feedwater temperature and a smaller maximum flow rate could cause a Level 8 trip with the surface heat flux close to the flux scram setpoint. If you have assumed that the feedwater temperature into the reactor vessel has remained constant, reanalyze this transient to include the effect of the variation in the feedwater temperature on the MCPR. Provide your basis for determining the time variation in the feedwater temperature in the reactor vessel. Demonstrate that a smaller increase in the feedwater flow rate than the one you analyzed, in conjunction with the change in feedwater temperature, does not result in a lower MCPR.

Response:

It is true that there will be a drop in the feedwater temperature with an increase in feedwater flow. However, the feedwater heater usually has a large time constant (in minutes, not in seconds) so the feedwater temperature change is very slow. In addition, there is a long transport delay time before the cold feedwater reaches the vessel. Therefore, it is expected that the feedwater temperature change during the first part of the feedwater controller failure (maximum demand) transient is insignificant, and its effect on the transient severity is minimal.

Q. 211.095
(15.1.4)

In your analysis of an inadvertent opening of an SRV in Section 15.1.4.2.1.1 of the FSAR, you state that a plant shutdown "should" be initiated if the valve cannot be closed. Indicate how much time the operator has to initiate plant shutdown before exceeding the proposed WNP-2 Technical Specification limits for the suppression pool temperature.

Response:

The operator will have the time period between the valve first sticking open and the bulk pool temperature reaching 110°F before he must scram the reactor to be in compliance with the Technical Specifications.

If it is assumed that the suppression pool is at its maximum operating temperature and minimum operating volume with no pool cooling systems in operation when the valve first opens, the operator will have more than 8.7 minutes before the pool scram temperature of 110°F is reached. If the above worst case assumptions were relaxed, the time for operator action would be increased.

Q 211.096
(15.2.6)

You indicate in your analysis of the transient resulting from a postulated loss of off-site power that closure of the MSIV's occurs a 30 seconds after the start of the transient due to a loss of condenser vacuum. Our concern in this matter is that the MSIV's may close at an earlier time in the transient, thereby causing higher system pressures than your analysis indicates. Apparently, you take credit for operation of the MSIV air accumulator since the normal air supply to the MSIV's would trip at the start of this particular transient. Discuss the design provisions incorporated into the WNP-2 facility which prevent closure of the MSIV's any earlier than 30 seconds after the start of this transient. Additionally, discuss your verification testing which will demonstrate that the MSIV performance assumed in your analysis will be achieved.

Response:

Section 15.2.6 has been reanalyzed and revised to take into consideration that reactor scram and MSIV closure are initiated at two seconds due to loss of power to the scram and MSIV solenoids. This applies to both loss of auxiliary power transformers transient and loss of all grid connections transient. Two seconds is assured due to the inertia of the RPS MG set flywheels which provide power in addition to the division 1 and 2 power to the MSIV solenoids. See the response to Question 211.097. Also, the pertinent items in Table 15.0-1 are revised accordingly. During the startup test program a generator load rejection/loss of all grid connections test will be performed to verify proper plant response in comparison to analysis assumptions. Equipment modification, retest, or a revised analysis will be performed if necessary if performance requirements are not met.

Q. 211.097
(6.3)

We have a similar concern to that stated above regarding the potential for MSIV closures times that may be shorter than those assumed in your analyses of the transient resulting from a loss of off-site power since this loss of power could generate an isolation signal that would close the MSIVs. Indicate the sources of electrical power for the MSIV isolation logic and the isolation actuators. State whether these power sources would be available following a loss of off-site power. Indicate whether the MSIV isolation logic and the isolation actuators could fail in a manner which would initiate an MSIV isolation signal on loss of off-site power.

Response:

The MSIV isolation logic and one air pilot valve solenoid for each MSIV (actuators) receive electrical power from the Reactor Protection System (RPS) motor/generator set buses and the second air pilot valve (actuators) for each MSIV receive power from division 2 and 1 power panels in the following arrangements:

> Isolation Logics "A" and "C" and one pilot solenoid for MSIV (inboard) receive electrical power from RPS bus "A." The second pilot solenoid for MSIV (inboard) receives electrical power from a division 2 power panel P8AA. Isolation logic "B" and "D" and one pilot solenoid for MSIV (outboard) receive electrical power from RPS bus "B." The second pilot solenoid for MSIV (outboard) receives electrical power from a division 1 power panel P7AA.

As a result of this power supply configuration, an MSIV closure will not result from the loss of power to a single RPS bus. However, a complete loss of off-site power will result in loss of both RPS buses and an MSIV closure after the RPS motor generators voltage drops. (Approximately 4 to 5 seconds).

The logic and actuators are powered in such a manner that loss of power to a single logic channel or pilot solenoid group (i.e., blown fuse, open circuit or ground) will not cause an MSIV closure.

The RPS buses are powered from the standby power system and would be available following a loss of off-site power since diesel generator power becomes available in approximately 10 seconds.

See the response to Question 211.096 for the significance of these response times.

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Q. 211.098
(15.0)

We are concerned that operation of the WNP-2 facility with partial feedwater heating might occur during routine maintenance or as a result of a decision of your part to operate with a lower feedwater temperature near the end of a fuel cycle. Demonstrate that this mode of operation will not result in: (1) maximum reactor vessel pressures greater than those obtained using the assumptions in Section 5.2.2 of the FSAR; or (2) a more limiting change in the MCPR than would be obtained with the assumptions used in Section 15.0. Provide the basis for the maximum reduction in feedwater heating considered in your response to this item (e.g., the specific limitations on the turbine operation).

Response:

There are two distinct periods of concern when operating with reduced feedwater temperature. Reducing the feedwater temperature before rated EOC will result in less severe transients. The peak pressures will be lower due to the reduced steam production. The delta CPRs will be smaller due to a stronger scram caused by additional insertion of the control rods to keep the reactor power within licensed limits and a less negative dynamic void coefficient.

Operating with reduced feedwater temperature after rated EOC is the other period of concern. The issuance of Amendment 77 to the WNP-2 operating license allows for operation with final feedwater temperature reduction and subsequent thermal coastdown to 65 per cent power in order to extend the operating cycle. NRC acceptance of the analysis supporting this operation is provided in the Safety Evaluation Report issued in support of the amendment.

Q. 211.099
(7.5)

Since systems such as the HPCS, HPCI, and RCIC are initially aligned to draw coolant water from the CST and switch to the suppression pool following a signal indicating a low water level in the CST, it is our position that the CST water level should be included in Table 7.5-1 of the FSAR, entitled "Safety-Related Display Instrumentation." Accordingly, add the signal indicating low water level in the CST in Table 7.5-1. Alternatively, justify its omission.

Response:

WNP-2 design includes an indication of condensate storage tank level in the control room meeting the requirements of Regulatory Guide 1.97, Revision 2. This indication is described in 7.5 and included in Table 7.5-1 to discuss the requirements of Regulatory Guide 1.97.

Q. 211.100
(7.5)

Identify which parameters are used to monitor the plant conditions following an accident and which are input to the safety-related display instrumentation shown in Table 7.5-1 of the FSAR.

Response:

A complete description of WNP-2 post-accident monitoring instrumentation and its compliance with Regulatory Guide 1.97, Revision 2, has been provided in FSAR 7.5 and Table 7.5-1. Also, as indicated in 7.5.1.1, Table 7.5-1 identifies which parameters are used to monitor plant conditions following an accident. The parameters are listed under the Design Criteria heading of the table.

Q. 211.101
(7.5)

In Table 7.5-1 of the FSAR, you identify the range of the instrument which monitors the reactor vessel pressure to be from 0 to 1500 psig. Since the design pressure of the reactor coolant pressure boundary is 1250 psig, justify the upper bound of this instrument range in light of the potential transients and accidents that may cause large pressure excursions (i.e. ATWS).

Response:

The reactor pressure instrument range of 0 to 1500 psig is prudent for this device. This range envelopes the anticipated pressure transients while providing adequate resolution at mid-instrument range for normal operating conditions. The range also envelopes adequately postulated large pressure excursions due to potential transients and accidents (i.e. ATWS) since the maximum pressure encountered for any of these events is less than 1250 psig (See 15.8) for a short duration (usually less than 20 seconds). This conclusion is also true considering the turbine trip without bypass event.

REFERENCES

1. NEDE-24222, "Assessment of BWR Mitiation of ATWS, Volume II," December 1979.

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Q. 211.102
(7.4.1)

Provide display instrumentation indicating the water level in the CST on the remote shutdown control panel. You state in the FSAR that the RHR flow indicator will be located on the remote shutdown panel. Verify that flow indication will be provided for both RHR systems (i.e., A and B) and that the flow range will be the same as that shown in Table 7.5-1 of the FSAR.

Response:

Indication of CST water level on the remote shutdown panel is not necessary. Vessel inventory make-up requirements during a remote shutdown event are low and with a 135,000 gallon minimum CST inventory requirement, sufficient make-up capability exists for the length of time RCIC may be used.

The Remote Shutdown System is not required to meet single failure criteria. For this reason only the RHR B Loop controls exist on the remote shutdown panel. Flow indication for the B Loop is provided on this panel and the flow range is the same as that shown in Table 7.5-1, i.e., 0-10,000 gpm.

Q. 211.103
(9.2.7)

In Table 9.2-5 of the FSAR, you show a flow rate of 7400 gallons per minute (gpm) from the standby service water system to the RHR heat exchanger. This flow rate is based on an inlet temperature of 95°F. However, in Section 5.4.7.2.2, the service water side flow rate of 7400 gpm to the RHR heat exchanger is based on a rated inlet temperature of 85°F. Explain this apparent discrepancy. Additionally, demonstrate that you have adequately selected the required flow rates for the standby service water system for heat load removal from the ECCS pumps as shown in Table 9.2-5 of the FSAR. Provide justification for these flow rates, including a list of the design duty heat loads for the equipment identified in Table 9.2-5.

Response:

Section 5.4.7.2.2 is in error and has been revised to indicate an inlet SW temperature to the RHR heat exchangers of 95° Fahrenheit. It should be noted that although the SW maximum design temperature is 85° Fahrenheit, several components, including the diesel-generators annd portions of the ECCS systems as indicated in Table 9.2-5 were designed to 95° Fahrenheit. This higher design temperature adds additional conservatism to the system. Also Table 9.2-5 has been revised to include the calculated and design duty heat loads for the standby service water cooled equipment. The standby service water flow rates for the ECCS pumps and all other equipment listed in Table 9.2-5 are the manufacturers' recommendations based on the standby service water temperature listed in Table 9.2-5. The flow rates for the RHR pump seals are set by the shutdown cooling mode which initially has a process fluid temperature of 358°F.

Q. 211.104
(9.2)

Provide a table listing the standby service water, system cooling duty loads as a function of the time intervals listed below following a postulated DBA. In this table, indicate the operating status of the appropriate safety-related equipment (e.g., the RHR pumps, the RHR heat exchangers, the CS pumps, the ADS valves, and the RCIC). The time intervals for this tabulation shoudl be: (1) 0 to 10 minutes; (2) 10 to 30 minutes; (3) 30 minutes to 6 hours; (4) 6 hours to 24 hours; and (5) 24 hours to 30 days.

Response:

Table 9.2-8 and revised Table 9.2-9 and Figures 9.2-7b, 9.2-7c and 9.2-7d list all the loads to the service water system. Table 9.2-8 lists the heat rates and Table 9.2-9 lists the intergrated heat loads.

The ADS will automatically actuate unless reset by the control room operator at 120 seconds into a DBA. However, by 2 minutes into the accident, the vessel will already be fully depressurized (see Figure 6.3-21b for RPV pressure vs. time curve). The energy addition to the suppression pool by the ADS is accounted for in Tables 9.2-8 and 9.2-9.

The RCIC system does not operate following a DBA as discussed in note 32 of Table 6.2-16.

Q. 211.105
(3.9.1)

Provide the following information related to the contents of Table 3.9-1 of the FSAR. This table shows the number of plant cycles or events considered for the reactor assembly design and fatigue analysis.

a. Discuss the events contained in Item i for normal, upset and testing conditions and relate these to the transients analyzed in Chapter 15 of the FSAR. In particular, discuss the following events:

(1) The number of cycles (i.e., eight cycles) for the 40 year life of the WNP-2 facility shown in Table 3.9-1 of the FSAR (i.e., Item i.4) for a single safety or relief valve blowdown for upset conditions, appears to be low. Specifically, we note that Table 15.0 of the FSAR indicates that these valves will lift for a variety of transient events and that more than one valve will blow down. Accordingly, provide justification for your design basis of eight cycles.

(2) Clarify whether the loss of feedwater pumps in Item i.3 is due to MSIV closure or whether both of these events occur independently. For either case, the number of cycles (i.e., ten cycles) which you state for the 40-year life of the WNP-2 facility, appears to be low. In particular, since a number of transients can cause a trip of the feedwater pumps and close the MSIVs, more than ten events causing the above conditions can be anticipated throughout the plant lifetime. Accordingly, justify your design basis of ten cycles for this event.

b. Indicate whether Item 1(2) for emergency conditions in Table 3.9-1 of the FSAR is the automatic blowdown feature related to the ADS function.

c. Explain Item 1(2) for emergency conditions and relate it to your analysis in Sections 5.2.2 or 15.0 of the FSAR. Justify your omission of the event in which the reactor is overpressurized, there is a scram initiated by a high flux signal and the isolation valves stay closed under "emergency conditions."

Response:

a. The scram events listed occur from various causes as follows:

Turbine Generator Trip, Feedwater On, Isolation Valves Stay Open - 40 Cycles

These events correspond to the "Generator Load Rejection -Turbine Control Valve (TCV) Fast Closure" and "Turbine Trip" described in Chapter 15 without other failures assumed, such as bypass failure. The same condition with bypass failure is included with the "Loss of Feedwater Pump" scram events.

Loss of Feedwater Pumps, Isolation Valves Closed - 10 Cycles

These are composite events which assume "Generator Load Rejection With Bypass Valve Failure" or "Main Steam Isolation Valve Closure", coupled with a "Loss of Auxiliary Power" which are all described in Chapter 15.

Single Safety or Relief Valve Blowdown - 8 Cycles

These are complete reactor depressurization cycles due to the failure of safety, relief, or turbine bypass valves to reclose automatically after pressure has dropped below its design setting.

1. The specified 8 valve blowdowns are based on reliability studies which considered the failure rates of such valves to close as intended after actuation, and the number of valves, and the expected number of valve actuations. The valve lifts in Table 15.0 include the larger number of actuations which are expected to occur where the valves function normally without completely depressurizing the reactor.

2. As noted in the "Loss of Feedwater Pump, Isolation Valve Closed" event described above, the simultaneous occurrence of feedwater pump trip is but one effect of loss of auxiliary power and reactor isolation. The effects of feedwater pump trip are included,

where appropriate, in all other scram situations. Feedwater pump trip may also cause a scram due to low water level, which is included in the "Other Scram" category.

b. Item a.2 is related to the ADS function. It assumes a complete reactor depressurization due to unintended operation of the ADS system or an assumed failure of several safety or relief valves to reclose automatically at their reset pressure.

c. The "Reactor Overpressure With Delayed Scram" event assumes closure of main turbine admission valves assuming that scram is delayed so that power and pressure are initially limited by safety valve operation and reactor recirculation pump trip. A similar condition is discussed in 15.8.7 "Anticipated Transient Without Scram (ATWS)." This delayed scram event results in more severe pressure and power transient conditions than a "Flux Scram with Isolation Valve Closure" which is conservatively considered to be an "Upset Condition" covered under the "Loss of Feed Pump, Isolation Valves Closed" event discussed under a. above.

Q. 211.106
(15.0)

Provide the correct units (or value) for the recirculation pump trip inertia for Item 32 of Table 15.0-2 of the FSAR.

Response:

Table 15.0-2 has been modified.

Q. 211.107

The NRC changed this question number to 010.037.

Q. 211.108

The NRC changed this question number to 010.038.

Q. 211.109

The NRC changed this question number to 010.039.

Q. 211.110
(5.2.2)

The notations, "251 BWR/5-MSIV, 14¢/% Void Coefficient" on Figures 5.2-4 and 5.2-5 indicate that these figures may be generic and not specifically for WNP-2. Confirm that these figures are applicable to WNP-2. If these curves are not applicable to WNP-2, complete the necessary analyses to provide data similar to that now presented on Figures 5.2-4 and 5.2-5.

Response:

Figures 5.2-4 and 5.2-5 are not generic but do apply to WNP-2 and several other BWR/5 projects. The void reactivity coefficient of 14¢/% is a bounding value which is conservatively applied to the overpressure protection analysis. These figures have been changed to reflect their applicability to WNP-2.

Q. 211.111
(5.2.2)

Article NB-7200, Overpressure Protection, of the ASME Boiler and Pressure Vessel Code, Section III, requires that an overpressure protection report be provided. No overpressure report could be found in the FSAR. Provide this report.

Response:

Five copies of the Overpressure Protection Report are submitted via separate transmittal. The report is virtually reproduced verbatim in 5.2.2 of the FSAR. The response to Question 211.049 addresses the commitment to update this report to conform to a more recent analytical model (ODYN code) and to accouunt for recirculation pump trip. The Supply System committed to reperform the applicable limiting transients in the response, and to update the FSAR.

Q. 211.112
(5.2.2)

Section 5.2.2.4.2.1 of the FSAR states that cyclic testing has demonstrated that the safety/relief valves are capable of at least 60 actuation cycles between required maintenance. Will the actuations of the safety/relief valves be recorded? If so, how will these data be recorded and reported to NRC?

Response:

Our response to TMI requirement II.K.3.3, FSAR Appendix B, commits to implementing an administrative procedure for reporting all safety/relief valve failures promptly and all SRV challenges annually.

Q. 211.113
(5.2.2)

It would appear that improper setpoints would be a credible common mode failure which could result in degradation of the pressure relief systems. Show that adequate safety margin has been included in the overpressurization analysis to protect against a common mode failure of the safety/relief valves to open at the prescribed values.

Response:

The overpressure protection analysis has been performed with numerous conservative input values (low scram reactivity, high void reactivity, no relief valve actuation, high spring setpoint, etc.) and still shows a significant margin to the vessel code limit of 1375 psig. This margin is about 80 psi with a high flux scram (assuming failure of the direct position scram) and thus would allow for a significant deviation in the spring setpoint.

In addition, there is significant conservatism in the spring setpoint assumed in the analysis.

As stated in the response to Question 211.053, the overpressure analysis divides the valves into five groups such that each accounts for 20% of the total required capacity. The setpoints derived from the analysis are purposely higher than the actual values to account for initial setpoint errors and instrument setpoint drift. The initial pressure value indicated by the analysis is 1177. The actual setpoints will provide for six valve actuations by the time that pressure level is attained. That is 33% of capacity versus the 20% developed in the analysis.

Adherence to ASME Section XI will require setpoint verification on a continuing basis and provide additional setpoint credibility. These actions are outlined as follows.

During the system line-up/preoperational test program, the SRV relief setpoints are verified via a setpoint (calibration) check. The safety setpoints are preset prior to valve installation and an ASME nameplate data verification is performed under a QA type inspection to ensure that the installed SRV capacity is consistent with analysis. In addition, during the Startup Test Program, an SRV operability and capacity measurement test is performed which requires specific test acceptance criteria on SRV flow rates be satisfied. During vessel pressurization tests such as a MSIV full isolation, an SRV setpoint (relief mode) check is performed for those low setpoint valves that are lifted. This setpoint check is not rigorous in terms of accurate data. The relief setpoints of the SRVs are periodically checked, more rigorously, during scheduled instrument surveillances required by the Plant Technical Specifications. On a schedule defined by the ASME Boiler and Pressure Vessel Code, Section XI, IWV-3500 (In-service Tests, Category C Valves, SRVs) within a 5-year period following initial commercial operation, all SRVs have their safety setpoint verified by actual pressure lift. These measures ensure proper SRV operability and setpoints thus guaranteeing that SRV performance is within the conservatisms of the over-pressurization protection analysis.

Our response to Question 211.207 provides further information on this subject.

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Q. 211.114
(5.2.2)

Subsection 5.2.2.4.1 of the FSAR states that each safety/relief valve is provided with a device to counteract the effects of backpressure which results in the discharge line when the valve is open and discharging steam. What type of device is provided? Describe the device and what effects would be anticipated if the device were to fail.

Response:

There is not a singular backpressure balancing device, but there is an integrated feature in each safety/relief valve to counteract the effects of backpressure when the valve is open and discharging steam. To prevent this backpressure from affecting the valve's spring lift setpoint, each valve has a bellows and a balancing piston. The bellows isolates steam in the valve discharge chamber from the valve's internals, and prevents discharging steam from affecting the valve's setpoint. If the bellows fails, the balancing piston serves as a functional backup by presenting an effective piston area to the back pressure equal to the valve seat area. This reduces the acting spring load on the disc insert by the amount of back pressure load additive to the spring set pressure load acting on the disc holder, thus balancing (neutralizing) it so that there is no net back pressure effect on the set (popping) point.

Figure 5.2-10 has been revised to show the bellows and balancing piston, and 5.2.2.4.1 has been revised to include a reference to the bellows and balancing piston arrangement.

Q. 211.115
(5.2.2)

Subsection 5.2.2.4.1 of the FSAR states that setpoints for the power actuated mode for each safety/relief valve are specified in Table 5.2-2. Table 5.2-2 provides a listing of the setpoints and valve capacities of the valves in the five safety mode groups (spring-operated mode), but no data are presented for the relief mode of operation. Provide the relief setpoint for each safety/relief valve in Table 5.2-2 and in Figure 5.2-6.

Response:

Table 5.2-2 has been updated to include the relief (power actuated) setpoints. This table has also been updated to show the increased lowest spring setpoint and corresponding capacity. The P&ID Data, Figure 5.2-6, has been updated to reflect this increased lowest spring setpoint and the correct valve arrangement. Relief setpoints will not be added to the updated Figure 5.2-6. With the relief setpoints on Table 5.2-2, one can relate the relief setpoints to the corresponding valve identification and spring setpoints found in Figure 5.2-6.

Q. 211.116
(5.2.2)

Provide the results of hydraulic calculations that show the Mach number, pressure, and temperature at various locations from upstream of the safety/relief valves to the suppression pool at maximum flow conditions. The concern is related to the potential for the development of damaging shock waves to the discharge piping. Include the effects of suppression pool swell variations on the operation of the safety/relief valves.

Response:

Table 211.116-1 lists the Mach number, pressure, and temperature at selected locations downstream of the SRV. The conditions upstream of the valve are the steam stagnation pressure and density values listed in Table 211.116-2.

Under these conditions, the SRV orifice is choked and controls the flow in the discharge line. Sonic conditions (M=1) occur downstream of the SRV at the entrance to the quencher, due to the friction losses in the line. Since the critical pressure at the quencher inlet is 89.3 psi and the peak suppression backpressure is 42 psi (Table 6.2-5), critical flow will remain at the quencher inlet and pressure variations due to pool swell will not be able to reach the SRV to change its choked condition.

TABLE 211.116-1

TYPICAL SRVDL FLOW PARAMETERS AT
SELECTED NODES FOR MAXIMUM FLOW (LINE MS-RV-1A)

Distance from SRV (ft)	Mach. No.	Pressure (psia)	Wall Temp. (°F)
0.00 (SRV)	0.4116	388.8	385.9
15.10	0.4288	366.1	380.8
30.30	0.4502	342.3	375.4
45.40	0.4776	316.8	369.5
60.50	0.5151	288.7	362.7
75.60	0.5697	256.2	354.2
89.40	0.6524	219.1	343.7
104.50 (reducer)	1.0000	133.2	312.5
120.80	0.6750	142.1	308.1
136.50 (pipe exit)	1.0000	89.3	275.1
140.21 (quencher holes)	0.6460	22.9	218.8

TABLE 211.116-2

TYPICAL SRVDL DESIGN AND INITIAL VALUES (LINE MS-RV-1A)

Steam	
Stagnation Density (lb_m/ft^3)	2.7636
Stagnation Pressure (psia)	1202.2
Mass Flow Rate (lb_m/sec) (122.5% rated flow)	301.0
Line Lengths (ft)	
To High Water Level	122.93
High Water Level To Top of Quencher Bonnet	13.55
Line Transition	
Location (ft)	104.5
Length (ft)	0.667
Size (in/in)	10/12 (sched. 80)
Number of Computational Nodes	100

Q. 211.117
(5.2.2)

Resolve the following inconsistencies:

a. Figure 3.2-2 of the FSAR indicates in details B and C that the instrument air supply lines to the safety/relief valve air accumulators are Safety Class G (non-safety grade). Figure 9.3-2 shows these lines as Safety Class 2 or 3 (safety grade).

b. Figure 5.2-6 shows the safety/relief valves assigned to the automatic depressurization function are F013-M, -N, -P, -R, -S, -U, and -V. Figure 9.3-2 shows the dual accumulators used for the ADS valves assigned to safety/relief valves F013-D, -E, -H, -J, -M, -P, and -S.

Response:

a. There is no inconsistency between Figures 3.2-2 and 9.3-2. Details B and C on Figure 3.2-2 were not colored to show safety class, however, note 7d does indicate this piping is Safety Class 2 (code group B). The correct figure reference for safety classification for this piping is Figure 3.2-21. In addition, the colored version of Figure 9.3-2 has been replaced by a black and white figure which is periodically updated with the curent construction drawings.

b. Figure 9.3-2 was updated in Amendment 11 and is consistent with the information provided in Figure 5.2-6. For purposes of reducing reproduction costs, the multicolored drawings are revised in black and white only. The multicolored drawings issued with a copy of the FSAR also include the following disclaimer on the page before the drawing:

Figure XX.XX-XX (Multicolored)

For General Safety Class Reference Only

See Figure XX.XX-XX, Chapter XX

Q. 211.118
(5.2.2)

Subsection 5.2.2.4.1 of the FSAR states that the pneumatic accumulator provided for each safety/relief valve has sufficient capacity to provide one safety/relief valve actuation. Figure 3.2-2 indicates that the air supply line upstream of the ball check valve is Safety Class G (non-safety grade). If the air line were to break upstream of the ball check valve, would there be an indication in the control room of this break and an indication of the accumulator status? If an indication is given, what operator action would be required? Also, show that accumulator capacity for one actuation is sufficient.

Response:

The details on Figure 3.2-2 were not intended to be colored to show safety class. Figure 3.2-21 shows that the correct safety class is 2 (safety grade).

Q. 211.119
(5.2.5)

Subsection 5.2.5.2 of the FSAR indicates that temperature and pressure monitoring devices are used as primary detection devices for unidentified leakage. Regulatory Guide 1.45 states that humidity, temperature, or pressure monitoring should be considered as alarms or indirect indications of leakage. Justify this exception to the criteria of Regulatorty Guide 1.45. Demonstrate that the unidentified leak detection systems can detect leakage on the order of one gallon per minute in a one-hour period.

Response:

The use of pressure and temperature as absolute indications of a leak has been clarified by adding the following statements to 5.2.5.2.c and 5.2.5.2.d.

a. 5.2.5.2.c (added as last sentence to paragraph) The accuracy and relevance of pressure measurement is a function of containment free volume and detector location, and should be compared to observed increases in liquid flow from sumps as well as indications from other leak detection devices.

b. 5.2.5.2.d (added as last sentence to paragraph) The accuracy and relevance of temperature measurement is a function of containment free volume and detector location, and should be compared to observed increases in liquid flow from sumps as well as indications from other leak detection devices.

Humidity is indirectly monitored by measuring the flow rate of the floor drain sump for the drywell. A demonstration of the leak detection systems to detect leakage on the order of one gallon per minute in a one-hour period is delineated in 7.6.2.4.b, and the response to Question 211.002.

Related information is contained in the responses to Questions 211.003 and 211.005.

Q. 211.120
(5.2.5)

Subsection 7.6.1.13.7 of the FSAR states that the same leak detection monitor (a three-channel unit) will detect both airborne particulate and gaseous activities in the drywell atmosphere using scintillation detectors.

Explain how these two different types of airborne activities are separated by the monitor. Justify taking credit for both monitoring techniques in subsection 7.6.2.4.2.1.2 while using the same device. State the sensitivity and response time of the radioactivity monitor.

Response:

The FSAR has been revised such that the leak detection monitor is now addressed in 7.5.1.5, rather than 7.6.1.13.7. In addition, the information contained in 7.6.2.4.2.1.2 relative to leak detection monitoring is now contained in 7.6.2.4.b.

The sample is drawn into the sample system by its vacuum pump. Flow control is provided to insure proper sample flow. The sample flow path is from the sample point inside the primary containment, through the inlet isolation valve to the particulate monitor chamber. Here the sample is passed through a moving filter tape where the particulate matter is deposited on the tape while allowing the noble gases to pass through. The filter tape then moves across the face of a scintillation detector for analysis.

The gaseous sample, after removal of particulate matter, passes into a volume chamber where a second scintillation detector checks activity. Activity at this point will be due to noble gases.

The sample gas then proceeds through the flow control device, vacuum pump, return line isolation valve, and is discharged back into the primary containment.

Detector description and sensitivity are as follows:

a. Particulate Detectors

The particulate detector is a beta scintillation-type positioned near a moving tape filter collector assembly. Tape linear feed rates are adjustable from 1/4" to 1" per hour. The detector has a sensitivity of 10^{-10} μCi/cc concentration of activity in a 2 mR/hr background at

1"/hr tape feed rate with approximately 3 cfm of sample gas flow rate.

b. Noble Gas Detectors

The noble gas detector is a beta scintilation type and has a sensitivity of 1×10^{-6} Ci/cc for Kr-85.

Detector response times have previously been addressed in the response to Question 010.049.

Q. 211.121
(5.2.5)

Subsection 5.2.5.5.5 of the FSAR states that the leak detection system will satisfactorily detect unidentified leakage of 5 gpm. Subsection 7.6.2.4.2.1.2 states that the sensitivity and response time for each portion of the leak detection system for detection of unidentified leakage is one gallon per minute in less than one hour (excluding airborne systems). Resolve this inconsistency.

Response:

The information for sensitivity and response time of the leak detection system is now contained in 7.6.2.4.b, rather than 7.6.2.4.2.1.2.

The 5 gpm discussed in 5.2.5.5.5 refers to the maximum expected instantaneous leakage rate. The second paragraph on page 5.2-46 of 5.2.5.5.5 has been corrected to read as follows:

> The leak detection system sensitivity and response time is such that an unidentified leakage rate increase of one gpm in less than one hour will be detected.

<u>Q. 211.122</u>

The NRC changed this question number to 010.050.

Q. 211.123

The NRC changed this question number to 010.051.

Q. 211.124
(5.2.5)

It is unclear in subsection 5.2.5.2f of the FSAR whether comparative "grab" samples of the continuously monitored containment atmosphere can and will be taken on a periodic basis. Resolve this ambiguity. If "grab" samples are not to be taken, justify the omission of these comparative data.

Response:

The primary containment atmosphere gaseous radioactivity monitoring system has provisions for taking "grab" samples in accordance with WNP-2 Technical Specification 3/4.4.3 "Reactor Coolant System Leakage".

Q. 211.125

The NRC changed this question number to 010.052.

Q. 211.126

The NRC changed this question number to 010.053.

Q. 211.127
(5.4.7)

Resolve the following inconsistencies in Figure 5.4-14b:

a. In mode B of the RHR system operation, there is an unexplained 500 gpm increase in flow in going from process points 15B to points 21B and 23B.

b. In mode C-1, the sum of the flows past process points 40 and 40.2 should be equal to the flow past point 19. As presented, the sum of flows past points 40 and 40.2 is twice the flow that is tabulated for point 19.

c. In mode E, it is not clear what the total system flow should be (14,900 or 7450 gpm).

d. In the summary of the various modes of RHR system operation, reference is made in mode D to note 13. Note 13 has been deleted from the P&ID. Provide supplemental information to make this reference meaningful to delete this reference altogether.

e. Subsection 5.4.7.1.1.2 and Table 6.3-2 of the FSAR state that the functional design bases for the LPCI mode of RHR operation is to pump 7067 gpm of water per loop into the reactor core region of the reactor vessel. Figure 5.4-14b and the response to Question 211.038 state that each loop should supply 7450 gpm to the reactor core region under accident conditions.

Response:

The following discussions present the resolutions to the questioned items:

a. Mode B of the Process Data Sheet has been updated to indicate a flow rate of 7450 gpm at point 21B.

b. In Mode C-1 the condensate from the HX can be returned to either the suppression pool (via F011 and F026 closed) or to the RCIC system (via F011 closed and F026) open). The Process Data Sheet was written to describe both paths for the condensate.

1. Condensate return to suppression pool: Flow at points 19, 40 and 40.2 is equal to 190 gpm. Flow at point 40.1 equals zero.

2. Condensate return to RCIC: Flow at points 19, 40 and 40.1 is equal to 190 gpm. Flow at point 40.2 equals zero.

c. For Mode E, the total rated flow per loop is 7450 gpm. The rated flow is the flow through pumps and heat exchangers. (Flow rate through each shutdown cooling loop is 7450 gpm.) The combined flow rate of the loops is 14,900 gpm, which is the flow in the common suction line if both loops are being used. Point 26 on Mode E has a flow rate of 14,900 gpm since it is shared by both loops.

d. For Mode D "see Note 13" has been deleted from the Process Data Sheet.

e. The functional design basis for the LPCI mode of RHR operation is to pump 7450 gpm at 26 psi pressure difference between the reactor and the suppression pool air volume. Subsection 5.4.7.1.1.2 has been revised.

(BLANK)

Q. 211.128
(5.4.7)

Subsection 5.4.7.1 of the FSAR states that spoolpiece interties are provided to permit the RHR heat exchangers to be used to supplement the fuel pool cooling system.

Describe the administrative controls that will be exercised for the use of these spoolpieces. What would be the effects if the spoolpieces were left in place and the RHR system were operated in any or all of the RHR modes of operation? Similarly, a spoolpiece is shown on drawing M521 that connects the low pressure core spray (LPCS) system to the RHR loop A suction pipe. Describe the purpose of this intertie and, also, describe the effects on both the LPCS and RHR systems if the spoolpiece were inadvertently left in place. Are the same administrative controls used for the fuel pool cooling system spoolpiece used for the LPCS spoolpiece?

Response:

The response to this question is found in Section 5.4.7.1 and 6.3.2.2.3.

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Q. 211.129
(4.6)

The standby liquid control system and the recirculation flow control system are reactivity control systems. Address or reference these systems in Section 4.6 and address all requirements of Standard Review Plant 4.6.

Response:

The recirculation flow control system is evaluated against the general design criteria as follows:

a. Criteria 20, 21, 23, and 25: Criteria 20, 21, 23, and 25 are applicable to protection systems only. The recirculation flow control system is a reactivity control system but is not a protection system.

b. Criterion 26: The recirculation flow control system is the second reactivity control system required by this criterion. The requirements of this criterion do not apply within the system itself.

c. Criterion 27: The recirculation flow control system is not intended to control reactivity following an accident. Consequently, this criterion does not apply.

d. Criterion 28: The transient analyses in Chapter 15 evaluate the consequences of reactivity events involving changes in reactor coolant temperature and pressure and cold water addition. The results of these analyses indicate that none of these postulated events causes damage to the reactor coolant pressure boundary. In addition, the integrity of the core, its support structures, and other reactor pressure vessel internals are maintained so that the capability to cool the core is assured.

The evaluations with respect to general design criteria of the standby liquid control system can be found in 9.3.5.

The first paragraph of 4.6 has been replaced with the following:

> "Functional design of the control rod drive system (CRD) is discussed below. Functional designs of the recirculation flow control system and standby liquid control system are described in 5.4.1 and 9.3.5, respectively."

Q. 211.130

The NRC changed this question number to 010.044.

Q. 211.131

The NRC changed this question number to 010.045.

Q. 211.132
(4.6.1.1.2.4.2.1)

Resolve the following items relating to filtration of condensate water for the CRD hydraulic system.

a. The text description indicates that normal filtration of condensate water on the suction side of the CRD water pump is accomplished by a 25 micron filter and that a 250 micron strainer is provided in the bypass line for the 25 micron filter when it is being serviced. Figure 4.6-6a indicates that double filtration of condensate water on the suction side of the CRD water pump normally occurs via a 250 micron strainer and a 25 micron filter in series. Explain this discrepancy.

b. Describe provisions in the WNP-2 design to protect the hydraulic control units (HCUs) and control rod drives (CRDs) from damage due to inadvertent failure of either the pump suction filter or the drive water filter. If none exist, provide justification that inadvertent failure of either filter will not cause damage to the HCUs and CRDs.

Response:

a. No discrepancy exists. The normal CRD pump suction flow path includes a 25-micron filter with a 250-micron Y-strainer upstream of the filter. The filtration capacity of these two in-series elements is limited by and therefore characterized by, the 25-micron filter. In addition, another 250-micron Y-strainer is provided on the pump suction bypass line. (See Figure 4.6-5a.)

b. The filters used on the CRD system are of a rugged design and failure of the filters are not considered likely. Alarms are provided to give an early warning to the operator that maintenance is required.

The only known mode of failure of the filter element is for it to collapse due to high differential pressure. The CRD pump suction filter can withstand a maximum differential pressure of 20 psi and an alarm indicates in the control room high suction filter differential pressure at 8 psi. The filter element is additionally protected and strengthened by a stainless steel, perforated center tube. The CRD pump discharge filter can withstand a maximum differential pressure of 300 psi and an alarm indicates in the control room high differential pressure at 20 psi. The filter element is constructed entirely of stainless steel.

The primary source of CRD system water is the condensate treatment system. The water from the condensate system is of a controlled high quality and not laden with particulate matter.

If the CRD systems pump suction and discharge filters were bypassed completely, possible presence of corrosion particles would not affect the reliability of the scram function of the CRD system. The presence of corrosion particles may accelerate wear of the drive components over a period of time. However, such wear is not a safety concern since this degradation in drive performance already occurs during normal rod operations and is detectable.

The minimum performance requirements of the drives during reactor operation is specified in the technical specification. If the limiting conditions for operation are not met, the CRD is considered inoperative and the subsequent operation of the reactor is adjusted, as required, to account for the inoperative drive.

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Q. 211.133

The NRC changed this question number to 010.046.

Q. 211.134

The NRC changed this question number to 010.047.

Q. 211.135

The NRC changed this question number to 010.048.

Q. 211.136
(4.6.2)

Identify the specific common mode failure analysis and protection from common mode failures referenced in Section 15A by Sections 4.6.2.1 and 4.6.2.2, respectively.

Response:

Section 15A is the Plant Nuclear Safety Operational Analysis (NSOA). This analysis provides analytically determinable limits on the consequences of different classifications of plant events i.e., expected operational transients, unexpected operational transients, and is thus an event-consequence oriented evaluation.

Event 53 - Reactor Shutdown and Cooldown Without Control Rods satisfies the requirements of Regulatory Guide 1.70 for 4.6.2.1 and 4.6.2.2 respectively. In 15A, this event is discussed on page 15.A.6-36.

In addition, the scram discharge volume system has been evaluated (as requested in Question 010.041) against the criteria enumerated in the Generic Safety Evaluation report "BWR Scram Discharge System," dated December 1, 1980. With incorporation of the system modification described in the response to Question 010.041, the scram discharge volume system was found to be in full compliance with the SER.

Q. 211.137
(4.6.2.3.1.2)

Identify the layout studies done to assure that no interference exists which will restrict the passage of control rods and the preoperational test(s) that are used to show acceptable performance.

Response:

The clearance study that was generically applied to all BWRs 4 and 5 "C" lattice plants with 0.100" channels was used in October 1975 (reference GE Drawing 767E667, Rev. 0).

During initial preoperational testing, an observer who is in direct communication with the control room will observe the operation of each individual control rod and verify that there is no binding or restriction to rod motion and will listen for any scraping or binding noises which may signify rod misalignment. In addition, the function of each CRD drive line will be measured as indicated by the differential pressure developed across the CRD piston during notch withdrawal. These differential pressure traces will be compared to reference traces to assure proper operation and the absence of abnormal friction.

Q. 211.138
(4.6.4.1)

Provide the common mode failure probability value for the control rod drive and the standby liquid control systems.

Response:

A Fault Tree Analysis was completed for both of these systems, and the calculated unreliability is less than 10^{-7}/reactor year. This unreliability is an estimate of the failure* to fully insert the control rods into the core, combined with a failure to inject boron into the vessel by the SLCS.

*Failure is defined to be noninsertion of CRDs in the following manner: >50% in a "checkerboard pattern", >31% in a random pattern, or >4% in a cluster.

Q. 211.139
(5.4.6.2.2)

Provide the following information concerning RCIC equipment and component descriptions.

a. Section 5.4.6.2 of Regulatory Guide 1.70 states that significant design parameters for all components of the RCIC system be identified and that all components be shown on appropriate P&I diagrams. Design parameters for only a portion of the RCIC components are included in Section 5.4.6.2.2.2. Some of the more important components omitted are the:

   1. Water leg pump

   2. Barometric condenser

   3. Vacuum tank

   4. Condensate pump

   5. Turbine and steam supply drain pots

   6. Turbine governing and trip throttle valves

   7. Pump suction strainers in the suppression pool

   Provide the significant design parameters for all RCIC components not included already in Section 5.4.6.2.2.2 and verify that each component can be identified on Figures 5.4-9a and 5.4-9b.

b. The RCIC turbine is identified as component C001 in Section 5.4.6.2.2.2 and as component C002 in Figure 5.4-9b. Correct this discrepancy.

Response:

a. Component Design Parameters

   1. Water Leg Pump

Design Pressure	150 psig
Design Temperature	212°F
Capacity	25 gpm @ 200 ft. total head

2. Barometric Condenser

Design Pressure	50 psig
Design Temperature	650°F

3. Vacuum Tank

Design Pressure	15 psig
Design Temperature	212°F

4. Condensate Pump

Design Pressure	50 psig
Design Temperature	650°F
Capacity	23 gpm @ 10 in. Hg vac., 70°F 50 psig disc.

5. Turbine and Steam Supply Drain Pots

Design Pressure	1250 psig
Design Temperature	595°F

6. Turbine Governing and Trip Throttle Valves

Design Pressure	1250 psig
Design Temperature	575°F
Normal Operating Pressure	1150 psig
Normal Operating Temperature	557°F

7. Pump Suction Strainers in the Suppression Pool

   The RCIC pump suction strainers have been purchased to the same requirements as the strainers for the Residual Heat Removal System. The design parameters are shown in the response to Question 022.039. The RCIC pump suction line requires two 8" nominal diameter strainers.

It is believed that the significant design parameters are shown in 5.4.6.2.2.2 and appropriate components are shown on Figures 5.4-9a and 5.4-9b.

b. The description in 5.4.6.2.2.2 has been corrected to show "C002" as the correct identification.

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Q. 211.140
(5.4.6.2.1.3)

Four keylocked valves (F063, F064, F068 and F069) are indicated in step "a" as electrical interlocks. However, one of these valves, valve F064, is not indicated as keylocked in Figure 5.4-9a, while valve F008 is indicated as keylocked. Resolve this discrepancy.

Response:

The discrepancy was caused by an error in 5.4.6.2.1.3. The four keylocked valves on the RCIC system are F063, F008, F068 and F069. The text has been updated. The purpose of the keylocked switches for F008 is to administratively control the opening of the valve after an isolation of the system. This is to properly sequence the opening of the isolation valves in order to warm up the RCIC steam supply line and to prevent water hammering during system restart.

Q. 211.141
(5.4.6)

Is the RCIC electro-hydraulic system integrated with the turbine governing valve of a safety grade design (i.e., Seismic Category I)?

Response:

The RCIC electro-hydraulic system integrated with the turbine governing valve is a safety-grade design, and is classified as Seismic Category I equipment.

Q. 211.142
(5.4.6)

Describe the design features and operating procedures that preclude water hammer effects at the pump discharge of the RCIC system.

Response:

The design features and operating procedures that preclude water hammer effects at the RCIC pump discharge are the same as those for the ECCS systems as described in the response to Question 211.079. Surveillance testing of the RCIC system is also the same as that described for the ECCS systems in sections d, e and f of Question 211.079.

Q. 211.143
(5.4.6.4)

Show how the preoperational initial startup test programs for the RCIC system in Section 14.2.12.1.8 meet the intent of applicable sections in Regulatory Guide 1.68.

Response:

The applicable sections of Regulatory Guide 1.68 which delineate requirements for tests of RCIC include sections 1.d(5) and (6); 1.j (19); 4.k and q; 5.1, dd and mm of Appendix A.

The specific areas of concern that these sections address are, respectively: operability and design verification of the RCIC control instrumentation on the remote shutdown panel during the preop program, to demonstrate the design capability of RCIC during major plant transients such as the remote shutdown capability demonstration and the main steam line isolation valve (MSIV) full isolation test.

The WNP-2 initial startup test program provides for extensive tests in each of these areas. Sections 14.2.12.1.8, 14.2.12.1.26, 14.2.12.3.14, 14.2.12.3.25, 14.2.12.3.28, and 14.2.12.3.37 briefly describe, in general terms, the tests which will be performed to provide assurance that the RCIC system is fully operational in each of its modes or conditions in which it is expected to perform. Specifically, during the preop phase such RCIC component tests as valve operability, initiation/interlock/trip logic checks, flow path verification, control and instrumentation calibration, and pump/turbine vibration measurements are conducted. The final confirmation of proper RCIC system performance is achieved by challenging the system to perform during anticipated transients. The ability of RCIC to maintain reactor water level when controlled from the remote shutdown panel is demonstrated by actual testing. The ability of the system to meet its primary design function is demonstrated during the MSIV full isolation test when it is the main source of water for maintenance of vessel inventory.

The combination of component tests during the preop phase and the control system tune-up/overall operability demonstrations during the power ascension phase of the startup test program satisfy the requirement of Regulatory Guide 1.68.

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Q. 211.144
(5.4.6)

The ASME Boiler and Pressure Vessel Code, Section III, Article NB-7000 requires that individual pressure relief devices be installed to protect lines and components that can be isolated from normal system overpressurization protection. With reference to appropriate P&ID, identify those portions of the RCIC system that can be isolated from normal system overpressure protection. Discuss the relief devices provided or provide the basis for deciding that relief devices are not required.

Response:

Referring to Figures 5.4-9a and 5.4-9b, there are four RCIC pipe lines that have a low design pressure and, therefore, require relief devices or some other basis for addressing overpressure protection. They are:

- o RCIC Pump Suction Line
- o RCIC Turbine Exhaust Line
- o Portions of the RCIC Minimum Flow Line Downstream of F019
- o Portions of the RCIC Cooling Water Line Downstream of PCV-F015

The design pressure of the other major pipe lines is equal to the vessel design pressure and subject to the normal overpressure protection system. Below are the overpressure protection bases for the low pressure piping lines.

a. RCIC Pump Suction Line

A relief valve (F017) is located on the pump suction line on Figure 5.4-9b to accommodate any potential leakage through the isolation vaves (F013 and F066). A high pump suction pressure alarm is provided in the control room. Also, the pump suction pipe is protected from overpressurization from the RHR system during steam condensing mode by F036 (Figure 5.4-13a) should both the RHR heat exchanger level control valves F065A and F065B (Figure 5.4-13a) fail open while dumping condensate to the RCIC pump suction.

b. RCIC Turbine Exhaust Line

This line is normally vented to the suppression pool and is not subject to reactor pressure during normal operation. Rupture discs D001 and D002, as shown on Figure 5.4-9b, are installed on this line to prevent exceeding piping design pressure should the exhaust line isolation valve F068 be closed when the RCIC turbine is operating. The RCIC system will automatically isolate if the rupture discs were to blow open.

c. Portions of the RCIC Minimum Flow Line Downstream of F019

This line is normally vented to the suppression pool and is separated from reactor pressure by the pump discharge isolation valves (F013, F065, and F066) and one additional normally closed isolation valve in the minimum flow line (F019) as shown on Figure 5.4-9a.

d. Portions of the RCIC Cooling Water Line Downstream of PCV-F015

In the standby condition this line is separated from reactor pressure by the pump discharge valves (F013, F065 and F066) and one additional normally closed shut-off valve in the cooling water line (F046) as shown on Figure 5.4-9b. During system operation a relief valve (F018) is provided to prevent overpressurizing piping, valves, and equipment in the coolant loop in the event of failure of pressure control valve PCV-F015 as shown on Figure 5.4-9b.

Q. 211.145
(5.4.6)

At some BWR installations, the check valves in the turbine exhaust line of the RCIC system which serve a containment isolation function have been damaged as the result of intermittent closure. The intermittent closures arise from flow oscillations in the exhaust line associated with formation and collapse of steam bubbles in the suppression pool. One type of corrective action involves use of a sparger on the exhaust piping in the suppression pool to reduce the flow oscillations.

a. Is the 10" exhaust pipe shown in Figure 5.4-9a installed as a sparger for this purpose?

b. Are there other design features used at WNP-2 to prevent this type of damage?

Response:

The 10" exhaust pipe shown in Figure 5.4-9a is installed as a sparger to prevent flow induced oscillations due to steam bubble formation and collapse in the suppression pool. There is no other design feature used at WNP-2 to prevent this type of damage since the sparger will adequately resolve the problem.

Q. 211.146
(5.4.6)

In the responses to Questions 211.046 and 031.015, it is stated that an automatic safety grade switchover from the condensate storage tank to a Seismic Category I supply (i.e., the suppression pool) has been provided as a convenience to the operator. Provide a description of the automatic switchover feature and its initiating signal and confirm that both electrical and mechanical features are safety grade.

Response:

The automatic switchover feature for HPCS and RCIC consists of two Class 1E level switches for each system which will be mounted on a standpipe in the pump suction line. This standpipe is located on the common condensate supply line inside the reactor building at the reactor building/service building interface.

The standpipe is open ended and is used to indicate either a low water level condition in the condensate storage tanks (CST) or a loss of suction supply from the CST. The standpipe is designed, fabricated, and installed to Seismic Category I, Quality Class 1, and ASME Section III, Class 2 standards.

The piping from the reactor building/service building interface to both the RCIC and HPCS systems have been upgraded to Seismic Category I; each circumferential buttweld has been radiographically examined per ASME Section III, NC-5230, and a chemical analysis has been performed on all piping materials and as-deposited weld materials.

The HPCS P&ID (Figure 6.3-1) and Functional Control Diagram FCD (Figure 7.3-8) and the RCIC P&ID (Figure 5.4-9) and FCD (Figure 7.4-2) have been revised to indicate this design feature.

Q. 211.147
(5.4.6.1.2.1)
(5.4.6.2.4e)

The text indicates all components of the RCIC system are capable of individual functional testing during normal plant operation. Table 1.3-8 indicates each component, except the flow controller, is capable of functional testing. Resolve the discrepancy with respect to functional testing of the RCIC flow controller.

Response:

The design flow functional test capability of the RCIC system permits functional testing of all components of the RCIC system including the flow controller as described in 5.4.6.1.2.1 and 5.4.6.2.4. Table 1.3-8 has been updated.

Q. 211.148
(15.0)

Resolve the following items in Table 15.0-2:

a. Modify the values of vessel level trip to agree with the values specified in Figures 5.2-6 and 5.3-2 (item 29).

b. Specify the maximum percent relieving capacity assumed in Chapter 15 for each mode of SRV actuation (items 25 and 26).

c. Provide the following information concerning the high flux trip setpoint used as input to the REDY model (item 29):

   1. Explain why the high flux trip setpoint should not be increased to 122% NBR prior to multiplication by the thermal power correction factor of 1.043 to account for the setpoint plus calibration error, instrument accuracy, and transient overshoot specified in Table 7.2-4.

   2. Explain why the thermal power correction factor is applied to the high flux trip setpoint used in the REDY model.

d. Provide the following information concerning the APRM thermal trip setpoint used as input to the REDY model (item 30):

   1. Specify the highest flow-rated trip setpoint to be given in the Technical Specifications and how this value is obtained.

   2. Is the 122.03 NBR setpoint equal to the setpoint to be specified in step d (1) times the thermal power factor of 1.043 specified in step c (1)?

e. Table 15.0-2 does not contain all of the input parameters used in the REDY computer code. For each transient and accident analyzed in Chapter 15, provide the following:

   1. A list of all input parameters.

   2. Justification that the input parameters are conservative.

Response:

a. The water level setpoints specified in Figures 5.2-6 and 5.3-2 are consistent with those values specified in item 29 of Table 15.0-2. The apparent discrepancy is due to the different elevation level each table is referenced to.

Water Level Setpoints In	Reference To	Elevation Above Reactor Vessel Zero
Figure 5.2-6	Water level instrumentation zero	527.5 in.
Figure 5.3-2	Reactor vessel zero	0
Table 15.0-2	Bottom of steam separator skirt	514.0 in.

However, for the purpose of consistency and clarity, Table 15.0-2 has been revised to the same reference point as Figure 5.2-6 (bottom of the steam dryer skirt).

b. The maximum relieving capacity for each mode of SRV actuation assumed in Chapter 15 are:

Relief valve capacities @1106 psig is 101.8% NBR
Safety valve capacities @1213 psig is 111.5% NBR

These values have been added to item 22 of Table 15.0-2.

c. 1. The high flux setpoint shown in Table 7.2-4 is incorrect and a text correction is currently underway to make Table 7.2-4 consistent with Plant Technical Specifications. A correct list of setpoint specifications will be found in Table 2.2.1-1 of Chapter 16 when the WNP-2 Technical Specifications are completed. In the list, the trip setpoint column in Table 2.2.1-1 of Chapter 16 will correspond to the setpoint column in Table 7.2-4, and similarly the allowable values column to the setpoint and instrument drift column. The neutron flux (run model) shown in the new list is 120% of rated power that includes instrument drift. After accounting for calibration error and instrumentation inaccuracy, this setpoint totaled 121% of rated thermal power.

Item 27 of Table 15.0-2 has been corrected as follows:

High flux Trip % NBR Analysis Setpoint (121 x 1.043), % NBR = 126.20

A change in this high flux trip setpoint would cause no impact on transient results since for each transient analyzed in Chapter 15, the reactor was tripped by the direct scram prior to the high flux setpoint being reached.

2. The thermal power multiplier (RST) is used to give a conservative margin that is proportional to the core power.

d. 1. The maximum flow related trip setpoint given in Technical Specification will be 115.5% of rated thermal power (Table 2.2.1-1 of Chapter 16). This value is obtained by adding 2% instrument drift to the maximum nominal trip setpoint of 113.5%. The safety limit setpoint used in the FSAR analysis is 117%, which also includes instrument inaccuracy and calibration error.

2. Yes, the 122.03% NBR setpoint is calculated from multiplying the thermal power factor of 1.043 with the 117% safety limit as discussed in d (1) above.

e. 1. Table 15.0-2 was selected and provided to show the principal parameters related to the transient analysis providing a complete listing of inputs would be impractical. If some particular area of input is of special interest it can be provided upon specific request.

2. Parameters in which variation might have significant effect on the transient result were selected conservatively to bound the design values with uncertainty allowance.

The letter, R. H. Buchholz (GE) to P. S. Check (NRC), dated September 5, 1980, "Response to NRC Request for Information on ODYN Computer Model," lists the input parameters of ODYN. These parameters coupled with Table 15.0-2 should enable the review for conservatism of REDY to be completed. REDY and ODYN have as input parameters much the same values. Qualification of the REDY computer code is documented in NEDO-10802.

Q. 211.149
(15.0)

Provide a realistic range and permitted operating band for the exposure dependent parameters in Tables 4.4-1 and 15.0-2. In Table 15.0-2, provide assurance that values of parameters selected yield the most conservative results.

Response:

None of the thermal and hydraulic design characteristics shown in Table 4.4-1 are exposure dependent. Instead, they reflect the rated power and flow limits which characterize the core design.

In Table 15.0-2, the only exposure dependent parameters are the doppler coefficient, the void coefficient, and the scram reactivity. If the parameter is assumed not to vary during exposure, a conservative value is assumed to bound the realistic range. While doppler and void reactivity effects impact transient performance, the scram reactivity dominates the transient response. To provide assurance that the transient evaluations yield the most conservative results, the evaluations are performed at core exposure conditions expected to occur with the worst scram reactivity characteristic. The minimum scram reactivity for projected operation in BWRs occurs at the end of cycle exposure point, when the control rods are completely withdrawn from the core at rated power/ flow conditions.

The scram reactivity characteristic varies slightly with exposure, but is most strongly affected by the core power distribution and the associated control rod configuration prior to a scram. The scram reactivity used in the analysis shown in Figure 15.0-2 presents a conservative lower bound on the minimum scram reactivity for WNP-2, and also defines the minimum scram characteristic for permitted operation. In addition, the Plant Technical Specifications define surveillance requirements on control rod scram times to insure that the minimum required scram reactivity is provided throughout the plant lifetime.

The doppler coefficient varies slowly with exposure and is expected to be valued from -0.1433 to -0.2358 cents/°F during rated power operation in cycle 1. There is no defined operation band for this parameter. The void coefficient varies slightly with exposure and is expected to fall in the range of -6.32 to -9.50 cents/% (rated voids) in cycle 1. Except for requiring that the void coefficient is negative, there is no defined operation band for this parameter.

Q. 211.150
(15.0)

Provide a listing of the transients and accidents in Chapter 15 for which operator action is required in order to mitigate the consequences. For corrective actions required prior to 20 minutes, provide justification.

Response:

For the design basis accident events (i.e., LOCAs) cited in Chapter 15, the required operator action and its justification are detailed in the responses to Questions 211.059 and 211.065.

For all anticipated transients cited in Chapter 15, no operator action is assumed in less than 10 minutes to mitigate the consequences of the event or to prevent the plant from exceeding safety design limits. Operator action is allowed and utilized after 10 minutes in order to maintain the plant:

a. In a steady state condition;

b. Initiate safe and orderly shutdown;

c. Maneuver plant from condition that would necessitate safety action; or

d. Reduce the impact on plant system operation due to a single operator error or a single equipment malfunction.

In no case would the operator's action or nonaction result in an unacceptable effect on the health and safety of the general public. This operator action for transients certainly is justifiable since it is his normal operational assignment.

Q. 211.151
(15.0)

The analysis of transients and accidents in Chapter 15.0 does not state which of the RPS time response delays in Table 7.2-5 is used in the REDY computer model (NEDO-10802). For each transient and accident in Chapter 15.0, specify which delay time in Table 7.2-5 is used in the analysis and why the specified delay time is conservative.

Response:

In all Chapter 15 events, the "maximum overall response time" of Table 7.2-5 is utilized for each scram encountered and reported in each event scenario. By utilizing the maximum overall response time for RPS sensors and logic, the overall scram time is maximized, thus conservatively minimizing the reactivity insertion effects on the event.

Q 211.152
(15.0)

In relation to Figure 15.0-2, confirm the following items for all transients in Chapter 15.0 which require control rod insertion to prevent or lessen plant damage:

a. The scram curve used in Chapter 15.0 analysis (Figure 15.0-2) has a total reactivity worth of $37.05 and is the nominal scram curve multiplied by the standard transient safety conservatism factor of 0.80.

b. The slowest allowable scram insertion speed was used for the scram curve applied to Chapter 15.0 analyses.

c. The end of cycle 1 scram curve has a total reactivity worth of $40.21 and is identified incorrectly in Figure 15.0-2.

Response:

a. The scram curve used in Chapter 15 analyses with a total reactivity worth of $37.05 is quite conservative compared to the nominal scram curve. For any transient, since the neutron flux would drop significantly within 2 to 3 seconds after scram, the excess negative reactivity introduced after this short period of time has negligible effect on the peak values of the important parameters, e.g., neutron flux, surface heat flux, or vessel pressure. The initial portion of the scram curve used for analyses bounds the nominal scram curve multiplied by the conservatism factor of 0.8 in order to assure the coverage of the transient effect with the intended conservatism.

b. The scram time characteristic shown in Figure 15.0-2 is derived from the Technical Specification scram time. The slowest allowable scram insertion speed was used for the scram curve applied to Chapter 15 analyses.

c. The $40.21 is the correct total reactivity worth for the end of cycle 1 scram curve and is incorrectly labeled in Figure 15.0-2. Figure 15.0-2 has been corrected.

Q. 211.153
(15.0)

For transient analysis, credit has been taken for safety/ relief valve (SRV) actuation only in the relief mode. A more conservative approach would be to take credit for SRV actuation in the safety mode, resulting in higher peak vessel pressures.

a. What quantitative effect on MCPR and peak vessel pressure does credit for SRV actuation only in the safety mode have on each transient analyzed in Chapter 15?

b. In Section 5.2.2, the relief mode appears to be nonsafety grade because credit for 50% relieving capacity associated with power-actuated pressure-relief valves in ASME B&PV Code Section III, NB-7000, was not assumed for overpressure protection. Are all equipment and components required for SRV actuation in the relief mode nonsafety grade? If not, identify specific equipment and components that are safety grade and those which are nonsafety grade.

c. If the relief mode is nonsafety grade, explain why credit was taken for this mode of SRV actuation in Chapter 15.0. If the relief mode is safety grade, explain why credit for SRV actuation with up to 50% relieving capacity in the relief mode and additional relieving capacity up to 50% as required in the safety mode was not applied to analyses in Section 5.2.2 and Chapter 15.

Response:

a. For every transient analyzed in Chapter 15, the actuation of SRV on the safety mode instead of on relief mode would not have caused any significant impact on minimum CPR because the severity of event has already been limited by the direct trip scram, at some time before the first opening of relief valve. Although the resulting peak reactor pressure would be higher, its worst impact would be bounded by the overpressure transients which are considered in Chapter 5. In this chapter, severe overpressure events were analyzed without the protection of direct trip scram, along with assumption of failure of SRV in the relief mode, and application of the worst ASME pressure standard code. Results of analysis still show complete compliance with the ASME Boiler and Pressure Code, demonstrating adequate margin below the peak allowable nuclear system pressure of 1375 psig.

b. All equipment and components involved in actuating SRV in the relief mode are safety-grade (though not redundant). The ASME B&PV Code Section III would not allow credit for 50% relieving capacity on the BWR/5 product line.

c. It is correct that for the Hanford docket no safety-grade credit was claimed on SRV when its function is designated for relief action. This, however, does not contradict the application of its relief mode in the transients of Chapter 15. The issue of using non-safety-grade equipment in analyzing transients has provoked much discussion between the NRC and General Electric staff in the past. A mutual agreement was reached following a comprehen-sive review of all such transients in November 1978. It was agreed that by providing technical specification for those non-safety-grade equipment whose service had been included in the termination of the most limiting event, namely the L8 trip and the turbine bypass valves for the feedwater maximum demand, would satisfactorily resolve the issue. With compliance to that request, it is therefore appropriate to assume relief function for the SRV in the transient events in Chapter 15. In addi-tion, the results in delta CPR are insensitive to the mode of SRV actuation as explained in item a) above. Issue RSB-20 of the Licensing Review Group and response to Question 211.085 deals with the same subject matter. This issue is being addressed generically.

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Q. 211.154
(15.0)

Modify the sequence of events tables in Section 15.0 to specify the opening and closing times of referenced valves and the time at which each reactor vessel alarm or trip water level is attained throughout the duration of each transient in places where this information is not already included. Include appropriate delay times from the initiating signals and confirm the delay times are applied consistently between the event tables.

Response:

The sequence of event tables in Chapter 15 includes the opening and closing times of valves significant to the analysis such as turbine control valves, turbine stop valves, main steam bypass valves, MSIV and safety/relief valves. The times corresponding to the reactor vessel water level trips, e.g., L8 turbine and feedwater trip, L3 scram and L2 recirculation pumps trip and initiation of RCIC and HPCS, are also included in the sequence of events tables. The associated delay times are applied consistently to the relevant events, see Table 7.2-5 for RPS response times. The function of referenced valves and the action initiated by the water level trips are important while evaluating the consequences of transients. Therefore, the associated timings are necessary in the sequence of events tables. However, since operator action is not usually necessary following a water level alarm, the documentation of the time at which the water level alarm is attained is considered to be unnecessary. Should any event include operator action for a protection function, the timing of the alarm signal(s) and assumed operator response time would be given.

Q. 211.155
(15.0)

Modification of NSOA drawings to include use of nonsafety-grade systems or components which mitigate transients and accidents was requested in Question 211.085. In conjunction with this request:

a. Provide a table of the nonsafety-grade equipment and components assumed to mitigate consequences for each.

b. Provide the $\Delta(\Delta CPR)$ and $\Delta(\Delta$peak vessel pressure$)$ that would result if only safety-grade systems or components were assumed in the analysis for each event in Section 15.0 that takes credit for specific nonsafety-grade systems or components.

Response:

a. The Supply System response to Question 211.085 provided a table of non-safety-grade equipment and components assumed to operate in Chapter 15 analyses. Please refer to Table 211.085-1 for specific information. Individual sequence of event tables given with each transient in Chapter 15 connected with Table 211.085-1 yield the information requested.

b. The impact of delta CPR and delta peak vessel pressure without taking credit of these non-safety-grade systems and components are discussed as follows.

As a concern of the credibility for level 8 turbine trip and turbine bypass system, GE and the NRC met on November 20 and 21, 1978 for a comprehensive review of all such transients and as a result of that meeting, determined that the most limiting event which takes credit of level 8 turbine trip and turbine bypass system is the feedwater controller failure. Results indicate a delta CPR increase of approximately 0.02 and 0.08 for this transient without a level 8 turbine trip and a functioning turbine bypass system respectively. The impact of delta CPR with no credit for recirculation runback is negligible because the NSSS has passed its lowest MCPR before recirculation runback occurs.

For the peak vessel pressure concern, the peak vessel pressure for the transients without credit of non-safety-grade systems and components are bounded by that of the worst overpressure protection case, i.e., MSIV closure with flux scram.

The elements of the concern of this question are generic to BWRs and were resolved via the BWR Licensing Review Group (LRG) on the LaSalle docket. The response to this question is consistent with that resolution basis. Some additional specific concerns of some transients are addressed in responses to questions dealing with those transients.

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Q. 211.156
(15.0)

Discuss how the preoperational and startup tests will be used to confirm flow parameters used in Chapter 15 analyses. Provide details of any previous test of components in test facilities conducted to show satisfactory performance of the recirculation and feedwater flow control systems and respective pumps.

Response:

Both the preoperational and startup test procedures specify measurement of critical plant parameters including system flow rates. Each procedure places a specific criterion on the flow parameter of interest and test results must comply before acceptable system performance is documented. The bases for these performance criteria are delineated in the individual system design specifications. The Chapter 15 assumptions concerning critical flow parameters are also based upon these system design specifications but tend to be conservative in the sense that the numbers utilized in the analyses make the results more severe in comparison to actual plant performance. Test result compliance with acceptance criteria ensures that the Chapter 15 analyses are internally consistent with conservative plant performance.

Some of the specific flow parameters which are measured during the preoperational/startup test phases include:

Total Core Flow
- Recirculation Drive Flows
- Jet Pump Flows and Efficiencies
- Recirculation Flow Coastdown Following RPT

Feedwater Flow
- Nozzle Calibration
- Flow Control System Response
- Maximum Flow Capability

SRV Capacity

BPV Capacity

Total Steam Flow

RCIC System Flow

ECCS Flows
- HPCS
- LPCS
- LPCI
- RHRSW

CRD System Flows

Test data on these parameters are compared to test acceptance criteria to demonstrate adequate system performance. In many instances the acceptance criteria employed parallel the requirements placed on vendor demonstrations of component compliance with design specifications, i.e., the vendor generated pump flow/head curves determined in factory tests may become acceptance criteria for the preoperational tests of installed equipment. The ECCS pump flow requirements are examples of this practice. However, the determining acceptance criteria may also be the flow rate requirements for the system. Additionally, vendor factory calibration data on such equipment as the feedwater flow nozzles, vessel steam flow nozzles and recirculation jet pumps are used to confirm proper system performances during the power ascension test phase. Finally, such system response characteristics as the maximum feedwater and recirculation flow rates and recirculation flow coastdown following recirculation pump trip, RPT, are compared against criteria developed from Chapter 15 assumptions to evaluate overall system acceptability.

In summary, a major thrust of the preoperational/startup test program is to demonstrate that installed system performance satisfies design specifications. Consistency with Chapter 15 analyses is a natural consequence of this approach.

Q. 211.157
(15.0)

Analyze the turbine trip and generator load rejection transient from a safe shutdown earthquake event. Credit should not be taken for non-seismically qualified equipment or any equipment contained in a non-seismic structure.

Response:

Use of seismically qualified equipment to provide protection in the postulated design basis accidents is considered adequate and bounding from the viewpoint of seismic impact.

For a generic BWR/5 plant, an analysis of the load rejection transient was performed assuming the following additional failures:

a. Failure of direct trip scram

b. Failure of recirculation pump trip (RPT)

c. Failure of bypass systems

These failures model the loss of equipmment and instruments in the nonseismic turbine building.

A summary of results of this analysis for the generic BWR/5 plant is as follows:

Maximum vessel pressure (psig)	1222
Time of maximum pressure (seconds)	2.6
Minimum critical power ratio (MCPR)	0.92
Time of MCPR (seconds)	1.7
Rods in boiling transition	5.0
Peak cladding temperature (°F)	<1310°F

It is anticipated that similar results should be applicable to WNP-2 and that a plant specific analysis would be of little value.

If the above transient was analyzed with a direct trip scram, the results would be bounded by the flux scram trip presented here.

It is not anticipated that any single active component failure, in addition to failures of the direct trip scram, RPT and the bypass system, would significantly increase the severity of this event due to its brief duration.

In addition, this issue is a generic BWR issue resolved on the LaSalle docket as Issue RSB-20 via the BWR Licensing Review Group. See the second paragraph of the response to Question 211.162.

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Q. 211.158
(15.0)

On page 4-7 of NEDO-10802, it is stated that the difference in trend of flow coastdown versus initial power between the analytical and experimental coastdown curves for Dresden Unit No. 2 (a BWR/3) in Figure 4-11 was due in part to differences between actual and computed jet pump efficiencies.

a. How has this effect been treated in analysis of WNP-2 transients involving flow coastdown with two recirculation pump trips?

b. Is this treatment applicable to WNP-2 which is a BWR/5?

Response:

a. The design jet pump efficiency was used in the WNP-2 transient analysis. However, either the minimum pump inertia or the maximum pump inertia was used in the analyses depending on the type of transients, so that the calculated pump flow coastdown rate will result in worse consequence than that resulting from the acutal flow coastdown rate. Comparison of acutal flow coastdown data during startup testing with these conservative predictions ensures acceptable performance.

b. The procedure for insuring conservatism of actual system performance with respect to the calculations is addressed in part a. Though the reasons for design vs. actual performance for Dresden Unit No. 2 may be expected to be the same for WNP-2 due to similarity in jet pump design, no specific analysis is performed or necessary for WNP-2.

Q. 211.159
(15.0)

GE calculations performed for decrease in reactor coolant temperature (Section 15.1) and for reactor pressure increase (Section 15.2) events using the proposed ODYN licensing basis model (NEDO-24154) have shown that in some cases a more limiting CPR is predicted than by the current REDY licensing bases model (NEDO-10802). Since Question 211.049 was submitted, the ODYN model has been approved. Based on a letter to Glen G. Sherwood dated 1/23/80 from Richard P. Denise, the staff's ODYN licensing position is that GE can proceed with ODYN analysis of certain events described in Section 15 of licensing application Safety Analysis Reports. Provide the following additional information in conjunction with Question 211.049:

a. An ODYN analysis of the applicable events (One-D) listed in Tables 2-1 and 2-2 of NEDE-25154-P.

b. A list of all input parameters for each event.

c. Justification that input parameters for each event are conservative.

Response:

a. The ODYN analysis of the applicable events has been completed and the appropriate changes to the FSAR have been made. The following sections have been revised: 5.2.2, 15.0, 15.1.2, 15.2.2, and 15.2.3, and Table 4.4-1.

b. The list of input parameters of the ODYN analysis are listed in Table 15.0-2.

c. The input parameters for the ODYN analysis are either the same or more conservative than those previously used in REDY or have been corrected to reflect the latest plant design. See revised Table 15.0-2 for additional information.

Q. 211.160
(15.0)

For each transient and accident analyzed in Section 15, identify each normally operating system for which credit has been taken.

Reponse:

One of the objectives of FSAR Appendix 15A is to identify the systems, equipment or components' operational conditions or requirements essential to satisfy the nuclear safety operational criteria utilized in the plant event analysis (NSOA). The NSOA event protection sequence diagrams presented in 15.A.6 identify each normally operating system important to achieving safe shutdown conditions for which credit has been taken in Chapter 15. The Supply System response to Question 211.085 concerning utilization of non-safety-grade equipment provides the information requested. For non-safety systems, the primary concern of this question, NSOA diagrams coupled with the response to Question 211.085 adequately address this qeustion.

Q. 211.161
(15.0)

Provide assurance that the limiting pump trip is assumed in analyzing decreases in reactor coolant system flow rate transients. Different trip signals may cause different coastdown characteristics. Identify the trip signal that can be expected to produce the most severe pump coastdown characteristics.

Response:

For the limiting reciruclation pump trip event, the faster the coastdown is, the more severe the consequence will be. For valve control plants, such as WNP-2, different trip signals would cause the same coastdown characteristics. The minimum pump inertia which causes the fastest coastdown is assumed in the analysis of the pump trip event to obtain conservative results.

Q. 211.162
(15.0)

In the analyses for the generator load rejection and turbine trip transients, credit is taken for immediate reactor scram and reciruclation pump trip obtained from a valve closure signal (turbine control valve for load rejection and turbine stop valve for turbine trip). Analyze these transients without taking credit for immediate reactor scram and recirculation pump trip. Take credit only for safety-grade, Seismic Category I equipment, and assume loss of offsite power. What is the effect of the failure of a single safety-grade component? Provide the effect on analytical results that WNP-2 operation with the new 8 x 8 fuel design with two water rods will have.

Present curves similar to those of Figures 15.2-2 and 15.2-4 and give values of maximum vessel pressure and minimum MCPR with the times at which these values occur. Evaluate the percent of fuel rods which would reach boiling transition. Since this event is not an anticipated transient, limited fuel failure can be allowed if dose consequences are acceptable.

Response:

The impact of the failures of direct scram, RPT, and bypass system on the load rejection which is worse than turbine trip is explained in the response to Question 211.157. The main effect of loss of offsite power for the above event combination is to cause a recirculation pump trip which would mitigate the consequences. Since loss of offsite power is nonconservative in this situation, a specific analysis was not performed in view of the effort on Question 211.157.

This issue is a generic BWR issue and has been resolved through the BWR Licensing Review Group (LRG) as Issue RSB-20 on the LaSalle docket. The resolution of the issue involved meetings between the NRC staff and GE in November 1978 and culminated in the agreement to perform Technical Specification surveillance on the level 8 trip and turbine bypass system. The Supply System has agreed to perform these surveillances as stated in the response to Question 211.086. The resolution basis for this issue is summarized in the LaSalle SER, Section 15.1. See also the response to Question 211.085 for more explicit references to questions on other dockets.

Q. 211.163
(15.0)

For the majority of events analyzed in Chapter 15, the recirculation flow control mode (automatic or manual) assumed in the analysis is not specified. Our concern is that the mode selected may not result in the most severe margins on MCPR and peak vessel pressure.

a. Specify the recirculation flow control mode assumed for each event analyzed in Chapter 15.

b. Specify the change in MCPR and peak vessel pressure that results in these parameters for each event if the opposite recirculation flow control mode had been assumed in the analysis.

Response:

a. All of the major transient events are simulated with the manual recirculation flow control mode. The analysis evaluated with this mode of operation is more severe in transient results because of the following:

By using the manual flow control option in a hypothesized transient, the recirculation controller would lose its communication with the master controller. For example, the master flow controller would be unable to adjust the core flow demand downward in response to an up-power transient and thereby change recirculation flow to mitigate the power transient. In effect, recirculation flow would remain constant until an interlock such as RPT initiates a flow runback on pump trip. As a consequence, the resultant increase in core flow response time tends to worsen the simulated transient, making it a conservative estimate of plant response.

b. A representative comparison of the effect of automatic vs. manual recirculation flow control can be seen in Chapter 15 of the FSAR, Figures 15.1-1 and 15.1-2. At present the Supply System does not intend to operate with the recirculation system in automatic flow control (AFC) following completion of the Startup Test Program.

Q. 211.164
(15.1.1.2.2)

On page 15.1-2, it is stated that the thermal power monitor (TPM) is the primary protection system for mitigating the consequences of the transient resulting from loss of feedwater heating. A description of this monitor, which typically involves the flow-weighted APRM scram in conjunction with a 6-second time constant circuit, was not found in the WNP-2 FSAR. Provide this description in sufficient detail to permit evaluation of the TPM for WNP-2.

If the time constant, which affects scram initiation by the TPM is less than the effective time constant for the WNP-2 fuel for this type of transient, the TPM should provide a conservative measure of the time variation in surface heat flux. However, if the time constant is appreciably larger than that for the fuel, the fixed APRM trip without a time constant would provide the scram protection. The resulting MCPR would then be less than that predicted for the TPM scram which has a lower setpoint.

There is no current provision in the Technical Specifications for surveillance of this time constant circuit. It is the staff's position that credit be taken only for the fixed ARPM scram in Chapter 15 unless the TPM is approved by the staff and appropriate limiting conditions for operation and surveillance requirements are incorporated in the Technical Specifications for WNP-2.

a. Provide an analysis of the "loss of feedwater heating" transient assuming credit only for the fixed APRM scram. This is a more conservative approach because it will result in a more severe transient due to the higher fixed APRM scram setpoint.

b. Revise NSOA Figure 15A.6-21 to indicate the high flux scram signal occurs from the fixed APRM scram instead of the TPM.

c. Re-evaluate single failure criteria in Section 15.1.1.2.3 without taking credit for the TPM.

Response:

Sections 7.6.1.4.3 and 7.2.1.1.b.1.b describe the thermal power monitor function of the neutron monitoring system (NMS). Table 7.6-3, APRM System Trips and Figure 7.6-10, APRM Circuit Arrangement for RPS Input, provide additional information on the TPM setpoints and trip actions. These descriptions permit the evaluation of the TPM's application to WNP-2.

In a response to an earlier question (211.089) the Supply System outlined its intentions with respect to technical specifications surveillance requirements and limiting conditions for operation for the TPM. The TPM components are safety grade qualified (SC-2, Quality Class I, Seismic Category I) and the system is designed to be single failure proof. For these reasons, it is appropriate to take credit for the TPM scram during the "loss of feedwater heating" (LFWH) event. Re-analysis of the LFWH event and revision of the appropriate NSOA figure without TPM is unjustified. The evaluation in 15.1.1.2.3 remains accurate.

Q. 211.165
(15.1.2.3.2)

Provide the following information relating to the "feedwater controller failure at maximum demand" transient:

a. Explain the discrepancy between the assumed feedwater controller failure values at maximum demand specified in the text (135% flow) and in Table 15.1-3 (146% flow). Provide the basis for selecting the magnitude of FW flow increase assumed in the analysis.

b. In conjunction with the magnitude of feedwater (FW) increase assumed in the analysis, explain why the full FW increase is attained at essentially zero seconds in Figure 15.1-3. In GESSAR 238-732, the FW increase is initiated at zero seconds and attains the full value (maximum demand) at approximately 5 seconds.

c. If the FW temperature at the reactor vessel has been assumed constant, provide a quantitative analysis that includes the effect of FW temperature variation on MCPR and the basis for determining this variation. Incorporate any changes from step a. above concerning the appropriate value of FW flow rate assumed in the analysis of this transient.

Response:

a. The maximum feedwater flow capability is assumed to be 135% at a design pressure of 1060 psig. Since the analysis is done at 1020 psig, the flow capacity will be somewhat higher, i.e., about 145% of rated. The basis for the 135% is a survey of other typical plants. If startup tests show that the runout capacity exceeds these values then the feedwater system will be modified to stay within these bounds or the safety analysis analysis will be redone at the higher runout capacity. This question was previously addressed in our response to Question 211.093.

b. The analysis is currently performed assuming FW flow attains full value at 0 seconds. This is conservative with regard to thermal margins, due to the collapsing of voids. Figure 15.1-3 in the 238 GESSAR II reflects the same FW flow assumptions as Figure 15.1-3 in the WNP-2 FSAR.

c. The relatively large time constant of the feedwater heaters (order of minutes) plus the flow transport time (10 seconds from heaters to vessel and 3 seconds from sparger to core) would preclude any effect of temperature reduction on the transient since the transient is essentially over in about 12 seconds. This question was previously addressed in our response to Question 211.094.

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Q. 211.166
(15.1.3.3.2)

The pressure regulator failure at 115% NBR steam flow is simulated in Figure 15.1-4 in a manner consistent with GESSAR 238-732. However, the assumed pressure regulator failure value of 115% NBR steam flow for WNP-2 appears low compared to a failure value of 130% steam flow used in other FSARs with approximately 15% greater than the normal maximum flow permitted by the steam flow limiter.

a. Explain the difference between the 110% NBR steam flow indicated as the normal maximum flow limit in this section and the 115% value specified in Section 15.1.3.1.1.

b. Explain the basis for selecting the assumed pressure regulator failure value of 115% NBR steam flow used in the FSAR. If a new steam flow value in excess of that permitted by the steam flow limiter is chosen, provide the basis for selecting the amount of steam flow in excess of that permitted by the steam flow limiter.

Response:

In the WNP-2 digital electro-hydraulic (DEH) control system the maximum flow limiter is adjustable and will be set at a nominal value of 110% NBR steam flow. The control valve position demand limiter will be set at a nominal 100% open valve limit. At this position the control valves would pass something in excess of 100% NBR steam flow. With a pressure regulator failure-open transient the bypass valves would open to a position that is the difference between the maximum flow limiter and control valve position demand limiter signals. The positions of the control valves and bypass valves establish the reactor depressurization rate during this transient. As 15.1.3.3.4 discusses, if the depressurization rate is slow enough for the feedwater control system to prevent an L8 turbine trip, the MSIVs would eventually isolate on low steamline pressure to terminate the transient. This occurs when the maximum steam flow limiter is set at a relatively low value. At higher limiter setpoints and associated faster depressurization rates the transient is terminated by the L8 turbine trip as presented in 15.1.3.3.3. In either case the minimum thermal margin and peak reactor pressure are bounded by the MSIV full closure analysis for slow depressurization and by the turbine trip with bypass analysis for rapid depressurization. Therefore, the transient MCPR and reactor pressure parameters are insensitive to the maximum flow limiter setpoint. The value reported in 15.1.3.1.1 has been corrected to 110% NBR. The basis for selecting 115% for the setpoint in the analysis is that it produces a depressurization rate that is terminated by a turbine trip. This transient produces slightly lower thermal margins but also a lower peak vessel pressure than an MSIV isolation. This approach is bounding with respect to expected plant operation.

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Q. 211.167
(15.1.3.3.3)

The depressurization rate has a proportional effect on the voiding action of the core. For the "pressure regulator failure-open" transient, the assumed depressurization rate results in a L8 trip. The results are not consistent with GESSAR 238-732 where a lower depressurization rate results in a trip from low turbine inlet pressure. Explain this discrepancy and provide justification that the assumed trip provides the most restrictive margins on MCPR and peak vessel pressure.

Response:

If the depressurization rate is not sufficient to cause level swell to reach L8, then turbine inlet pressure will drop below the isolation setpoint and cause isolation and scram. Since power is being depressed as the pressure decreases (due to additional voiding in the core), this transient is less severe when you assume a slower depressurization rate. Therefore, the assumed L8 trip provides the most restrictive margins on MCPR and peak vessel pressure. The results of this transient in the GESSAR II 238 document (22A7000) assume that water level swell will reach Level 8 and cause reactor scram which is consistent with the Supply System analysis.

Q. 211.168
(15.1.4.2.1.1)

For the "inadvertent opening of a safety/relief valve" transient, include the time at which suppression pool temperature alarms and Technical Specification limit are attained in event Table 15.1-5.

Response:

One of the initial conditions assumed in the Chapter 15 analyses is that the suppression pool temperature is at the technical specification limit (TS.2). For WNP-2, this limit is 90°F, which is also the suppression pool high temperature alarm point. Table 15.1-5 has been revised to indicate that at time zero: (a) the plant is operating with the suppression pool temperature at the technical specification limit (TS.2), and (b) the high suppression pool temperature alarm is received in the control room.

Q. 211.169
(15.0)

Modify Table 15.0-1 as follows:

a. Provide a calculated MCPR value for all events in Table 15.0-1 where a MCPR value is not specified.

b. Correct the following discrepancies between values of parameters in Table 15.0-1 and corresponding text values and confirm other discrepancies do not exist.

Event	Maximum Core Average Surface Heat Flux, % of Initial		SRV Actuation	
	Table	Text	Table	Text
15.2.6 (Case 1)	-	-	No	Yes
15.4.4	146.6	80.6	-	-
15.4.5 (Case 1)	141.0	79.0	-	-
15.4.5 (Case 2)	134.6	75.0	-	-

Response:

a. Where significant risk of approaching MCPR limits exists, specific calculations for MCPR have been done and recorded in the table. Values for less severe transients have been approximated by comparing to other calculated transients or by utilizing the maximum surface heat flux and neutron flux generated during the transient.

In the case of a pressure regulatory failure-open, the transient is similar to a turbine trip with bypass but is less severe as shown by the lower values of heat flux and neutron flux. Thus, the MCPR can be estimated to be greater than that for turbine trip, i.e., >1.18. Similar analogies can be made for the loss of condenser vacuum transient vs. turbine trip without bypass and for the loss of all grid connections vs. generator load rejection with bypass. The MSIV closure transient MCPR was estimated by an approximation equation we have devised for pressurization transients. All of the transients which show an MCPR of ~1.24 have been estimated by looking at the change in neutron flux and heat flux from the initial values. In each of these cases there is essentially no change and thus no change in CPR. The final three cases, which show a MCPR >1.06, are transients which are started from part load conditions and can be expected to have MCPRs much greater than the safety limit.

b. For event 15.2.6, Case 1, the SRVs would open after MSIV closure at low water level (L2). The values of maximum core average surface heat flux for events 15.4.4 and 15.4.5 in both table and text are correct. In the table, the values are expressed in terms of a percentage of initial average surface heat flux which is 55% of NBR for event 15.4.4 and 45% of NBR for event 15.4.5. However, the values in the text represent peak parameters and are expressed directly in terms of a percentage of NBR.

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Q. 211.170
(15.0)

For event Category 15.3 in Table 15.0-2, identify the most limiting anticipated transient for MCPR and maximum vessel pressure.

Response:

For event Category 15.3 in Table 15.0-2, the "trip of both recirculation pump motors" event is the most limiting anticipated transient for MCPR and maximum vessel pressure. Transients in event Category 15.3 are much less severe than those in event Category 15.2.

Q. 211.171
(15.0)

Provide an analysis of the "Loss of Instrument Air" transient.

Response:

Although a complete analysis of the "loss of instrument air" transient has not been performed, an expected sequence of events and operator actions for this event are provided below.

Recent operating experience indicates that complete loss of instrument air is a remote possibility, since there is enough instrument air stored to provide backup for safety-related air-operated equipment. However, reports of partial loss of instrument air appears to have had no serious effects on reactor components, although it occurs with a moderate frequency.

The compressed air systems are described in 9.3.1; with the control and service air system in 9.3.1.2.1, and the containment instrument air system in 9.3.1.2.2.

The containment instrument air system is normally fed by the Containment Nitrogen system backed up by nitrogen bottles for the ADS accumulators. The control and service air system consists of three CAS and one SA compressors.

However, in the event instrument air is lost from these redundant sources, the following events could be expected to occur (in a sequence dependent on the location and type of failures).

a. Control rod drive system - The scram inlet and outlet valves will open, shutting down the reactor. The CRD flow control valve will close to approximately 2% open. The drain and vent valves for the scram discharge volume will close.

   The main turbine pressure control system will maintain reactor pressure after the reactor is shut down until the turbine control valves are closed. If the mode switch is still in the "Run" mode the main steam isolation valves will close and produce a scram signal as the reactor pressure decreases below 850 psi.

b. Reactor water cleanup system - All air-operated cleanup filter demineralizer valves and the reject valve to radwaste or the main condensers will close upon loss of air.

c. Standby liquid control - The level indication for the storage tank will decrease to zero.

d. Main steamline isolation valves (MSIV) will close. MSIV will also receive a close signal due to loss of condenser vacuum.

e. Main steam safety/relief valves will not open as a direct result of loss of air supply. There is sufficient air in each relief accumulator to provide one actuation of each relief valve following MSIV failure. Long term reactor pressure control is provided by the safety feature (spring relief) of the safety/relief valves.

f. Containment atmosphere control valves and containment ventilation isolation valves fail closed on loss of instrument air.

g. The steam supply valves to the steam jet air ejectors will close, eventually resulting in loss of condensor vacuum.

h. Spent fuel pool cooling and cleanup system - The demineralized makeup to the pool skimmer surge tank will fail closed, but Class 1E level instrumentation is provided with a safety-related makeup source (standby service water). Also, the fuel pool filter/demineralizer bypass valve will open allowing recirculation directly back to the fuel pool.

i. The ventilation supply isolation dampers to the secondary containment fail closed.

j. The standby gas treatment system will align itself to take suction from the secondary containment.

k. The RCIC steamline drain and RHR heat exchanger steam supply control valves will close. The RHR heat exchanger steam supply is normally closed by a motor-operated valve.

l. Loss of instrument air has no effect on HPCS.

m. All testable check valves in the systems - Testability, not operability, would be lost to those testable check valves supplied by the containment instrument air or control and service air systems.

n. The minimum flow bypasses for the condensate, condensate booster, and feedwater pumps will open, bypassing feedwater to the condenser. This will cause the reactor water level to drop to level 3, thereby initiating a scram signal.

o. Nonsafety systems which do not affect safe plant shutdown are affected by complete or partial loss of instrument air. However, complete or partial loss of air does not adversely affect any safety systems required to safety shut down the plant.

p. Automatic hotwell level control is lost as the air-operated makeup/reject valves fail closed.

The following is the sequence of operator actions expected during the course of the event. The operator should:

a. Confirm that the reactor has become subcritical.

b. Initiate a scheduled surveillance of the standby liquid control storage tank to confirm proper water level and add water manually as required from the clean demineralized water system.

c. Operate RCIC and/or HPCS according to normal procedures to maintain normal reactor water level.

d. Continue the cooldown of the reactor with the RHR system, after reactor pressure and temperature have decreased to the operating limits of RHR.

e. Upon receipt of alarm of loss of 1/4" H_2O vacuum in reactor building (see Item i above), manually initiate operation of the standby gas treatment system.

f. Manually connect makeup water to the closed cooling water system and the fuel pool system as required.

g. Manually control hotwell level as required.

Loss of the instrument air system will result in the shutdown of the reactor due to the opening of the control rod scram valves and the closing of the main steamline isolation valves. The failure of instrument air will not interfere with the safe shutdown of the reactor since all equipment using instrument air is designed to fail to a position that is consistent with the safe shutdown of the plant. Although specific operator action to shut down the plant safety is not required after a loss of instrument air, the plant emergency procedures will reflect the best actions to be taken.

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Q. 211.172
(15.6.5.2.1)

In the description of event sequences for LOCA inside containment, several items need additional clarification.

a. The initiating times for MSIV closure and ECCS actuation in the text description appear inconsistent with the corresponding event occurrence times in Table 6.3-1. Explain these apparent discrepancies.

b. Confirm that the zero reference time for Tables 6.3-1 and 6.2-8 are the same.

Response:

a. The second paragraph in 15.6.5.2.1 is incorrect and has been deleted. The referenced Tables 6.3-1 and 6.2-8 provide the correct information which includes initiation of MSIV closure on Level 2. The change in the text as described in this response eliminates any inconsistencies.

b. The zero reference times for both Tables 6.3-1 and 6.2-8 are the same, i.e., the time of the pipe break.

Q. 211.173
(15.1.3.2.1)

Add the "initial core cooling" safety action indicated in NSOA Figure 15A.6-23 for the "pressure regulator failure-open" transient to event Table 15.1-4 for consistency.

Response:

The "initial core cooling" safety action on Figure 15A.6-23 is the initiation of HPCS or RCIC. This is indicated on event Table 15.1-4.

Q. 211.174
(15.2)

The treatment of uncertainties associated with SRV setpoints appears to be handled in three different ways for the events associated with the sections shown below:

Section	Treatment of SRV Setpoint Uncertainties
15.2.3.3.4	Setpoints include errors (high) for all valves
15.2.4.3.4	Setpoints are assumed 15 psi higher than the valves nominal setpoint
15.2.5.3.4	Setpoints are assumed at upper limit of Technical Specifications for all valves.

Explain this apparent discrepancy. If no discrepancy exists, standardize the wording between these sections for consistency.

Response:

The same uncertainty (15 psi) was assumed for the original FSAR Chapter 15 REDY analysis. For the ODYN reanalysis, however, a larger uncertainty (30 psi above the nominal setpoint) was used to conservatively cover all valve instrument errors that were determined after the REDY analysis. This new setpoint is reflected in Item 25 of Table 15.0-2.

Q. 211.175
(15.2.1.2.3)

It is indicated that the "pressure regulator-closed" transient with failure of the backup pressure regulator is less severe than the "turbine trip with bypass" transient in Section 15.2.3. This agrees with GESSAR 238. As a result, only a qualitative evaluation of the transient was provided. However, quantitative results from the Grand Gulf FSAR indicate the opposite. The staff's concern is that quantitative results for this transient may be similar to those for Grand Gulf. Provide a quantitative analysis of the "pressure regulator-closed" transient assuming failure of the backup pressure regulator.

Response:

For WNP-2 the pressure regulator-closed transient is less severe than the turbine trip with bypass event for the following reasons:

a. For the pressure regulator failure-closure event the reactor scrams on high neutron flux or pressure but the recirculation pumps do not trip. As a result, core flow remains at 100% or greater throughout the critical portion of the transient with respect to the CPR. This provides improved heat transfer capability in relation to the turbine trip transient.

b. Since the control valves close in response to a pressure error signal, their closure rate is not as fast as the turbine stop or control valve response to a trip signal. This produces a slower pressurization rate for the regulator failure relative to the turbine trip event. This in turn, results in a lower peak neutron flux, and therefore a lower peak surface heat flux, than the turbine trip event.

The combination of these two factors justifies the assumption implicit in 15.2.1 that the pressure regulator failure-closed transient is bounded by the turbine trip with bypass event.

A generic ODYN analysis of the pressure regulator failure-closed transient in conjunction with a WNP-2 plant specific ODYN analysis of the turbine trip with bypass event was performed which provides quantitative results to confirm this position.

Q. 211.176
(15.6.5.3.3)

In Table 6.3-3, it is indicated that the core-wide metal-water reaction for WNP-2 has been calculated at 102% of licensed core power. Explain why the above calculation was not based on the thermal power of 3462 MWt specified in Table 6.3-2 (104.18% of licensed core power) to be consistent with the thermal power value used for LOCA calculations inside containment.

Response:

The core-wide metal-water reaction for WNP-2 is a function of the core reflooding time. Reflooding time is based on ECCS calculations. For the purpose of determining bundle-related parameters, ECCS calculations are performed in conformance with Appendix K criteria (paragraph I.A, specifically 102% of rated power). See response to Question 211.195 (part b) for a discussion of power level assumed for overall system response calculations.

Q. 211.177
(15.2.7.2.1)

Review of the "loss of feedwater flow" transient indicates that the feedwater flow decreases to zero in 5 seconds. For the analyses presented in the FSARs indicated below, the reactor vessel water level decreases to the L3 scram trip setpoint as follows:

FSAR	Time at which L3 trip occurs, sec	Vessel ID, in./no.of fuel assemblies	Rated Power, MWT
Susquehanna	4.6	251/764	3293
Fermi-2	6.8	251/764	3293
Grand Gulf	4.1	251/800	3833
WNP-2	7.36	251/764	3323

For WNP-2 analysis, it would appear that the L3 setpoint would be reached at a time slightly less than that for either Susquehanna or Fermi-2 because the power level is slightly higher and all three have the same size vessel. Provide an explanation as to why the L3 setpoint for WNP-2 should not be attained before that for Susquehanna or Fermi-2. Include appropriate design considerations (differences in piping, setpoints, etc.) in the response.

Response:

The Level 3 setpoint is reached at a later time on WNP-2 than on Susquehanna because the latter plant has been analyzed without taking credit for the recirculation flow reduction logic in the early stage of the transient. The effect of bypassing this runback is to keep core power high and thus reduce level quicker. (Note also that the value for Grand Gulf is 6.7 seconds not 4.1 seconds as stated in the NRC question.)

Q. 211.178
(15.2.3.3.2)

A turbine stop valve full-stroke closure time of 0.10 seconds is used in the analysis of the "turbine trip" transients. Demonstrate quantitatively or provide references that show that turbine stop valve full-stroke closure times smaller than 0.10 second do not result in unacceptable increases in CPR and reactor peak vessel pressure for transients analyzed in Section 15, or provide either (1) justification that a smaller full-stroke closure time cannot occur, or (2) a minimum full-stroke closure time that will be incorporated in the Technical Specifications.

Response:

This historical stop valve closure time of 0.10 second has been upheld by all plant operating experience to date as a realistic bound. Sensitivities of key parameters to this closure time are not great, and the potential uncertainties are conservatively bounded by the generator load rejection event analysis. That analysis assumes a very conservative effective control valve closure time (about 0.08 second) based on partially open, parallel operating turbine control valves (full arc mode). That analysis bounds this stop valve closure event without need for additional specifications on TSV closure times. Our response to Question 211.088 provides further information on this subject.

Q. 211.179
(15.2.4.3.2)

The "closure of all MSIVs" transient (closure time 3 sec.) results in a position switch scram at 0.3 second and indirectly causes a scram trip of the main turbine and generator due to the decrease in pressure sensed by the main turbine. From Figure 15.2-5, it cannot be determined whether or not a turbine stop valve and turbine control valve scram occurs during the time interval that the MSIVs are closing from the full open position to the 90% scram position. Indicate in Table 15.2-5 the time at which the above indirect scram trips occur and the times at which the TSVs and TCVs become fully closed.

Response:

Following an MSIV full isolation, one of several automatic turbine protection devices may actuate if the operator does not take direct action to trip the turbines. Either the reverse power device, which senses directional power flow from/to the main generator, or the "anti-motoring" device, which senses "no load conditions" via turbine first stage pressure, would, most probably, trip the turbine when the steam supply diminishes. Experience indicates that upon steam interruption and stored energy present in the moisture separator/reheaters can supply the low pressure turbines with sufficient steam to maintain positive load on the generator for several seconds (10-20 seconds is not uncommon). This phenomenon results in a natural time delay in the actuation of the reverse power device. The anti-motoring device energizes a relay with a set of time delay closure contacts that provide input to the turbine trip logic when turbine first stage pressure decreases to 0. Coupling this feature with the fact that the MSIVs must travel well beyond 10% closed to affect steam throttle pressure and cause actuation of the "no load" device there is a time delay on the "anti-motoring" protective turbine trip. The result is that no turbine trip would occur in the 0.3 second time interval from start of MSIV full isolation to the generation of a reactor scram signal at an MSIV position of >10% closed. Since the MSIVs would be fully shut before a turbine trip would occur, the stop valve closure would have no impact on either the reactor peak pressure or the CPR transient. Specification of the times of which the TSVs and TCVs become fully closed in Table 15.2-5 is, therefore, unnecessary.

Q. 211.180

Question deleted.

Q. 211.181
(15.2.6.3.4)

For the "loss of AC power" transients, it is indicated that the trip of the feedwater turbines may occur earlier than simulated if the inertia of the condensate and booster pumps is not sufficient to maintain feedwater pump suction pressure above the low suction pressure trip setpoint. The simulation of this transient assumes sufficient inertia and, thus, the feedwater pumps are not tripped until the time that level reaches the high water level trip setpoint (L8). What quantitative effect on MCPR and peak vessel pressure would an earlier trip (insufficient inertia) of the feedwater turbines have?

Response:

Amendment 11 of September 1980 modified 15.2.6 in response to NRC Questions 211.096 and 211.097.

In the revised analysis, the feedwater pumps are not tripped on high water level, but on low pressure at the turbine due to MSIV closure. An earlier trip of the feedwater pump would produce lower peak pressure and less delta CPR due to void reactivity effects on the core (i.e., less subcooling means lower power).

Q. 211.182
(15.2.9.2.1)

Revise Table 15.2-12 to indicate the time that suppression pool alarms are received, the Technical Specification limit is exceeded, and the maximum value of the suppression pool temperature is attained.

Response:

The Technical Specification limit and alarm setpoint relative to suppression pool cooling initiation at WNP-2 is 90°F. For analysis purposes only, the initial suppression pool temperature was assumed to be 95°F. The scenario for this transient is described in Table 15.2-12. A note has been added to Table 15.2-12 indicating that at time zero the suppression pool temperature is 95°F. A note stating that the tech spec limit is 90°F has also been included to further substantiate the 10-minute operator action time. The time that the maximum suppression pool temperature is attained is given on Figure 15.2-18 and is approximately seven hours.

Q. 211.183
(15.3.1.3.2)

In the analysis of the one and two recirculation pump trip events in Section 15.3.1, a minimum design rotating inertia was used to obtain a predicted rate of decrease in core flow greater than expected. Specify the inertia value used for each applicable transient in Section 15 and the basis for selection. Discuss the sensitivity of MCPR and peak reactor vessel pressure to changes in the inertia value.

Response:

The inertia value used for pump coastdown in all transients except one and two pump trip events of Chapter 15 is 24,500 lb/ft^2 (see Table 15.0-2, Item 32). This is slightly conservative (larger) relative to the as-built value. The slower coastdown will give slightly worse results for the CPR and peak pressure values. For the one and two pump trip transients, a fast coastdown is conservative and a minimum time constant of approximately 4 seconds was used. The MCPR values and peak reactor vessel pressure remain nearly constant for events in the category, thus a sensitivity study on inertia is not justified.

Q. 211.184
(15.3.2.3.3)

From the text description in the Grand Gulf FSAR, it is indicated that the design of the hydraulic limit on maximum valve stroking rate is intended to make the fast closure of one and two recirculation valve transients less severe than the corresponding trip of one and two recirculation pump transients in Section 15.3.1. However, the results of events 15.3.1 and 15.3.2 in Table 15.0-1 indicate that for the one valve case this does not occur for WNP-2.

a. Explain why the transient result for the one valve closure event in Section 15.3.2 is more severe than the result in Section 15.3.1.

b. Explain why a scram occurs for the analysis of the "fast closure of one recirculation valve" transient in the WNP-2 FSAR in view of the fact that for the same analysis presented in the Grand Gulf FSAR, no scram occurs.

Response:

a. The water level swell which occurs for the one-pump trip (15.3.1) is not sufficient to cause a turbine trip, thus the transient is very mild. However, fast closure of one valve (15.3.2) is sufficient to cause level swell to reach L8 and initiate a turbine trip because core inlet flow decreases at 3 times the rate of the single pump trip event and the reactor feedwater control system cannot respond to the resultant steam flow/feed flow mismatch.

b. For WNP-2 the "fast closure of one recirculation valve" results in decreasing core flow and consequently a decrease in power. However, the drop in power is not as fast as the change in core flow. Thus, sensed water level increases due to the higher void content produced by the core power to flow imbalance and due to a mismatch in feedwater flow and vessel steam flow.

As a result, reactor water level swells to the L8 turbine trip setpoint which produces a reactor scram. The Supply System elects not to comment on the Grand Guld BWR/6 design or transient response with respect to differences from WNP-2.

Q. 211.185
(15.3.3)

For the recirculation pump seizure accident we note in Table 15.3-5 that credit is taken for nonsafety-grade equipment (L8-trip) to terminate this design basis accident (DBA). Section 15.3.3 of the Standard Review Plan requires use of only safety-grade equipment to mitigate the consequences of this DBA and that the safety functions be accomplished assuming the worst single failure of an active component. Re-evaluate this DBA with the above specific criteria and provide the resulting ΔCPR, peak vessel pressure, and percentage of fuel rods in boiling transition. Assume coincident loss of offsite power as required by the Standard Review Plan.

Response:

See the response to Queston 211.092.

Q. 211.186
(15.4.4.2.3)

You state that, for the incident involving an abnormal startup of an idle recirculation pump, "Attempts to start the pump at higher power levels will result in a reactor scram on flux." Since such a transient may be more severe than the one presented, supply the analysis beginning at a higher power level.

Response:

The start of an idle recirculation pump from higher power levels is not more severe than the one presently analyzed because the flow-based APRM thermal power trip would terminate the transient before peak surface heat flux could reach more severe levels. The analysis presented in 15.4.4 is a bounding case for pump starts because it utilizes Technical Specification Limiting Conditions for Operation (LCOs), a single operator error (SOE), and an abnormally high initial power level. The LCO assumed is the active recirculation loop operating at 50% of rated drive flow. The SOE assumed is the pump start with the cold leg water temperature in the idle loop at 100°F (nearly 400 degrees below its LCO temperature for pump start, i.e., nominal active loop temperature at operating pressure, 545°F, minus maximum allowed loop differential, 50°F, equals required temperature, 495°F verses 100°F). The initial power level was established as high as possible without experiencing an APRM trip (the transient comes within 30% of the thermal power trip). In actual practice, the power level established for a pump start is determined from power generation considertions in order to provide prudent margin from reactor scram. Higher initial power levels would cause a trip and thus produce less severe transients. Additional analysis is therefore unnecessary.

Q. 211.187
(15.4.4.3.3)

The narrative on page 15.4-19 for the "startup of an idle recirculation pump" transient indicates the core inlet flow rises sharply shortly after the pump starts. However, Figure 15.4-6 does not show this sharp change. Explain.

Response:

Curve 5, labeled drive flow 1(%) in Figure 15.4-6, shows that pump flow increases from 0% to 25% in about 3 seconds. The pump flow is limited by the position of the flow control valve which is at its minimum position. The core flow increases following the increase of pump flow. For the first 4-5 seconds, the core flow and inlet subcooling signals (Curves 1 and 4) trace over each other with core flow settling out at approximately 45% of rated. The effects of increased core flow and increased subcooling are reflected in the neutron flux which increases sharply. Section 15.4.4.3.3 has been revised to remove the subjective description of core flow response.

Q. 211.188
(15.4.5.3.2)

A maximum stroking rate of 30%/second and 11%/second was used for the fast closure of one and two recirculation control valves, respectively, in this section and for the events in Section 15.3.2. In the description of the recirculation control valve stroke rate in Appendix H.3.3.3.7.3.1, the bases for the above stroking rates are not provided. Provide supporting data to justify how the above stroking rates for the analysis of events in Sections 15.4.5 and 15.3.2 were obtained.

Response:

The design specification for the recirculation flow control valve is such that any single loop valve controller failure cannot cause a stroking rate >30%/second. These restrictions are based on the valve hydraulic characteristics. For a master controller malfunction, the design requirement is such that the maximum valve stroking rate for valve fast opening or closing in both loops is limited by each individual flow limiter to 11%/second. The above stroking rates have been confirmed from field observations (preoperational test programs on other BWR plants). During the WNP-2 Preoperational Test Program the proper functioning of the individual flow control valve (FCV) hydraulic actuators and the flow limiters will be demonstrated.

Q. 211.189
(15.2.9.3)

For the "failure of RHR shutdown cooling" event, specific input parameters for the models used to evaluate blowdown rate and suppression pool temperature are shown in Table 15.2-13 along with the analytical results in Figures 15.2-16, -17, -18, and -19. In connection with this, provide the following information:

a. Identify the analytical models used to evaluate blowdown rate and suppression pool temperature.

b. Revise Table 15.2-13 to include all the input parameters for the models to be identified in step a. and provide justification that the input parameters are conservative.

In addition, it is indicated that only a qualitative evaluation of the "failure of RHR shutdown cooling" transient is provided because the core behavior has been analyzed in Section 15.2.6. Update the FSAR to indicate a quantitative analysis has been provided.

Response:

a. The analytical computer codes used to evaluate blowdown rate and suppression pool temperature response are described in NEDO-10320 and NEDO-10320 Supplement 1, "General Electric Pressure Suppression Containment Analytical Model," and in NEDE-20877, "Long Term Containment Response for BWR."

b. Table 15.2-13 has been provided to show the key parameters which relate to the transient analysis. Providing a complete list of inputs would be impractical. The short and long term responses were obtained from the models referenced in a) above. Parameters in which variations might have significant effect upon the results were selected at the most conservative design basis values (e.g., minimum suppression pool mass) to maximize the containment pressure and temperature response. If some area of input is of special interest, it can be provided upon specific request.

Section 15.2.9 of the WNP-2 FSAR has been revised to remove the reference to the "qualitative evaluation."

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Q. 211.190
(15.4.5.3.3.1)

Explain the following from Figure 15.4-7, "Fast Opening of Main Recirculation Loop Valve at 30% Per Second":

a. What causes the drive flow to exceed 100% of rated and level out?

b. Why doesn't the core inlet flow exceed 100% of rated as a result of the drive flow exceeding 100% of rated?

Response:

a. The recirculation system is designed to supply more drive flow than rated when the flow control valve is at the wide open position.

b. Only one loop has been increased in flow from the minimum flow control valve position. The other loop is still operating at the minimum FCV position thus core flow is less than rated.

Q. 211.191
(15.4.5.3.3.2)

What causes the core inlet flow and drive flow to exceed 100% of rated in Figure 15.4-8, "Fast Opening of Both Recirculation Loop Valves at 11% Per Second"?

Response:

The recirculation system is designed to supply more than rated core flow at the wide open valve position, thus drive flow and core flow should be greater than 100% of rated.

Q. 211.192
(15.5.1.3.2)

Provide justification for use of a HPCS injection temperature of 40°F in analysis of the "inadvertent HPCS startup" transient. Referenced studies should be specified.

Response:

The condensate supply system (see Figure 9.2-9) is the normal source of water to the HPCS. Water in the condensate supply system is maintained at a minimum temperature of 40°F by immersion heaters in the condensate storage tanks, heat tracing on condensate piping outside buildings, and by placing buried condensate piping at least four (4) feet below the surface.

For the "inadvertent HPCS startup" transient, the HPCS injection temperature of 40°F and a minimum enthalpy of 11 Btu/lb were used. The injection temperature of 40°F and a minimum enthalpy is considered to be conservative given the condensate supply system design.

The transient as analyzed is very mild. If we were to assume the HPCS water to be at 32°F, the following would occur:

a. An additional estimate of 1-2% of the core average voids would collapse.

b. The maximum neutron flux would increase to approximately 105% of NBR.

c. No significant change (<1%) in the core average surface heat flux would occur.

d. CPR remains unchanged.

Q. 211.193
(15.5.1.2.3)

From the discussion of single failures for the "inadvertent HPCS startup" transient, it is indicated that a single failure of the pressure regulator or level control will aggravate the transient, resulting in reduced thermal margins. Provide the MCPR and peak vessel pressure values that result for this event with the most limiting of the above single failures considered in the analysis.

Response:

The single failures relevent to the "inadvertent HPCS startup" transient are either in the pressure regulator failure or level control failures. Neither failure is expected because both systems are in normal continuous operation at the time of the hypothesized event, and no significant change in their function is demanded by the event. They should simply continue their normal function. Inadvertent startup of the HPCS results in a mild depressurization. Upon depressurization due to addition of cooler water to the upper plenum, the pressure regulator tends to regulate the vessel pressure by closing the turbine control valves. When an active failure of the regulator system is considered (such that the turbine control valves would be kept wider open), further depressurization would be caused which would lead the event along a path similar to the pressure regulator failure-open transient (15.1.3). No significant change in thermal margin protection would occur. Since the water level rises when this transient begins, the level control system tends to reduce the feedwater flow and stop the level increase. When an active failure of the level control system is considered, the water level continues to increase. This situation is similar to the "feedwater controller failure with increasing flow" transient (15.1.2) and is bounded by that event. Since bounding transients with very similar scenarios to that of an "inadvertent HPCS initiation" with either an additional pressure regulator failure or feedwater level controller failure are presented in Chapter 15, additional analysis of this transient is not appropriate.

Q. 211.194
(15.0)

The response to Question 221.002 indicates that 8 x 8 fuel bundles with two water rods will be used at WNP-2 instead of the 8 x 8 fuel bundles with one water rod.

a. Have the transients and accidents in Chapter 15 been evaluated with 8 x 8 fuel bundles using one or two water rods?

b. If the transients and accidents in Chapter 15 were analyzed with the one water rod fuel bundles, what changes in MCPR, peak vessel pressure, percent of rods experiencing boiling transition, and the radiological consequences will result if the two water rods design is used in the analysis?

Reponse:

The transients and accidents in the WNP-2 FSAR have been evaluated with 8 x 8 fuel bundles with two water rods.

Q. 211.195
(15.6.5.3.2)

In connection with parameters and assumptions used for LOCA calculations inside containment, provide the following items to aid the staff in evaluating their conservatism:

a. An explanation as to why a MSIV closure time of 3.5 seconds in Table 6.2-3 was chosen. Elsewhere in the FSAR, either 3 seconds or 5 seconds were used in analyses.

b. Explain why the core heatup calculation in Table 6.3-2 assumes a bundle power consistent with operation of the highest powered rod at 102% of the maximum (technical specification) linear heat generation rate (LHGR) instead of operation at 104.18% of the maximum LHGR which is equivalent to a core thermal power of 3462 MWt.

c. Explain why the core thermal power value of 3462 MWt in Table 6.2-4 is indicated as 102% of licensed core thermal power (3323 MWt) instead of 104.18%.

d. A tabulation of all permitted axial power shapes addressed by LOCA calculations inside containment. Identify the least favorable axial shape (most conservative) associated with each break size and provide justification of its conservatism.

Response:

a. MSIV closure is complete 3.5 seconds after receipt of the isolation signal for Containment Engineering Calculations. This 3.5 seconds closure time includes a 0.5 second instrumentation delay before valve closure begins and a 3.0 second linear closure time. The 3.0 second closure is conservative based on the Plant Technical Specification Limiting Conditions for Operation (LCO) on MSIV closure times of 3.0 to 5.0 seconds. The faster closure of MISVs and the isolation signal at t=o maximizes the heat addition to the suppression pool.

Note that other plant unique analysis (e.g., ECCS, transients) may use other MSIV closure assumptions which are conservative for their particular application.

b. In accordance with 10CFR50 Appendix K, Paragraph I.A, a bundle power consistent with operation of the highest powered rod at 102% of the maximum LHGR is used for bundle heatup calculations following a LOCA. Bundle heatup does not feedback into the overall system calculations. Overall system response calculations are assumed conservatively at a higher power level (104.2%) to simulate higher vessel pressures, etc. This approach independently estimates containment response to a LOCA in the appropriately conservative manner.

c. The 3462 MWt is relative to 104.2% of rated reactor power. The containment functional design analysis is performed at the 104.2% of rated power level which corresponds to the 105% steam flow condition. Section 6.2.1.1.3.3.1.1 and Table 6.2-4 have been revised to reflect this information.

d. A sensitivity study and a discussion of the axial power shapes used in LOCA analysis are given in Section II.A.4.C.4 of NEDO-20566, Page II-188.

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<u>Q. 211.196</u>
(6.3)

Operating experience has shown that where thermocouples are used to verify ADS valve operation a "false" temperature increase may be indicated even though the valve has not operated. A direct indication of valve position or flow must be used. Specify how you will meet this requirement.

<u>Response</u>:

The WNP-2 position for indicating ADS/SRV valve position is presented in Appendix B Section II.D.3 of the FSAR. An acoustic monitoring system is being provided.

Q. 211.197
(6.3)

Section 6.3.2.2.1 of the FSAR states that the HPCS system will automatically switch over from the condensate storage tank (CST) to the suppression pool if the CST water supply becomes exhausted or is not available. Review of Figure 7.3-10b indicates that automatic switchover will only occur if the CST water level drops to the minimum level and activates any one of the four level switches (two per tank). However, in the event that CST water cannot be supplied to the pump while the CST water level is above the minimum water level, automatic switchover is precluded. Resolve this apparent discrepancy between the P&IDs and Section 6.3.2.2.1.

Response:

Figure 7.3-10b, High Pressure Core Spray, FCD, sheet 2, has been changed to Figure 7.3-8b in Amendment 10. The level indicators which provide the signal for automatic switchover of both HPCS and RCIC are mounted on a Seismic Category I standpipe in the reactor building. These level indicators as installed will sense a loss of suction supply as well as low level in the condensate storage tanks for the non-Seismic Category I portion of the condensate system. The piping downstream of the standpipe has been upgraded to Seismic Category I and will guarantee a suction supply during suction switchover to the suppression pool. Figure 6.3-1, HPCS P&ID has been revised to indicate these changes. See also the revised response to Question 211.146.

Q. 211.198
(6.3)

Expand the discussion in Section 6.3 to describe the design provisions that are incorporated to facilitate maintenance (including draining and flushing) and continuous operation of the ECCS pumps, seals, valves, heat exchangers, and piping runs in the long-term LOCA mode of operation considering that the water being recirculated is potentially very radioactive.

Response:

In response to Items II.B.2 an III.D.1 of NUREG-0737, WNP-2 has evaluated the ECCS, as well as RCIC and other systems required for long-term cooling, considering that the water being recirculated may be potentially very radioactive. One of the objectives of this evaluation was to determine that the release of large amounts of radioactive material will not limit personnel occupancy or degrade safety equipment by the radiation fields that may exist during and following the accident to the extent that required safety functions cannot be accomplished.

The evaluation assumed the source terms recommended in Regulatory Guides 1.3 and 1.7 and Standard Review Plan 15.6.5. It further assumes that these source terms are released instantaneously at the start of the accident. No one particular accident scenario is used; however, all systems which receive automatic initiating signals are assumed to be running. If these systems take suction from the containment atmosphere of the suppression pool, they are assumed to be contaminated. The systems assumed to be contaminated are as follows:

Ractor Core Isolation Cooling (RCIC)

Residual Heat Removal (RHR)

Low Pressure Core Spray (LPCS)

High Pressure Core Spray (HPCS)

Containment Atmosphereic Conrol (CAC)

Main Steam (up to the second isolation valve) (MS)

Main Steam Isolation Valve Leakage Control System (MSIV-LCS)

Primary Containment

Secondary Containment (due to leakage from primary containment and systems in secondary containment)

Standby Gas Treatment (SGT)

The reactor building is separated into radiation zones. within each radiation zone, all the significant contaminated fluid piping is located. In addition, all safety-related equipment is identified and located in each radiation zone. A "worst case" target. Next, the total integrated accident dose is calculted, taking into account direct shine from the contaminated system piping and from the primary containment building. The accident dose is calculated using a time period of six months because the integrated dose from the contaminated fluid systems does not increase significantly after six months. The accident dose is added to the 40-year integrated dose from normal plant operation. It is this total integrated dose for the "worst case" target which all the safety-related equipment in that radiation zone is evaluated against. If a particular piece is not qualified for the "worst case" total integerated dose, then specific calculations are performed. If necessary, the equipment is relocated, replaced or shielded.

In addition to determining that the equipment needed to mitigate an accident is not unduly degraded by the resulting radiation fields, the evaluation also identifies vital areas needed for post-accident operations (e.g., control room, sampling station, technical support center, etc.) and provides assurance that there is access to these vital areas.

An interim report has been submitted to the NRC identifying all the assumptions and methodologies used to do the evalution. Results of the evaluation in terms of accessibility and equipment reliability will also be presented. As required by NUREG-0737, Item II.B.2, the final report, including an evaluation of all safety-related equipment applicable has been completed and submitted.

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Q. 211.199
(6.3)

Discuss the design provisions that permit manual override on the ECCS subsystems once they have received an ECCS initiation signal. Also, include a discussion of any lockout devices or timers that prevent the operator from prematurely terminating ECCS functions. If there are plant procedures to cover this situation, indicate briefly what insturctions are provided.

Response:

Each ECCS subsystem (LPCI, LPCS, HPCS, ADS) is provded with manual override logic which allows the operator to terminate or delay automatically initated core cooling functions by closing the injection valve or stopping the pump or delaying system actuation. This is necessary in case an ECCS has failed or requires isolation to protect suppression pool inventory, or whose function is not longer needed when other core cooling functions are successful (thus reducing the long-term load on diesel generators). Other manual overrides are provided to allow the operator to terminate the core cooling function of a system, such as RHR, allowing the system to be utilized in other modes of post-accident operation (e.g., suppression pool cooling, containment spray).

The plant operators are instructed to use the manual override controls only when the core cooling function has been or will be successful. For example, the operator will not terminate the LPCS unless assured by at least two independent reactor vessel water level indications that water level is restored. The high drywell pressure initiation signal may still be above the trip point. For the case of the ADS, the operator can delay the initiation indefinitely or cause the ADS valves to close if initiation has occurred by means of the timer reset switches provided. Each reset action with initiating signals present, delays ADS initiation or causes the ADS valves to close for approximately 105 seconds. The operator can repeat the reset actions at his discretion. However, this will only be done when the operator is assured that reactor vessel water level is being restored by the HPCS, again by consulting at least two independent water level indications. The operator will terminate the LPCI mode of RHR to enter another mode of RHR only after consulting the water level indication and the avalability of other core cooling systems.

There is no time delay/lockout which prevents the operator from prematurely terminating and ECCS function. There is the 10-minute timer within the LPCI logic which prevents the operator from moving the RHR heat exchanger bypass valves E12-F048A/B from their full open position.

For all ECCS manual overrides (except ADS), automatic system actuation will not reoccur unless the initiation signals (high drywell pressure, low water level) have returned to normal and the logic is reset.

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Q. 211.200
(6.3)

Provide isometric drawings of the major piping for each ECCS subsystem (i.e., LPCI, LPCS, etc.) to aid in the evaluation of NPSH as possible equipment flooding. These drawings should show relative elevations and physical locations of the valves, suppression pool, primary containment, pumps, heat exchangers, and the lengths of ECCS piping. The location and number of each of the major valves should be shown on the isometric drawing.

Response:

In response to this question, submitted are seven (7) sets of blue lines containing the information requested.

Q. 211.201
(6.3)

Several plants have used sandbags or sand-filled tanks as biological shielding inside containment. In the event of a LOCA, these tanks or bags could be damaged and sand could be released. Release of sand inside containment could result in damage to the ECCS pumps. Identify any areas where sandbags or sand-filled tanks are used for biological shielding. What precautions would be taken to prevent ECCS damage if sand or similar material were released within containment?

Response:

WNP-2 does not use sandbags or sand-filled tanks (or similar material) for shielding inside containment.

Q. 211.202
(6.3)

A timer is used in each ADS logic. The time delay setting before actuation of the ADS is long enough that the HPCS system has time to operate, yet not so long that the LPCI and core spray systems are unable to adequately cool the fuel if the HPCS system fails to start. Manual reset circuits are provided for the ADS initiation signal and primary containment high pressure signals. By resetting these signals manually, the delay timers are recycled. The operator can use the reset pushbuttons to delay or prevent automatic opening of the relief valves if such delay or prevention is necessary. The operator may also interrupt the depressurization at any time by the same action. The operator would make this decision based on an assessment of other plant conditions.

Discuss in detail any criteria to be given to the operator (e.g., in emergency procedures, or operator training) that would form the bases for the operator's decision. Discuss the consequencs of interrupting ADS depressurization prior to reaching the injection pressure for low pressure systems.

Response:

At the present time, WNP-2 is still formulating the emergency procedures. This effort will involve incorporting BWR Emergency Procedure Guidelines (EPG) which, in part, provide the following criteria:

a. Monitor reactor pressure vessel water level and pressure and primary containment temperatures and pressures from multiple indications.

b. If a safety function initiates automatically, assume a true initiating event has occurred unless otherwise confirmed by at least two (2) independent indications.

c. Do not secure or place an emergency core cooling system in manual mode unless by at least two (2) independent indications, 1) misoperation in automatic mode is confirmed, or 2) adequate core cooling is assured. If an emergency core cooling system is placed in the manual mode, it will not initiate automatically. Make frequent checks of the initiating or controlling parameters. When manual operation is no longer required, restore the system to automatic/standby mode if possible.

The Emergency Procedures as they now exist specifically mention resetting the ADS timers in two precedures: 4.8.1 HPCS Failure Step 4.8.1.4 Step A.9 and 4.8.0.2.4 Total Loss of All Feedwater Flow Step 3.C.

Step 4.8.1.4, A-9 HPCS Failure-
"If reactor water is being restored and ADS timers have initiated, reset the timers at panel P.601."
"Note: ADS timers are not to be reset without permission of the Shift Supervisor."

Step 4.8.0.2.4, 3.C Total Loss of All Feedwater Flow-
"If ADS timers have been initiated, monitor reactor water level.
If Level can be restored and maintained with HPCS and RCIC, reset the ADS timers on Panel P.601."
"Note: ADS timers are not to be reset without permission of the Shift Supervisor."

Resetting of the ADS timer as well as the interruption of ADS depressurization are both covered under the EPG as described above. The operator would not reset ADS unless he could confirm either adequate core cooling or ADS system misoperation by at least two independent indications.

In addition, the ADS function would only be required during the course of a plant transient in the event that the high pressure (HP) makeup systems failed.

Q. 211.203
(6.3)

Restricting orifices are commonly installed downstream of a pump to limit the maximum flow rate that could occur and prevent pump damage if the pump discharge line were to fail (i.e., pump runout protection). It is not clear whether or not restricting orifice plates will be used for the LPCI system at WNP-2. Figures 5.4-13a and 5.4-13b show a restricting orifice in the injection piping of each LPCI loop. However, note 9 on Figure 5.4-13a states that these orifices are recommended but not required.

Describe precautionary measures taken to reduce the potential for LPCI pump damage due to runout conditions.

Response:

Please refer to the revised response to Question 211.032.

Q. 211.204
(6.3)

Figures 6.3-53a, -53b, -54a, and -54b show the results of a break in a core spray line from the "lead plant" analyses. The assumed single failure shown on the figures does not appear to be the most limiting. It would appear that the LPCI diesel generator failure (Division 2) would be more restrictive than the LPCS diesel generator failure (Division 1), i.e., only LPCI loop A would be available to reflood the core. Explain why failure of the LPCI diesel generator (Division 2) does not result in a higher peak cladding temperature than that shown on Figure 6.3-54b.

Response:

Assuming a high pressure core spray (HPCS) line break, the worst single failue is the LPCS diesel generator (D-G failure (Division 1)). With this failure only 2 LPCI loops are available for reflooding the core. The LPCI is injected into the core bypass region and drains into the lower plenum through specified leakage paths (refer to NEDE-20566, Section 3.3, p. II-14 for further details). The flow allowed through these leakage paths is insufficient to completely drain the flow from 2 LPCI loops. Therefore, for the LPCS D-G failure case, there is a buildup of LPCI flow in the core bypass region. This water that builds up in the bypass region does not directly contribute to reflooding the core. These factors combine to produce correspondingly longer reflooding times (and hence higher peak cladding temperatures) for the LPCS D-G failure case when compared to the LPCI D-G failure case.

For the LPCI D-G (Division 2) failure case which leaves 1 LPCI and 1 LPCS available for reflooding the core from Division 1, the flow of the 1 LPCI is allowed to drain through the leakage paths. Also, although limited by counter current flow limiting (CCFL) considerations, some of the LPCS flow passes through the fuel bundles and into the lower plenum thereby providing core spray heat transfer and directly contributing to the reflooding of the core.

Q. 211.205
(6.3)

Resolve the following discrepancies or inconsistencies:

a. Table 1.3-3 and Figure 6.3-2 state that the HPCS system will deliver 6350 gpm at a differential pressure (vessel to pump suction) of 200 psid. Table 6.3-2 indicates that HPCS will deliver 6250 gpm at the same differential pressure.

b. Table 1.3-3 and Figure 6.3-6 state that the LPCS system will deliver 6350 gpm at a differential pressure (vessel to drywell) of 128 psid. Table 6.3-2 indicates that the LPCS system will deliver 6250 gpm at a differential pressure of 122 psid.

c. Table VI of Figure 5.2-6 indicates that the top of the active core is 360.3 inches above vessel zero. Figure 5.3-2 indicates that the top of the active core is 366.31 inches above vessel zero.

d. Subsection 6.3.2.2.4 of the FSAR does not mention the relief valves (F088A and F088B) that are installed on the suppression pool suction pipes for loops A and B. These valves are the same size as the loop C valve (F088C). See the response to Question 211.027 and Figures 5.4-13a and 5.4-13b.

Response:

a. The HPCS system is designed so that with a 200 psid differential between the suction source vapor space pressure and the RPV, the pump will deliver a flow of 6350 gpm to the vessel nozzle. Allowing 100 gpm for leakage in the internal piping, 6250 gpm will be delivered to the core region of the vessel.

b. The LPCS system is designed so that with a 122 psid differential between the drywell and the reactor, the pump will deliver a flow of 6350 gpm to the vessel nozzle. This translates to a flow of 6250 gpm to the core region by permitting a leakage rate of 100 gpm in the internal piping. By allowing for drywell-to-wetwell vent submergence of 6 psi, the 122 psid becomes 128 psid; i.e., the vessel to drywell psid must increase to 128 psid to provide the specified 122 psid between the suppression pool suction source and the reactor vessel.

c. The top of active fuel is 366.3 inches above vessel zero. Table VI of Figure 5.2-6 has been revised to show the correct value.

d. See revised 6.3.2.2.4 and Table 5.4-4.

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Q. 211.206
(6.3)

The ECCS discharge line fill systems require additional clarification. Provide the jockey pump characteristics (head, capacity, etc.) and the maximum expected leakage rates for each system discharge piping.

Response:

The jockey pumps are shown on the following ECCS system flow diagrams:

FSAR FIGURE NO.	SYSTEM	PUMP IDENTIFICATION
3.2-7	High Pressure Core Spray	HPCS-P-3
3.2-7	Low Pressure Core Spray	LPCS-P-2
3.2-8	Reactor Core Isolation Cooling	RCIC-P-3
3.2-6	Residual Heat Removal	RHR-P-3

All four pumps are identical; their characteristics (head, capacity, etc.) are given in Table 211.206-1.

The jockey pumps pressurize the following piping within the valves listed in Tables 211.206-2 through 211.206-5.

JOCKEY PUMP DESIGNATION	PIPING PRESSURIZED	VALVE LISTING
HPCS-P-3	Discharge piping of HPCS pump	Table 211.206-2
LPCS-P-2	Discharge piping of LPCS pump and RHR pump 2A	Table 211.206-3
RCIC-P-3	Suction and discharge piping of RCIC pump	Table 211.206-4
RHR-P-3	Discharge piping of RHR pump 2B and RHR pump 2C	Table 211.206-5

The leakage rates, estimated at 10cc/hour per inch of nominal valve diameter, are summarized in the following for the valves listed in Tables 211.206-2 through 211.206-5.

JOCKEY PUMP DESIGNATION	LEAKAGE RATES OF VALVES CONNECTED TO JOCKEY PUMP DISCHARGE PIPING
HPCS-P-3	530 cc/hour
LPCS-P-2	1340 cc/hour
RCIC-P-3	380 cc/hour
RHR-P-3	1540 cc/hour

TABLE 211.206-1

JOCKEY PUMP CHARACTERISTICS

A. Pump Data

Design Flow	25 gpm
Design Head	200 feet
Manufacturer	Crane Co. Figure 3065, size 2 x 9-1/2

Certified Pump Curve Data

	Head, ft.			
gpm	HPCS-P-3	LPCS-P-2	RCIC-P-3	RHR-P-3
0	212	214	209	212
10	210	210	207	210
20	207	207	205	206
30	203	203	202	202
40	197	197	195	197
50	190	188	185	189
60	182	178	180	181
70	170	162	168	169
80	155	161	155	156

B. Motor Data (Nameplate rating) HPCS-P-3, LPCS-P-2, and RCIC-P-3

HP	15	Full Load, amp	18.5
rpm	3500	Type	DP
phase	3	Frame	256T
Hertz	60	Manufacturer	Westinghouse
volts	460		

C. Motor Data (Nameplate rating) RHR-P-3

HP	15	Full Load, amp	17.4
rpm	3535	Type	P
phase	3	Frame	254T
Hertz	60	Manufacturer	Reliance
volts	460		

TABLE 211.206-2

LIMITS OF HPCS JOCKEY PUMP PRESSURIZATION

VALVE IDENTIFICATION	VALVE TYPE	VALVE FUNCTION	DESIGN LEAKAGE RATE (cc/hr.)
HPCS-V-23	M.O. 12" Globe	Containment isolation for HPCS pump discharge to suppression pool (X-49)	120
HPCS-V-4*	M.O. 12" Gate	Containment isolation for HPCS pump discharge to RPV (X-6)	120
HPCS-V-10	M.O. 10" Globe	System isolation for HPCS pump discharge to condensate storage tank	100
HPCS-V-24	16" Check	HPCS pump discharge line check	160
HPCS-V-26	Manual 3" Gate	HPCS pump discharge line check valve bypass	30
HPCS-RV-35	1" Relief Valve	HPCS-P-3 suction relief valve	10
HPCS-V-3	Manual 3" Gate	Condensate flush supply inlet block	30
		Total design leak rate, cc/hr	570

* Leaks only if reactor is at low pressure

TABLE 211.206-3

LIMITS OF LPCS JOCKEY PUMP PRESSURIZATION

VALVE IDENTIFICATION	VALVE TYPE	VALVE FUNCTION	DESIGN LEAKAGE RATE (cc/hr.)
LPCS-V-3	16" Check	LPCS pump discharge line check	160.0
LPCS-V-4	Manual 3" Gate	LPCS pump discharge line check valve bypass	30.0
LPCS-V-12	M.O. 12" Globe	Containment isolation for LPCS pump discharge to suppression pool (X-63)	120.0
LPCS-V-5*	M.O. 12" Gate	Containment isolation for LPCS pump discharge to RPV (X-8)	120.0
RHR-V-31A	18" Check	RHR pump 2A discharge line check	180.0
RHR-V-72A	Manual 3" Gate	RHR loop A flush out to radwaste	30.0
RHR-V-24A	M.O. 18" Globe	RHR loop A test line to suppression pool (X-47)	180.0
RHR-V-16A	M.O. 16" Gate	Loop A isolation for containment spray (X-11A)	160.0
RHR-V-42A*	M.O. 14" Gate	Loop A isolation for RPV discharge (X-12A)	140.0
RHR-V-53A*	M.O. 12" Globe	Loop A isolation for reactor recirculaion piping intertie (X-19A)	120.0
RHR-V-27A	M.O. 6" Gate	Loop A isolation for suppression pool spray (X-25A)	60.0
RHR-V-11A	M.O. 4" Gate	Loop A isolation to suppression pool (flow during RHR exchanger cond. mode (X-47))	40.0

TABLE 211.206-3 (Continued)

VALVE IDENTIFICATION	VALVE TYPE	VALVE FUNCTION	DESIGN LEAKAGE RATE (cc/hr.)
LPCS-V-25	Manual 3" Gate	Condensate flush supply inlet block	30.0
LPCS-RV-18	1-1/2" Relief Valve	LPCS-P-1 test line relief valve	15.0
RHR-V-122A	18" Check Valve	Steam supply to RHR heat exchanger A	180.0
RHR-V-74A	M.O. 2" Globe	RHR heat exchanger A vent - shell side	20.0
RHR-RV-1A	3/4" Relief Valve	RHR test line - loop C relief valve	7.5
RHR-V-714A	Manual 3/4" Globe	Drain for RHR heat exchanger A level transmitter	7.5
RHR-V-80A	Manual 3/4" Globe	RHR heat exchanger A drain connection	7.5
RHR-V-26A	M.O. 4" Gate	RHR heat exchanger A outlet to RCIC	40.0
RHR-V-60A	Sol. O. 3/4" Gate	Process sampling connection to heat exchanger A outlet	7.5
RHR-RV-25A	1" Relief Valve	RHR test line loop A	10.0
RHR-V-63A	Manual 3" Gate	Flush supply for shutdown cooling loop A	30.0
		Total estimated design leakage, cc/hr:	1695.0

Leaks only if reactor is at low pressure.

TABLE 211.206-4

LIMITS OF RCIC JOCKEY PUMP PRESSURIZATION

VALVE IDENTIFICATION	VALVE TYPE	VALVE FUNCTION	DESIGN LEAKAGE RATE (cc/hr.)
RCIC-V-11	8" Check	Prevent reverse flow into condensate storage tank supply	80.0
RCIC-V-30	8" Check	Prevent reverse flow into suppression pool supply (X-33)	80.0
RCIC-V-13*	M.O. 6" Gate	Containment isolation for RCIC pump discharge to RPV (X-2)	60.0
RCIC-V-22	M.O. 6" Gate	System isolation for RCIC pump discharge to condensate storage tank	60.0
RCIC-V-19	M.O. 2" Globe	Containment isolation for RCIC pump discharge to suppression pool	20.0
RHR-V-26A	M.O. 4" Gate	System isolation to RHR loop A	40.0
RHR-V-26B	M.O. 4" Gate	System isolation to RHR loop B	40.0
RCIC-RV-17	1" Relief Valve	RCIC-P-3 discharge pressure relief valve	10.0
RCIC-V-606	Manual 3/4" Globe	2" RCIC(5)-1 vent	7.5
RCIC-V-47	Manual 2" Check Valve	RCIC condensate pump discharge	20.0
RCIC-V-51	Manual 1" Globe	RCIC-P-1 pump casing drain	10.0
RCIC-V-104	Manual 3/4" Globe	RCIC-P-1 pump casing vent	7.5

TABLE 211.206-4 (Continued)

VALVE IDENTIFICATION	VALVE TYPE	VALVE FUNCTION	DESIGN LEAKAGE RATE (cc/hr.)
RCIC-V-46	M.O. 2" Globe	Auxiliary cooling supply	20.0
RHR-RV-36	6" Relief Valve	RHR steam condensing mode return	60.0
		Total estimated design leakage, cc/hr:	515.0

* Leaks only if reactor is at low pressure.

TABLE 211.206-5

LIMITS OF RHR JOCKEY PUMP PRESSURIZATION

VALVE IDENTIFICATION	VALVE TYPE	VALVE FUNCTION	DESIGN LEAKAGE RATE (cc/hr.)
RHR-V-31B	18" Check	RHR pump 2B discharge line check	180.0
RHR-V-72B	Manual 3" Gate	RHR Loop B flush out to radwaste	30.0
RHR-V-24B	M.O. 18" Globe	RHR Loop B test line to suppression pool (X-48)	180.0
RHR-V-16B	M.O. 16" Gate	Loop B isolation for containment spray (X-11B)	160.0
RHR-V-42B*	M.O. 14" Gate	Loop B isolation for RPV discharge (X-12B)	140.0
RHR-V-53B*	M.O. 12" Globe	Loop B isolation for reactor recirculation piping (X-19B)	120.0
RHR-V-27B	M.O. 6" Gate	Loop B isolation for suppression pool spray (X-25B)	60.0
RHR-V-11B	M.O. 4" Gate	Loop B isolation to suppression pool (X-48) (RHR ht. exch. cond. mode)	40.0
RHR-V-23	M.O. 6" Globe	Reactor Head spray (X-2)	60.0
RHR-V-49	M.O. 4" Gate	System isolation for RHR pump 2B discharge to radwaste	40.0
RHR-V-31C	18" Check	RHR pump 2C discharge line check	180.0
RHR-V-114	Manual 3" Gate	RHR loop C flushout to radwaste	30.0

TABLE 211.206-5 (Continued)

VALVE IDENTIFICATION	VALVE TYPE	VALVE FUNCTION	DESIGN LEAKAGE RATE (cc/hr.)
RHR-V-21	M.O. 18" Globe	RHR Loop C test line to suppression pool (X-26)	180.0
RHR-V-42C	M.O. 14" Gate	Loop C isolation for RPV discharge (X-12C)	140.0
RHR-V-122B	18" Check Valve	Steam supply to RHR heat exchanger B	180.0
RHR-V-74B	M.O. 2" Globe	RHR heat exchanger 1B vent - shell side	20.0
RHR-V-26B	M.O. 4" Gate	RHR heat exchanger 1B outlet to RCIC	40.0
RHR-RV-1B	3/4" Relief Valve	RHR heat exchanger 1B Relief Valve	7.5
RHR-V-714B	Manual 3/4" Globe	Drain for RHR heat exchanger 1B level transmitter	7.5
RHR-V-80B	Manual 3/4" Globe	RHR heat exchanger 1B Drain Connection	7.5
RHR-V-60B	Sol. O. 3/4" Gate	Process sampling connection to RHR heat exchanger 1B	7.5
RHR-V-89	A.O. 10" Check Valve	RHR tieline to service water	140.0
RHR-V-104	Manual 10" Globe	RHR tieline to fuel pool cooling system	100.0
RHR-RV-25B	1" Relief Valve	RHR test line loop B relief valve	10.0
RHR-V-63B	Manual 3" Gate	Flush supply to shutdown cooling loop B	30.0
RHR-RV-25C	1" Relief Valve	Test line loop C relief valve	10.0

TABLE 211.206-5 (Continued)

VALVE IDENTIFICATION	VALVE TYPE	VALVE FUNCTION	DESIGN LEAKAGE RATE (cc/hr.)
RHR-V-63C	Manual 3" Gate	Flush supply - loop C return to RPV	30.0
RHR-V-86	Manual 3" Gate	Flush supply to RX head spray	30.0
		Total estimated design leakage, cc/hr:	2160.0

* Leaks only if reactor is at low pressure.

Q. 211.207
(6.3)
(5.2.2)

Subsection 5.2.2.10 of the FSAR states that the manual and automatic actuation of the relief mode for each safety/relief valve is to be verified in preoperational testing. Subsection 6.3.4.2.2 of the FSAR states that each individual ADS valve is manually actuated prior to or following a refueling outage. The spring setpoint (safety mode) of each valve is to be checked during bench tests during refueling outages. On what schedule will safety/relief valves, other than the ADS valves, be manually operated in the relief mode to verify that the valve is operational? How many of the safety/relief valves will be removed during each refueling outage to receive preventive maintenance and be tested?

Response:

During the startup test program, all of the main steam safety/relief valves (SRVs) are tested for proper operation. These tests include a documentation review to assure that the valves were properly installed, properly handled during transportation, storage, and installation, and were properly maintained as to cleanliness prior to performance of any tests. In addition, the air accumulator capacity, SRV nameplate set pressure and capacity are compared with the system design documentation for compliance. Actual mechanical tests include an operability check of the SRV discharge line vacuum breakers, actuation of the individual SRVs by each remote manual switch (main control room and/or remote shutdown panel) to demonstrate full lift, smooth stroke, and opening time characteristics, actuation of each SRV in the relief mode by stimulating its pressure switch, and a demonstration that each SRV accumulator (automatic depressurization system, ADS, and/or normal) has sufficient capacity to operate the SRV air actuator as required by the system design documentation. Finally, the ADS logic is fully tested for proper performance. Note that only the air actuator is exercised during many of the startup tests. This minimizes valve wear and unnecessary maintenance.

During the power ascension phase of the startup test program, each SRV is manually actuated at approximately 250 psig reactor pressure to demonstrate valve operability. At approximately 25% power each SRV is actuated a second time to measure discharge capacity and to demonstrate that no blockage in the SRV discharge line exists.

At commercial turnover the scope of SRV testing is governed by ASME Boiler and Pressure Vessel Code Section XI, Article IWV and Plant Technical Specifications. This article specifies the rules and requirements for inservice testing to verify operational readiness of the SRVs. This code section will be applied to both ADS and non-ADS valves alike. Supplemental tests of the ADS valves each operating cycle are required by the Technical Specifications. Applying Section XI, the SRV test schedule (in part) would be as follows:

Time Period	Number of Valves Tested	Total Tested	Elapsed Time
Cycle 1	6	6	1.5 years
2	4	10	2.5
3	4	14	3.5
4	4	18	4.5
5	4	4	1.0
6	4	8	2.0
7	4	12	3.0
8	4	16	4.0
9	2	18	5.0

Note that following the return to service of the testing SRVs, an operability demonstration will be performed in compliance with Section XI, Article IWV-3200.

This combination of startup test program, technical specification surveillance and inservice inspection testing satisifies industry standards for SRV operability demonstrations. As outlined in the response to NRC Question 211.051, the Supply System is participating in the BWR Owners' Group for TMI Concerns on SRV reliability and intends to consider the group's recommendations/improvements for application to our SRV program.

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Q. 211.208
(6.3)

Appendix A to Regulatory Guide 1.68, Rev. 2, summarizes the systems to be tested and the performance capabilities that should be demonstrated by each BWR applicant during the preoperational and initial test programs.

It is unclear if the ECCS subsystems are tested using normal and emergency power supplies. Provide assurances that both the normal and emergency power supplies are used to verify ECCS operability.

If emergency power is not to be used in the operability tests, justify the exception to the criteria of Regulatory Guide 1.68, Rev. 2.

Response:

Section 6.3.4.1, ECCS Performance Tests, states in part, "Finally the entire system (ECCS) is tested for response time and flow capacity taking suction from its normal source and delivering flow into the reactor vessel. This last series of tests is performed with power supplied from both offsite (normal) power and onsite emergency power." In addition, 14.2.12.1.7, 14.2.12.1.13, 14.2.12.1.14, 14.2.12.1.43, 14.2.12.1.48, and 14.2.12.1.50 outline individual system preop tests which culminate in the performance of the Loss of Power and Safety Testing preop (14.2.12.1.37). This latter test states as its purpose "to verify the integrated ability of the plant electrical distribution and safety systems to operate on normal and standby power sources during accident conditions" and that "loss of a single AC or DC distribution system division (exclusive of the HPCS diesel generator and batteries) will not prevent the remaining systems from actuating during an accident condition." Accordingly, the Initial Test Program for WNP-2 meets the intent of the guidelines of Regulatory Guide 1.68, Revision 2 for this item. Test procedures defining the program described above will be available for NRC review.

Q. 211.209
(5.2.2)
(6.3)

Provide assurance that your relief valve design is qualified (including testing after being subjected to an environment representative of an extended time period at normal operating conditions) to support your assumption that six of the seven ADS valves will operate. A quantitative history of safety/relief valve operation, including similar valves in other plants, should be included in this evaluation.

Response:

Presently valves of a similar but earlier design are installed and have been operated in Chinshan 1 and 2 and two SRVs of a modified design are in Browns Ferry 3. No unsatisfactory performance has been experienced on the modified design. A spare SRV of the earlier design, which was installed into Chinshan 1 and 2 was reported to have failed to fully reclose after a relief operation. The Chinshan 1 SRV did reclose with no further anomalies noted. A question exists as to whether gross leakage due to foreign material existed or if in fact the SRV did not fully reclose. A direct means of determining SRV position was not used. A Chinshan 2 SRV failed to reclose but did reclose fully after depressurizing the air inlet supply source. The failure to reclose has been attributed to a faulty solenoid and air valve assembly. The design of the SRVs in WNP-2 is a modified version of those installed in Chinshan 1 and 2.

The response to Question 211.051 contains additional information related to the qualification of Crosby valves.

Q. 211.210
(15.2.2)

The response to Question 211.088 is unacceptable. It is indicated that because the generator load rejection transient is not the most limiting transient, the small increase in surface heat flux that occurs for TCV closure times of less than 0.15 seconds will not affect the MCPR operating limit. Because reclassification of the generator load rejection transient to a moderate frequency event may result in it being the most limiting transient, even with reanalysis by ODYN, the effect of TCV closure times of less than 0.15 seconds should be reconsidered in the derivation of the MCPR operating limit.

Response:

The response to Question 211.088 is meant to emphasize the fact that reactor peak pressure and surface heat flux are not very sensitive to TCV closure time of less than 0.15 seconds. Our analysis assumes a very conservative closure time of 0.07 second for the partially opened TCV. The 0.15 seconds (full-stroke time) is not used other than indirectly which gives the 0.07 second closure time. Note that nominal TCV closure times are expected to be about 0.20 second, thus there are two conservtive steps in arriving at the analysis value of 0.07 second.

Q. 211.211
(15.3.3)

The response to Question 211.092 is unacceptable. Explain why the DBA-LOCA event is indicated as conservatively bounding the pump seizure event when different acceptance criteria are used for each. The pump seizure event is evaluated based on exceeding 10CFR100 guidelines whereas the main criterion for evaluating the DBA-LOCA event is a peak cladding temperature of 2200°F. Coordinate this request with Question 211.094.

Response:

See response to Question 211.185.

Q. 211.212

Our position on the emergency core cooling systems (ECCS) is that these systems should be designed to withstand the failure of any single active or passive component without adversely affecting their long-term cooling capabilities. In this regard, we are concerned that the suppression pool in boiling water reactors (BWRs) may be drained by leakage from isolation valves which may be rendered inaccessible by localized radioactive contamination following a postulated loss-of-coolant accident (LOCA). Accordingly, indicate the design features in the WNP-2 facility which will contain leakage from the first isolation valve in the ECCS lines taking water (suction lines) from the suppression pool during the long-term cooling phase following a postulated LOCA.

Response:

During normal operation, leakage is collected in sumps located in the ECCS and RCIC pump compartments in the reactor building and pumped to the radwaste building for processing. The ECCS and RCIC pump compartments are water resistant structures, the walls of which rise to a level above the suppression pool water level.

For the worst conceivable leak from the suppression pool in which the water level in the largest of these pumps compartments equalizes with the suppression pool water level at elevation 456′, at least 61-feet of NPSH over NPSH requirements on the ECCS pump performance reports is maintained for each pump. The suppression pool water temperature was taken at 80°F.

Additionally, the concerns in this question have been previously responded to in Question 212.003, in which WNP-2 committed to installing Class IE level instruments in each ECCS pump room. These instruments will be mounted just above floor level to allow sufficient time for the operator to identify and isolate the faulted ECCS line. Any ECCS leak can be isolated, including any packing failure on any ECCS pump suction valve.

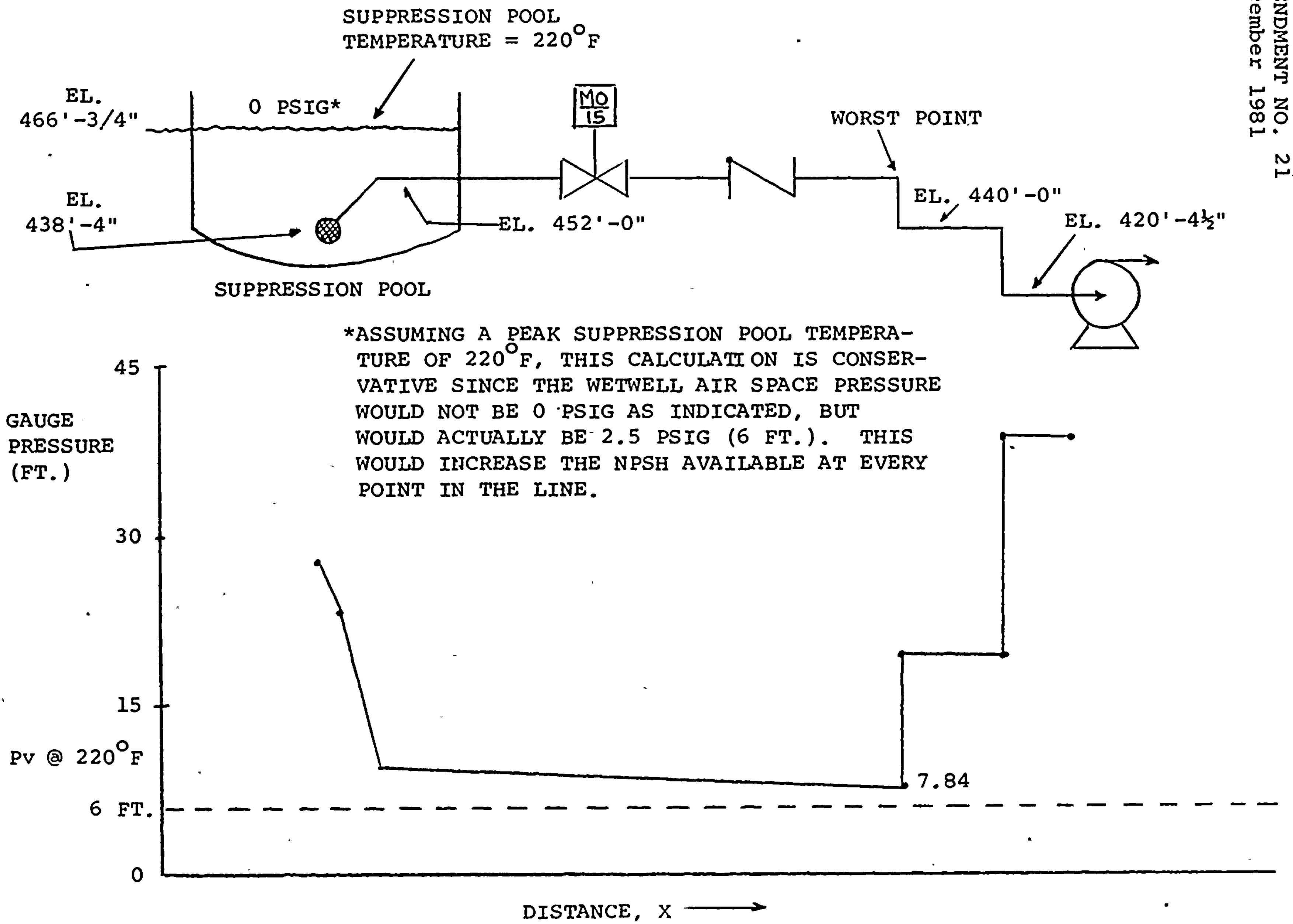
Q. 211.213

Calculations of NPSH available to ECCS pumps in BWRs are normally provided with reference to the pump suction. We are concerned that under certain post-accident conditions the potential may exist for damage to ECCS pumps from cavitation because of local flashing in the system suction lines. The potential can result, for example, from local elevation changes in the piping runs. Calculations of NPSH available at the pump suction may erroneously assume liquid continuity up to the point of pump suction. Provide an analysis with calculations which demonstrates that the NPSH available at all points in all safety-related pump suction piping is adequate to preclude local flashing and pump cavitation under the worst postulated conditions.

Response:

The ECCS systems which are involved are the RHR, LPCS, and HPCS systems. The RCIC system is also considered. Supply to the suction of the pumps comes from condensate storage or from the suppression pool. In the worst case, pump suction would be drawn from the suppression pool at high temperatures.

For each system, assuming a peak suppression pool temperature of 220°F, a plot was prepared of available NPSH versus location in the pump suction line. The HPCS system represents the worst case and is illustrated in Figure 211.213-1. At the worst point in the system, the available NPSH is 7.8+ feet which is above the 6 feet required to prevent flashing in the line. This calculation is conservative since the actual wetwell air space pressure at 220°F would be 2.5 psig (6 feet) not 0 psig as assumed per Regulatory Guide 1.1. This would provide an additional 6 feet of available NPSH at any point in the pump suction line.



*ASSUMING A PEAK SUPPRESSION POOL TEMPERATURE OF 220°F, THIS CALCULATION IS CONSERVATIVE SINCE THE WETWELL AIR SPACE PRESSURE WOULD NOT BE 0 PSIG AS INDICATED, BUT WOULD ACTUALLY BE 2.5 PSIG (6 FT.). THIS WOULD INCREASE THE NPSH AVAILABLE AT EVERY POINT IN THE LINE.

AMENDMENT NO. 21
December 1981

WASHINGTON PUBLIC POWER SUPPLY SYSTEM
NUCLEAR PROJECT NO. 2

HPCS

FIGURE 211.213-1

Q 212.1

Your discussion of internally generated missiles does not include the potential for damage to safety systems and/or the generation of secondary missiles inside containment as a result of a falling object. The discussion also does not address the potential for the failure of safety systems inside containment caused by secondary missiles generated by postulated primary missiles impinging on a component or structure inside containment. Provide a discussion of these two matters.

Response:

Please refer to 3.5.1.2.4 and 3.5.1.2.5 for the information requested.

Q 212.2

Provide a discussion of leakage between systems with respect to back leakage to the Emergency Core Cooling Systems (ECCS) through isolation valves and show conformance with the guidance contained in Regulatory Guide 1.45.

Response:

The isolation valves between the RCPB and ECCS lines are high quality, redundant, Class 1 valves, with position indication in the main control room. As stated in Regulatory Guide 1.45, "substantial intersystem leakage from the RCPB to other systems across passive barriers or valves is not expected." If intersystem leakage between the RCPB and ECCS should occur, it will be contained within the system. Since the ECCS systems are kept full of water, leakage will increase system pressure so that ECCS pressure indicators and high pressure control room alarms will alert the operator to potential overpressurization of the system from excessive leakage.

Q. 212.003
(6.3)

Your discussion of single failure does not adequately address ECCS passive failures during long-term cooling. Accordingly, provide a response to the attached Reactor Systems Branch Technical Position regarding the leak detection requirements for passive failures in the ECCS piping.

REACTOR SYSTEMS BRANCH TECHNICAL POSITION
Leak Detection Requirements for ECCS Passive Failures

The passive failures to be considerd are limited to leaks from valve stem packing and pump seals. The sum of these leak rates may range from essentially no leakage up to the equivalent of the sudden failure of the seal of the largest ECCS pump (e.g., about 50 gpm). It is the staff's position that detection and alarms be provided to alert the operator of passive ECCS failures during long-term cooling. The timing of these alarms should be such that the reactor operator has sufficient time to identify and isolate the faulted ECCS line. Provide the following information regarding the ECCS leak detection system:

a. An identification and justification of the maximum leak rate.

b. The maximum allowable time for operator action, including a justification of the time interval.

c. A demonstration that the leak detection system will be sensitive enough to provide an alarm to the operator, subsequent identification by the operator of the faulted line, and, finally, permit the operator to isolate the faulted line prior to the leak creating any undesirable consequences such as flooding of redundant equipment. The minimum time to be considered for this sequence of events is 30 minutes.

d. A demonstration that the leak detection system can identify the faulted ECCS train and that the leak is isolable.

Additionally, the ECCS lead detection system must meet the following standards: (1) control room alarm, and (2) IEEE-279, except single failure requirements.

Response:

a. The ECCS are capable of withstanding passive failure of valve stem packings and pump seals following a major pipe break. The maximum leakage due to a failure of this nature could be as high as 23 gpm from an HPCS, LPCS, or RHR pump seal failure. Valve stem leakage would be significantly less than this.

b. The maximum allowable time for operator action is determined as the shorter of the time required to flood to the level of an ECCS pump motor in the secondary containment, or the time required to drain the suppression pool to a level below that required for ECCS pump NPSH. The minimum established NPSH required for any ECCS pump for worst case (HPCS) is 31.6 feet. This is considered a conservative number. During HPCS pump performance testing (see Question 211.061) a constant suction head of 31.6 feet was available over the full flow range of the pump with no evidence of cavitation. With a minimum NPSH available of 36 feet, calculated in accordance with Regulatory Guide 1.1, and a leak rate of 23 gpm, there is about 5 days of operator time available before the NPSH becomes a problem. A Class 1E level instrument will be installed in each ECCS pump room and it will be mounted just above floor level. After the operator receives an alarm in the control room, there is at least 44 hours of operator time available before the water level reaches the bottom of an ECCS pump, assuming a 23 gpm leak rate into the smallest ECCS pump room (RHR C).

c. The sensitivity of the leak detection system is not vital to the identification and subsequent isolation of the faulted line prior to any undesirable consequences with at least 44 hours available.

d. Any ECCS valve stem packing leak can be isolated, including any packing failure on any ECCS pump suction valve. The packing is isolated by closing the valves which are double-seat, wedge knife gates. With a Class 1E level instrument in each ECCS pump room, the faulted ECCS train can be determined. The leak detection system will have Class 1E indication in the control room which meets IEEE 279-1971, except single failure requirements. In addition, a high level annunciator will also be provided.

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Q 212.4
(6.3)

Provide a list of all valves in the ECCS and their positions during normal operation, all ECCS modes of operation, and all shutdown modes of operation. The valve identification should be consistent with that shown on the process and instrumentation control diagrams.

Response:

This information is contained in the valve position tables on the ECCS process diagrams, Figure 6.3-2 (HPCS), Figure 6.3-6 (LPCS) and Figure 5.4-14b, c (LPCI/RHR).

Q. 221.001
(4.4)

Section 4.4 of the FSAR contains no discussion of "crud" buildup (i.e., deposits on the surfaces of the fuel elements) and its effect on both the critical power ratio (CPR) and the core pressure drop. Provide your assumptions regarding the sensitivity of the CPR and the core pressure drop due to variations in the amount of crud present. Provide data supporting your assumptions on crud buildup and discuss how crud buildup in the core would be detected.

Response:

In general, the CPR is not affected as crud accumulates on fuel rods (References 1 and 2). Therefore, no modifications to GEXL are made to account for crud deposition. For pressure drop considerations, it is assumed that a conservative amount of crud is deposited on the fuel rods and the fuel rod spacers. This is reflected in a decreased flow area, increased friction factors and increased spacer loss coefficients. The effect of this crud deposition is to increase the core pressure drop by approximately 1.7 psi which can be detected. Further discussion of crud (service-induced variation) and its uncertainty is discussed in Section III of Reference 3.

REFERENCES:

1. McBeth, R.V., R. Trenberth, and R.W. Wood, "An Investigation Into the Effects of Crud Deposits on Surface Temperature, Dry-Out, and Pressure Drop, with Forced Convection Boiling of Water at 69 Bar in an Annular Test Section", AEEW-R-705, 1971

2. Green, S.J., B.W. LeTourneau, A.C. Peterson, "Thermal and Hydraulic Effects of Crud Deposited on Electrically Heated Rod Bundles", WAPD-TM-918, Sept. 1970

3. General Electric Thermal Analysis Basis (GETAB): Data, Correlation, and Design Application", General Electric Company, January 1977, (NEDO-10958A).

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Q 221.02
(4.4.2)

The data base for the approved correlation of the CPR contained in GEXL is for 7x7 fuel bundles and 8x8 fuel bundles having one water rod. However, you have not provided a substantial data base to support the use of the GEXL code to calculate the CPR of the 8x8, two water rod fuel bundles proposed for the WNP-2 facility. Accordingly, demonstrate that the GEXL correlation cited above is applicable to the fuel bundles proposed for the WNP-2 facility by comparison to applicable data. Our requirement in this matter must be satisified prior to issuance of an operating license for the WNP-2 facility. Alternatively, you may increase the limiting value of the minimum critical power ratio (MCPR) by 0.05 to account for the uncertainty in using the GEXL code for the analysis of the 8x8, two water rod fuel elements.

Response:

Extensive full-scale boiling transition tests for the 8x8 two water rod design such as the fuel assembly for Hanford-2 have been conducted in the GE ATLAS test facility. It has been proven that the approved 8x8 GEXL correlation with the appropriate R-factors for the two water rod design can equally well predict the data as the one water rod bundle, with a mean ECPR (ratio of the predicted critical power to the measured data) of 0.9879 (∿1.2% conservative) with a standard deviation of 0.0234. Therefore, any MCPR limit penalty due to GEXL correlation is not justifiable. A licensing topical report was transmitted to NRC in October, 1978. Reference: Letter, from R.L. Gridley (GE) to D. Eisenhut and D.F. Ross (NRC), General Electric Information Report NEDE-24131, "Basis for 8x8 Retrofit Fuel Thermal Analysis Application", October 5, 1978.

Q 221.03
(4.4.2)

In 4.4.2.5 of the FSAR, you state that: "There is reasonable assurance, therefore, that the calculated flow distribution throughout the core is in close agreement with the actual flow distribution of an operating reactor." Indicate whether this statement refers specifically to the WNP-2 calculations and identify the operating reactor which was used for the data comparison.

Response:

This is a generic statement and is applicable to Hanford 2. This statement is based on actual data reported in 1) "Core Flow Distribution in a Boiling Water Reactor as Measured in Monticello", NEDO-10299A, October, 1976 and 2) H.T. Kim and H.S. Smith, "Core Flow Distribution in a General Electric Boiling Water Reactor as Measured in Quad Cities Unit 1", NEDO-10722A, August 1976.

Q. 221.004
(4.4.2)

Your discussion on the flow distribution in 4.4.2.5 of the FSAR does not address: (1) the effect of uncertainties on the flow distribution; or (2) the effect of channel flow uncertainty, coupled with the other uncertainties listed in Table 4.4-6, on the MCPR uncertainty. Additionally, Table 4.4-6 does not address the flow distribution uncertainties. Accordingly, provide this information.

Response:

Table 4.4-6 entitled, "Description of Uncertainties (BWR/4 BWR/5)", is no longer in the amended version of 4.4. However, this table is in Reference 1 (NEDE-24011) of Section 4.4 as Table S.2-1.

The channel flow uncertainty has been inherently considered in its contribution to the MCPR uncertainty when evaluating the probability of a fuel rod subject to a boiling transition in establishing the safety limit MCPR, although it is not explicity specified in Table S.2-1. The uncertainties described in Table S.2-1 are essentially the independent parameters upon which the channel flow (or the core flow distribution) uncertainty depends, except the R-factor and the critical power uncertainties.

In establishing the GETAB safety limit, a BWR core model incorporating these parameter uncertainties (as given in Table S.2-1) is utilized to evaluate the probability of a fuel rod being subject to a boiling transition by performing a core power and flow distribution calculation through an iterative process by equalizing the pressure drop from the lower plenum to the upper plenum for each fuel assembly. Therefore, the channel flow not only depends on the flow-related parameters such as the total core flow, channel flow area, friction factor multiplier, and the channel friction factor multiplier, but also depends on the core power distribution. The calculated core power distribution is directly dependent on TIP readings and the total core power, through the parameters like feedwater flow, feedwater temperature, and reactor pressure. In addition to those power-related parameters, the channel flow (or flow distribution) is also affected by the core inlet temperature during the pressure drop iteration process.

In conclusion, the channel flow uncertainty is not an independent parameter contributing to the MCPR uncertainty. Although it is not specified in Table S.2-1, its effect has been included in evaluating the probability of a boiling transition during a core wide power and flow calculation.

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Q. 221.005
(4.4)

In 4.4.4.5.2 of the FSAR, you state that:

> "... analytical models of the individual flow path were developed as an independent check of the tests...When using these models for hydraulic design calculations..."

Provide the equations comprising the model, including your assumptions. Provide a comparison of the results of this model with physical data.

Response:

The FSAR has been amended and this statement is now found in Section 4.0 of Reference 1 of 4.4 of the FSAR. As stated in the reference, flow through the bypass flow paths is expressed by the form:

$$W = C_1 \Delta P^{\frac{1}{2}} + C_2 \Delta P^{C_4} + C_3 \Delta P^2$$

The assumptions comprising the model are also discussed in Reference 1. A comparison of model predictions with test data is contained in the following reference:

> "Supplemental Information for Plant Modification to Eliminate Significant Incore Vibrations", (NEDE-21156), Class III, January 1976.

This reference is Reference 4-8 of NEDE-24011.

Q 221.06
(4.4.4)

Indicate what fraction of the fuel bundle coolant flow is water-rod flow.

Response:

At rated conditions, the water-rod flow makes up 1.19% of the total flow.

Q. 221.007
(4.4.4)

In 4.4.4.5.1 of the FSAR, you state that "...the nominal expected bypass flow fraction is approximately 10%." Indicate the fraction of calculated bypass flow for the WNP-2 core, including the uncertainty of this value.

Response:

The FSAR has been amended and this statement is no longer found in the FSAR directly. However, this bypass fraction is quoted in Reference 4-7 of NEDE-24011.

The calculated bypass flow fraction for WNP-2 at rated conditions is 10.0% of the total flow. The one-sigma uncertainty of the bypass flow is estimated to be 2.5%.

Q. 221.008
(4.1.4)

Identify the name of the computer program cited in 4.4.4.5. Provide references which document the code.

Response:

This computer program is no longer cited in 4.4.4.5. However, a general discussion of this program appears in Section 4.0 of NEDE-24011.

The digital computer program used for thermal hydraulic analysis is a proprietary code which has not been documented in the form of a Licensing Topical Report to the NRC.

The code is a parallel flow path computer program used to perform the steady-state BWR reactor core thermal-hydraulic analysis, as is described in 4.1.4.6. Program input includes the core geometry, operating power, pressure, coolant flow rate and inlet enthalpy, and power distribution within the core. Output from the program includes core pressure drop, coolant flow distribution, critical power ratio and axial variations of quality, density, and enthalpy for each channel type. This computer program has been used in one form or another in the design and licensing of all BWR 2 through 6 class plants.

The code is available for review at General Electric in San Jose.

Q. 221.009
(4.4.4)

In 4.4.4.6.7 of the FSAR, you state that the most limiting condition for thermal-hydraulic stability occurs at the end of core life with power peaking toward the bottom of the core. Indicate whether the typical values of core stability provided in this section are based on the core characteristics at the end of core life. If not, provide values of the decay ratio for this condition. Provide the power profile and the void reactivity coefficients used for this analysis.

Response:

The amended 4.4.4 references Section S.2.4 of NEDE-24011 which does state that normally the most limiting condition occurs at the end of core cycle life.

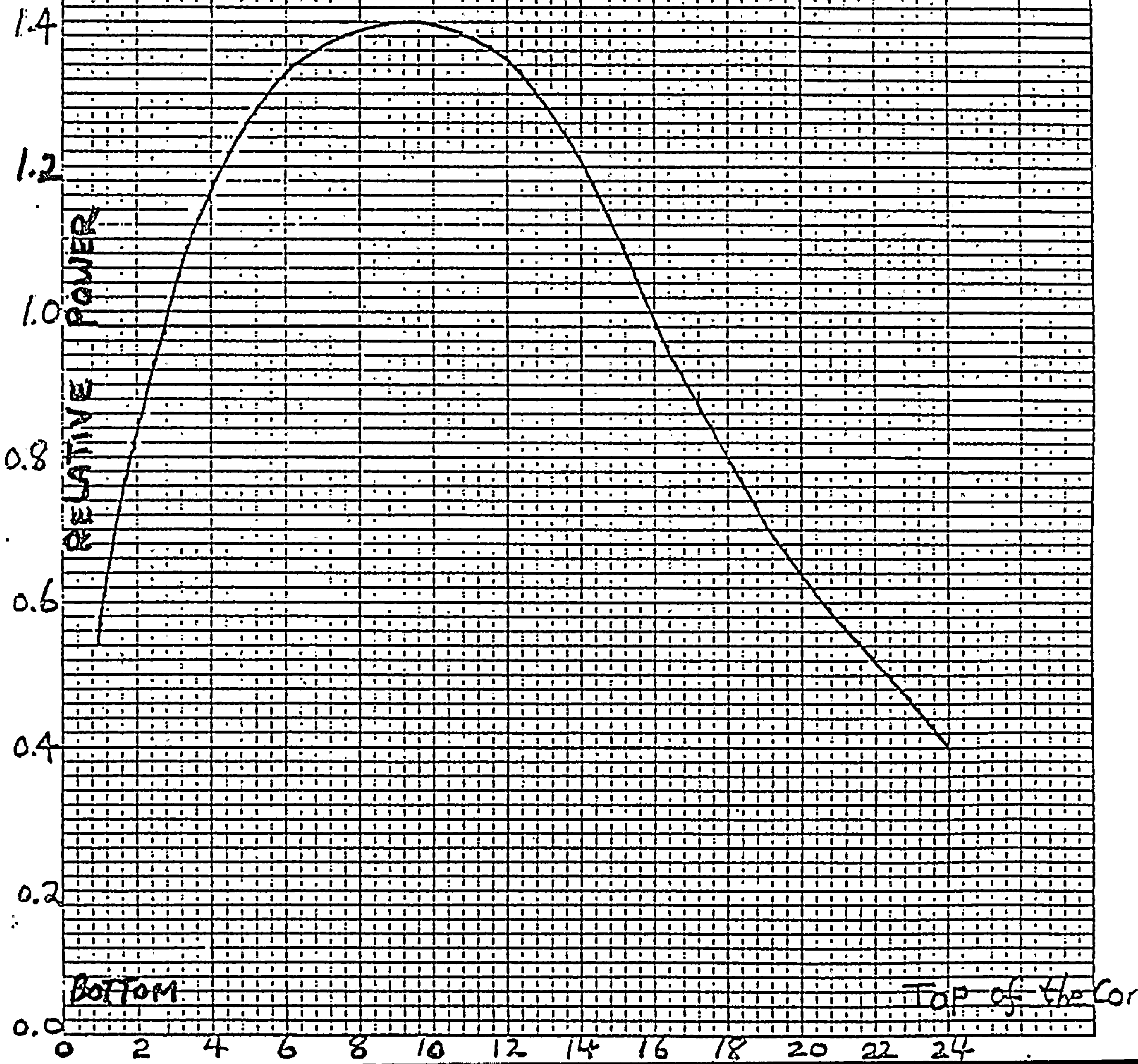
The core stability results provided in Table 4.4-7 are based on core characteristics near end of cycle 1* condition, which is the most limiting for cycle 1* plant operation.

The void reactivity coefficient and axial power profile used in the analysis are provided in the attached Figures 1 and 2, respectively.

*Note: Core stability data for those cycles beyond cycle 1 will be provided with the reload license application.

FIGURE 2

AXIAL POWER Profile used in HANFORD 2
FSAR STABILITY Calculation
(Question 221.9)

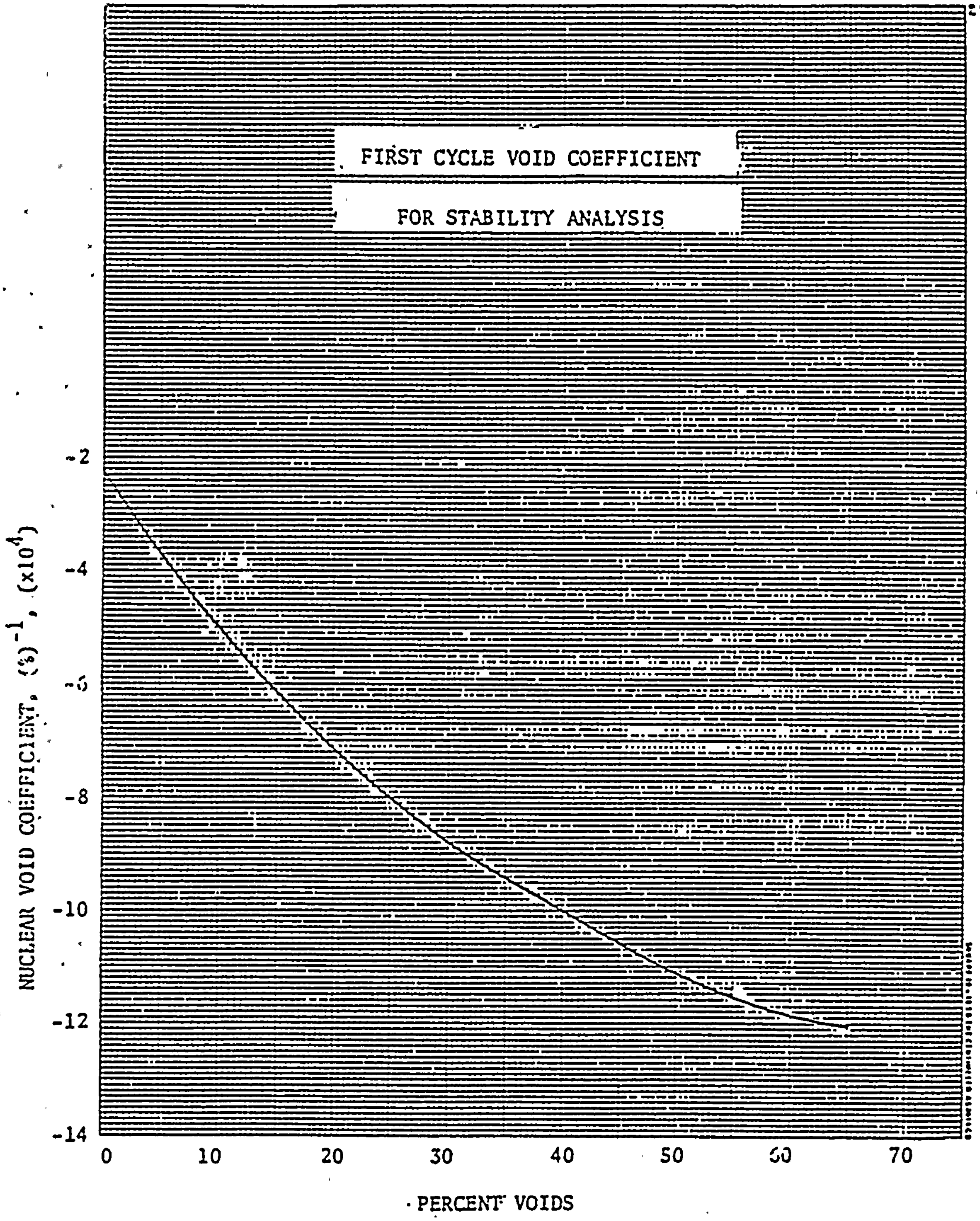


Q 221.10
(4.4.4)

In 4.4.4.6 of the FSAR, you state that as new experimental or reactor operating data are obtained, the analytical model is refined to improve its capability and accuracy. This implies that a comparison of older versions of the model with test data, as shown in Figure 4.4-4, are meaningless for the WNP-2 facility if it has been analyzed with an updated version. Indicate whether the comparisons of the analytical model with the test data, as given in Figure 4.4-4, are based on the same version of the model as was used for the WNP-2 facility. If not, provide comparisons using the present WNP-2 model. In addition, provide a description of the code. While you may reference a submittal on another docket, references to KAPL reports on the code, STABLE, are unacceptable.

Response:

The comparisons of the model with data, as given in Figure 4.4-4, are based on the same version of the model as was used for WNP-2 facility. The stability licensing topical report, NEDO-21506, provides a description of the analytical methods used in the code as well as model qualification through comparison with test data.



WASHINGTON PUBLIC POWER **SUPPLY SYSTEM** NUCLEAR PROJECT NO. 2	HANFORD 2 - FIRST CYCLE VOID COEFFICIENT FOR STABILITY ANALYSIS	FIGURE 221.009-1

FIGURE 2

AXIAL POWER Profile used in HANFORD 2 FSAR STABILITY Calculation (Question 221.9)

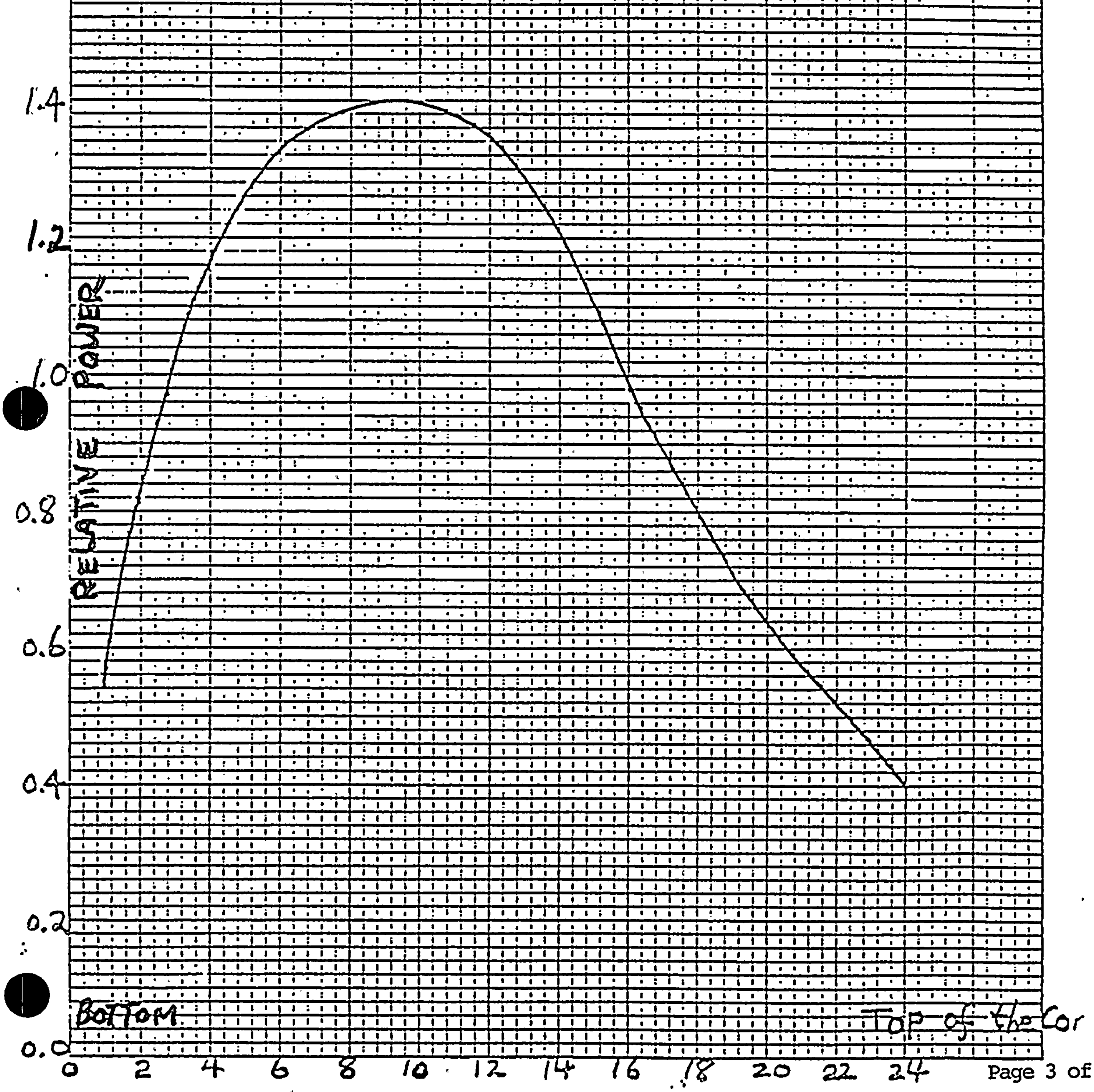


Figure 221.009-2

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Q. 221.010
(4.4.4) .

In 4.4.4.6 of the FSAR, you state that as new experimental or reactor operating data are obtained, the analytical model is refined to improve its capability and accuracy. This implies that a comparison of older versions of the model with test data, as shown in Figure 4.4-4, are meaningless for the WNP-2 facility if it has been analyzed with an updated version. Indicate whether the comparisons of the analytical model with the test data, as given in Figure 4.4-4, are based on the same version of the model as was used for the WNP-2 facility. If not, provide comparisons using the present WNP-2 model. In addition, provide a description of the code. While you may reference a submittal on another docket, references to KAPL reports on the code, STABLE, are unacceptable.

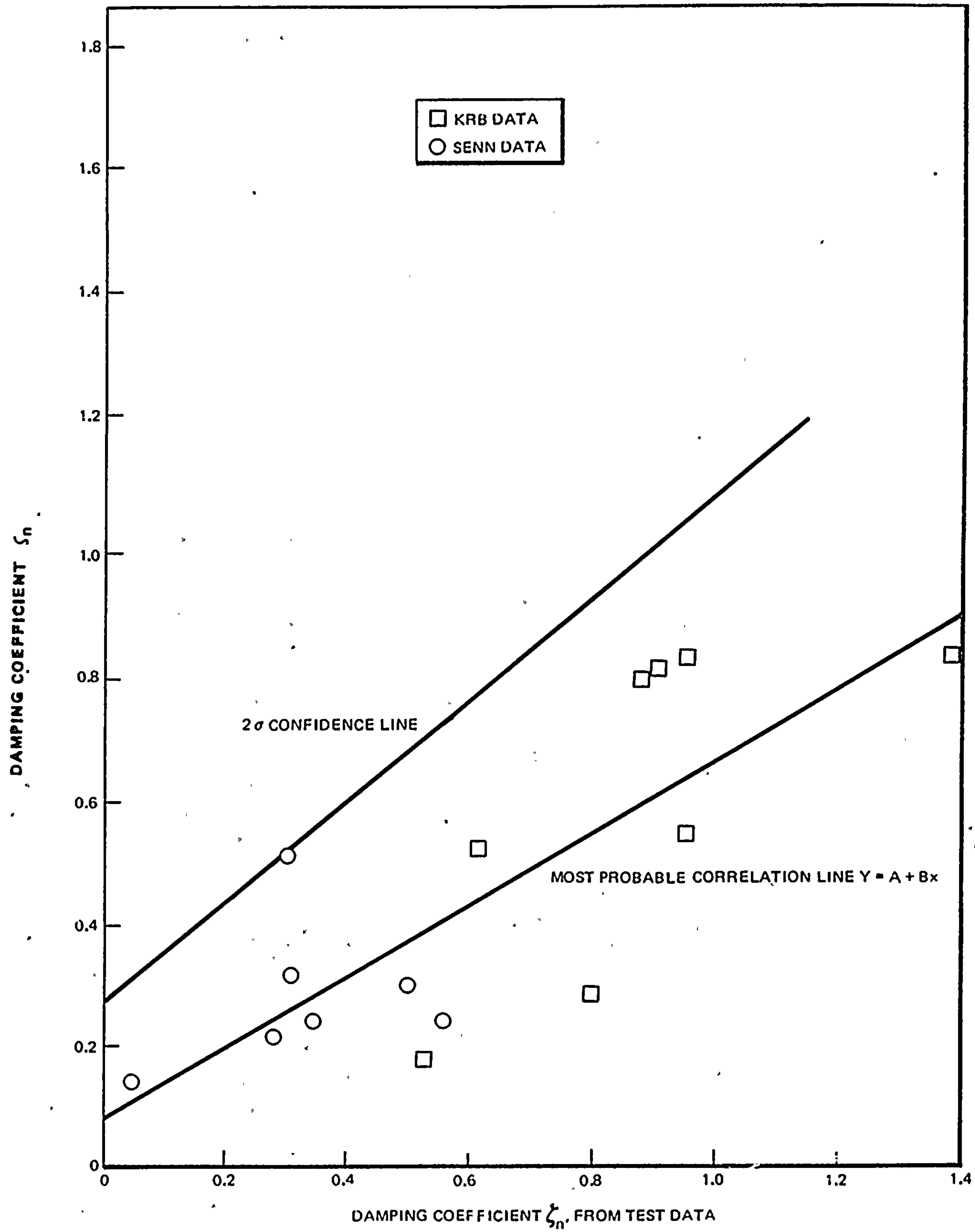
Response:

The amended 4.4.4 no longer contains Figure 4.4-4. Figure 4.4-4 is attached as part of this response (Figure 221.010-1).

The comparisons of the model with data, as given in Figure 221.010-1, are based on the same version of the model as was used for WNP-2 facility. The stability Licensing Topical Report, NEDO-21506, provides a description of the analytical methods used in the code as well as model qualification through comparison with test data.

REFERENCE:

Licensing Topical Report, "Stability and Dynamic Performance of the General Electric Boiling Water Reactor", January 1977 (NEDO-21506)



WASHINGTON PUBLIC POWER **SUPPLY SYSTEM** NUCLEAR PROJECT NO. 2	COMPARISON OF TEST RESULTS WITH REACTOR CORE ANALYSIS	FIGURE 221.010-1

<u>Q 221.11</u>
<u>(4.4.4)</u>

In 4.4.4.6 of the FSAR, you reference the GE Topical Report NEDO-10802 for the model used to perform system stability calculations. You also state that this model is periodically refined as new experimental or reactor operating data are obtained. Indicate whether the version of the model used for the analysis of the WNP-2 facility is described in NEDO-10802. If not, describe the changes.

<u>Response:</u>

The same version of the code described in NEDO-10802 has been used for WNP-2 facility System Stability calculations.

Q 221.12
RSP
(4.4.4)

We require that a loose parts monitoring (LPM) system be installed in the WNP-2 facility and that it be operational prior to startup testing. Accordingly, provide a description of your proposed LPM system so that we may evaluate it prior to issuance of an operating license. Our positions on the design criteria for a LPM system can be found in Section C of draft Regulatory Guide 1.133, "Loose-Parts Detection Program for the Primary System of Light-Water-Cooled-Reactors," September 1977. Indicate when you will submit a description of your proposed LPM system.

Response:

A Loose Parts Monitoring System (LPM) will be installed at WNP-2. The system has been specified and meets the intent of draft Regulatory Guide 1.133. The below description is taken from substantive parts of the LPM system specification:

> The loose parts detection sensors shall be mounted on the exterior of the primary coolant system and shall be located at natural collection points where loose parts will be most likely to impact. The general locations shall be:
>
> a. Main Steam Line A & B (26" line): 2 sensors.
>
> b. Feedwater Line A & B (12" line): 2 sensors.
>
> c. Recirculation Water Outlet A & B (24" line): 2 sensors.
>
> d. Reactor Vessel Bottom Head (3/4" to 1" CRD lines): 4 sensors.
>
> All sensors shall be piezo electric accelerometers. Sensors shall be provided with customized mounting blocks suitable for strapping around lines at the above general locations. Magnetic mounts are not permitted.
>
> The Loose Parts Detection System shall provide on-line monitoring of 10 channels with the following performance requirements:

a. Sensitivity at the sensor = 0.05 ft. lb.

(Function of mass of loose parts, impact velocity, geometry, and distance from sensor and surface being impacted).

b. System range = 0.05 to 5 ft. lb.

c. Alarm adjustment = 0.2 to 2 ft. lb.

d. Alarm setpoint accuracy, repeatability, stability, drift = 1% of adjustable range.

e. Alarm should be actuated if loose parts weighing 0.25 to 30 lb. impact with a kinetic energy of 0.5 ft. lb. on the inside surface of the reactor vessel within 3 ft. of a sensor.

f. Frequency range: 1.5 HZ to 15 KHZ within 3 db.

g. The signal associated with the loose parts impact shall be of sufficiently high magnitude such that background noises (running of pumps, flow induced vibrations, induced voltages due to RFI and magnetic couplings, etc.) do not prevent the detection of loose parts in the primary coolant.

The LPDS shall be provided with loudspeaker, volume control, audio amplifier, and channel selector switch for monitoring unfiltered signal of any one of ten channels. This audio monitoring shall be independent of any automatic/manual recording being performed at the same time. The loudspeaker, volume control, and channel selector switch shall be installed on the front control panel and loudspeaker (center point) shall be mounted at 5'0" above the floor.

One on-line four-channel-cassette, FM/direct tape recorder shall be provided to automatically record unfiltered signal upon detection of metal impact (by preselected alarm setting) by any one of ten channels. The tape recording system shall record preselected four channels simultaneously. For simultaneous manual recording of any four channels, a switching matrix shall be provided. This manual recording will be automatically bypassed upon detection of loose parts by any one channel. Provisions shall be provided for playing back any one out of four recorded channels through the loudspeaker.

For prevention of nuisance alarms, the LPDS shall have provisions for temporarily bypassing the monitoring of loose parts. The bypass signal will be provided by a normally open contact.

For locating and determining the impact energy of a loose part, a loose parts locator, operating on the principle of differences in transit time between sensors, with a printer shall be provided with the following provisions:

Location accuracy:	Within a cubic meter
Printout:	Date
	Time in hours, minutes, and seconds.
	Lag time of each channel from the reference channel.
	Distance of impact.
	Peak impact energy.

Provisions for testing, resetting and spurious indication shall also be included as part of this locator.

Sections 1.5.1.2.1, 4.4.6, and 7.7 of the FSAR have been revised to account for the LPM system.

Q. 221.013
(4.4.2)

In Table 4.4-6 of the FSAR, you list uncertainties used in the statistical analysis performed to establish the limit which ensures the integrity of the fuel cladding. Provide a discussion of the experimental data base used to derive the uncertainty values listed in Table 4.4-6 and provide appropriate references to this data base, where possible. In particular, describe the applicability of these values to the 8x8, two water rod fuel bundle which you propose for the WNP-2 facility.

Response:

Table 4.4-6 entitled, "Description of Uncertainties (BWR/4 BWR/5)", is no longer in the amended version of 4.4. However, this table is in Reference 1 (NEDE-24011) of Section 4.4 as Table S.2-1.

Except for the critical power uncertainty in Table S.2-1, all the uncertainties are unaffected by the two water rod assembly design. The GEXL critical power predictability for the 8x8 two water rod design has been shown to be similar to the standard one water rod design (see the response to Question 221.002), and therefore, the uncertainties in Table S.2-1 are conservatively applicable to WNP-2 facility two water rod fuels. The discussion of the uncertainties and the bases used to derive these uncertainties are described in the approved Licensing Topical Report, NEDO-10958-A, "General Electric Thermal Analysis Basis (GETAB): Data, Correlation, and Design Application", January 1977.

Q. 222.001
(6.2.1)

Describe in detail how you evaluated the mass and energy release data during the complete blowdown phase (i.e., during the first 100 seconds) for a postulated break in the recirculation line and in the feedwater line. Describe all analytical models which you used, including your assumptions. If any hand calculations were performed, provide the detailed calculations.

Response:

A detailed description of the analytical models and assumptions for a recirculation line break and subsequent blowdown is described in References 6.2-1 and 6.2-2 of FSAR 6.2.7.

The feedwater line break and subsequent blowdown is associated with annulus pressurization and is addressed in the response to Question 222.002.

Q. 222.002

Provide a detailed description of your analytical model to evaluate the mass and energy release rates for your analyses of the short-term annulus pressurization and the evaluation of the structural loads resulting from postulated pipe breaks for the first five seconds following the accident. Indicate the mass flux (LB_M/sec-ft2), the enthalpy (BTU/LB_M) and the flow area (square feet) as a function of time for each side of the break. Justify all your assumptions. Describe the break geometry assumed throughout the transient. Discuss the overall conservatism of your analysis.

Response:

Extensive documentation has been submitted by the Supply System to NRC concerning mass and energy release rates for short-term annulus pressurization in response to a post-construction permit item on the sacrificial shield design. Please refer to References 3.8-5, 3.8-6, and 3.8-7 of the FSAR for the requested information (referenced from 3.8.3.1.2 and revised 6.2.1.2). Copies of these references have been submitted to the NRC before and more recently to Mr. Jack Kudrick of Containment Systems Branch via Reference 1. The NRC in References 2 and 3 found the Supply System reports acceptable.

In summary, though, for the short-term annulus pressurization analysis and subsequent evaluation of structural loads, the analytical model to evaluate mass and energy release rates is the simple and conservative Moody's two phase critical flows model. The assumptions for the RFW and RRC Lines analysis is described in revised 6.2.1.2.

References:

1. Letter, D. L. Renberger (WPPSS) to L. Rubenstein (NRC), "Provision of Sacrifical Shield Wall Documents and Drawings", GO2-80-10, January 10, 1980.

2. Letter, R. C. DeYoung (NRC) to J. J. Stein (WPPSS), August 13, 1975.

3. Letter, R. C. DeYoung (NRC) to J. J. Stein (WPPSS), October 15, 1975.

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Q. 222.003

Describe in detail how the long-term steaming rates were developed for the time period following a postulated loss-of-coolant accident (LOCA). If the steaming rates were developed by hand calculations, provide the details of your method and list your assumptions. Describe the break flow area as a function of time. Discuss the overall conservatism of your analysis.

Response:

Once the reactor pressure vessel has been reflooded to the break elevation during the short-term response, energy is removed from the vessel by water flowing out from the break at a rate equal to the ECCS flow rate into the vessel (Ref: 6.2.1.1.3.4.2). The enthalpy of the flow spilling from the break is determined from an energy balance, as described in 6.2.1.1.3.4.4. Since energy is removed from the vessel by way of a closed cooling loop of subcooled water flowing from the suppression pool to the vessel and returning to the pool through the break, long-term steaming would not occur.

This analysis is conservative for long-term containment cooling since removal of energy by steaming would require that more energy be retained in the vessel, and therefore not released to the containment, in order to maintain the vessel fluid inventory at saturation temperature.

The break flow area is assumed to remain constant as a function of time following decompression of the broken line and/or closure of the main steam isolation valves during the first few seconds of the reactor blowdown.

Q. 222.004

Describe in detail how you evaluated the mass and energy release rates for a postulated steam line break. Describe the reactor vessel liquid swelling model you assume to be applicable during the transition from single-phase to two-phase flow at the postulated break. Indicate all your assumptions and discuss the conservatism of your method of analysis.

Response:

The evaluation model assumes single-phase steam flow for one full second following a steam line break loss-of-coolant-accident (LOCA). At one second the reactor level swells to the elevation of the steam line nozzle. The break flow changes instantaneously from single-phase to two-phase flow. The quality of the two-phase flow corresponds to the overall average vessel quality.

The above assumptions are all chosen for conservatism. The one second level swell is the fastest possible when evaluated with the models described in Reference 6.2-10 of FSAR 6.2.7. The use of the overall average vessel quality results in fluid qualities which are considerably lower than would actually occur. Thus, the drywell peak pressure, which increases with decreasing break flow quality, is maximized.

Further discussion and justification is contained in Section 2.3 of Reference 6.2-9 of FSAR 6.2.7.

Q. 312.009

A failure to close either of the motor operated dampers WMA-AD-51A-1 or WMA-AD-51B-1 (refer to Figure 9.4-1) in the event of a loss-of-coolant accident would provide an emergency filter train bypass path. Describe briefly what additional protection, if any, will be provided to prevent potential unfiltered inleakage via this pathway.

Response:

Failure of WMA-AD-51A-1 or WMA-AD-51B-1 to close is discussed in 9.4.1.2.1. The alarm referenced in 9.4.1.2.1 has recently been added to the design.

Q 312.10

Indicate the degree of leak-tightness of the check valves in the emergency filter train deluge water drain connections in the event of a loss-of-coolant accident. Similarly, describe the leak-tightness of the pathway through the water drains for the electric pan-type humidifiers of the air handling discharge duct.

Response:

Please see 6.4.2.3 for the requested discussion.

Q. 312.015

You indicated in your response to Item 312.005 of the first acceptance review that you will qualify protective coatings to the requirements of ANSI N101.4-1972. However, Regulatory Guide 1.54, "Quality Assurance Requirements for Protective Coatings Applied to Water Cooled Nuclear Power Plants", June 1973, endorses ANSI N101.4-1972 on the condition that ANSI N45.2-1971 be used in conjunction with it. Accordingly, indicate your intended degree of compliance with the recommendation of Regulatory Guide 1.54 in this regard.

Response:

The protective coatings applied on WNP-2, with the exception of NSSS equipment, is qualified to ANSI N101.4. Also, the protective coating contractor is required to have both a Quality Assurance program and procedures which meet the requirements of ANSI N45.2, "Quality Assurance Requirements for Nuclear Power Plants". This meets the requirements of Regulatory Guide 1.54.

The NSSS equipment was prime coated with inorganic zinc. Inorganic zinc coatings meet the requirements of ANSI N101.2, "Protective Coatings (Paints) for light Water Nuclear Reactor Containment Facilities". The coatings were manufactured and applied in accordance with the manufacturers instructions. However, Regulatory Guide 1.54 was not in effect at the time the NSSS equipment was ordered and consequently not invoked.

Although the Quality Assurance requirements of Regulatory Guide 1.54 were not invoked, the standard acceptance criteria for nuclear coatings, normally imposed by GE were in effect for the NSSS equipment coatings.

Q. 312.16

Provide an estimate, including your basis, of the total amount of hydrogen and methane gases that can be generated by the radiolytic and chemical decomposition of organic materials and protective coatings under the conditions which would exist following a design base accident (i.e., a postulated loss-of-coolant accident). Your estimate should be limited to those materials and coatings that would be directly exposed to the containment atmosphere.

Response:

The estimate of the total amount of hydrogen and methane gas that can be generated by the radiolytic and chemical decomposition of organic materials and protective coatings under the conditions of a postulated loss-of-coolant accident is discussed in the answers to Question 022.048.

Q. 231.001
(4.2)

Section 4.2 of the WNP-2 FSAR references the General Electric Topical Report, NEDO-20944, as the sole input for fuel design. During our review of this GE topical, another topical report "BWR/4 and BWR/5 Fuel Design, Amendment 1," NEDE-20944-1P dated January 1977, was submitted. It is our position that this report is applicable to the WNP-2 facility. Accordingly, revise your FSAR to include both GE topical reports.

Response:

Section 4.2 has been amended and NEDO-20944 and NEDE-20944P are no longer referenced. Instead, the amended 4.2 now references the "General Electric Standard Application for Reactor Fuel", (NEDE-24011-P-A, latest approved revision). NEDE-24011 in turn references NEDE-20944-1P.

Q 231.002
(4.2)

The NRC staff is concerned with the validity of fission product gas release calculations in most fuel performance codes, including GEGAP-III, for a fuel burnup greater than 20,000 MWd/tU. General Electric was informed of this concern on November 23, 1976, and was provided with a method of correcting fission product gas release calculations for fuel burnups greater than 20,000 MWd/tU. Since there was no question of the adequacy of GEGAP-III for fuel burnups below 20,000 MWd/tU, your calculations are acceptable only for that time in reactor core life when the peak local burnup is less than 20,000 MWd/tU. For fuel burnups in excess of this specific value, GEGAP-III calculations and all other affected analyses, must be redone using the correction cited above. Alternatively, you may submit a modified method which addresses the staff's concerns.

Response

NRC concern regarding the validity of fission gas release calculations for burnup greater than 20,000 MWd/tU was transmitted to General Electric in Reference 1. Reference 1 requested an analysis to describe the impact of higher fission gas release for GE operating power reactors (BWR 2-4 product line). Reference 1 did not indicate that such analyses would be necessary for licensing support for operating plants or that the NRC would require the application of the fission gas release correction factor in future analyses. Hence, the use of the correction factor is not part of the design-basis analysis.

Reference 2 provide GE's response to the NRC request. The NRC fission gas release correction was employed to modify the GEGAP(3) thermal performance code. The modified GEGAP code was then employed to calculate the following parameters as a function of exposure for 7x7 and 8x8 fuel:

1) Percent of fission gas released

2) Fuel rod internal pressure

3) Pellet-to-cladding gap conductance at the peak power axial position

4) Fuel centerline temperature at the peak power axial position

5) Fuel volume average temperature at the peak power axial position

These parameters have been compared with results of the standard (unmodified) GEGAP code in Reference 2.

The only affected safety analyses, as indicated in Reference 2, were the loss-of-coolant analyses. Although the calculations were not specifically performed for the WNP-2 fuel, the 8x8 analysis performed for early reflooding plants will bound the WNP-2 case. Consequently, based on the results indicated in Reference 2, the NRC fission gas release correction results in less than an 85^{o}F increase in calculated peak cladding temperature at a target planar average exposure of 30,000 MWd/t (The WNP-2 initial core is not expected to exceed 20,000 MWd/t).

REFERENCES

1. Ross, Denwood F., letter to Dr. Glen Sherwood, November 23, 1976

2. Sherwood, G. G., letter to Denwood F. Ross, December 22, 1976

3. "GEGAP-III: A Model for the Prediction of Pellet-Cladding Thermal Conductance in BWR Fuel Rods," NEDO-20181, November 1973

Q. 231.003
(4.2)

The staff has established a new requirement for routine fuel surveillance; this is discussed in Revision 1 of Section 4.2 of the Standard Review Plan. Accordingly, submit a description of: (1) the method you propose to use to detect fuel rod failures while at power; and (2) the post-irradiation fuel surveillance program for the WNP-2 facility.

Response:

Section 4.2 has been amended with two added sections. Section 4.2.4.2, "Online Fuel System Monitoring", and 4.2.4.3, "Post-Irradiation Surveillance"; which addresses items (1) and (2) above.

Q. 231.004

Revise those sections of your FSAR which relate to the reactor fuel design of the WNP-2 facility using one of the two options discussed below.

a. Option 1

Revise Section 4.2 of the WNP-2 FSAR to follow the guidance provided in the appropriate sections of Revision 1 to the Standard Review Plan (SRP). Our basis for this option is that this particular approach will provide assurance that all the information we need to complete our review will be submitted in the FSAR, thereby minimizing our need for further questions on the matter of your reactor fuel design.

b. Option 2

Change your FSAR to provide appropriate cross-references to those sections of your application which contain the basic information we need to follow the guidance contained in the SRP. You should note that this option will allow you to maintain Section 4.2 of your FSAR in its present basic format. However, this approach may lead us to ask additional questions since Section 4.2 in its present form does not appear to contain all the information we need to complete our review.

Response:

Section 4.2 has been amended to follow the format of NUREG-0800 and satisfies Option 1 above.

REFERENCES:

1. NRC (O. D. Parr) to GE (G. G. Sherwood) letter, "Review of GE Topical Report NEDE-20944-P, 'BWR/4 & BWR/5 Fuel Design'", dated September 30, 1977.

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Q. 231.005

In preparing recent SERs for applications involving boiling water reactors, we have identified certain staff concerns which have been difficult to resolve in a timely manner. Accordingly, revise the appropriate sections of your FSAR to provide more detailed and specific information on the following matters:

a. supplemental calculations using the models in NUREG-0680 when evaluating your emergency core cooling systems;

b. periodic tests of channel box deflections;

c. the analysis of the combination of seismic loads with the dynamic loads resulting from a postulated loss-of-coolant accident;

d. pellet/cladding interaction;

e. end-plug wear in the water rods of the 8x8 fuel assemblies;

f. clad corrosion on the outside of the fuel elements (i.e., waterside);

g. control rod bowing;

h. cracking of the control rod blades due to stress-corrosion effects;

i. the effects of high fuel burnup;

j. fuel assembly design should gap analysis; and

k. the analysis of the fuel element internal pressure at end-of-core life.

Response:

The eleven issues in this question are generic concerns applicable to the General Electric fuel design. Recognizing that these issues have generally been handled generically but also realizing the need to incorporate this information on the WNP-2 docket for your ease of reference, the following response is provided.

a. General Electric recently transmitted supplemental calculations to the NRC, "Fuel Swell and Rupture Model - Experimental Data Review and Sensitivity Studies", May 15, 1981. This document contains a discussion of the first stress and circumferential strain data applicable to the BWR, and presents results from the sensitivity studies performed comparing the NUREG-0630 models with the current GE models.

Loop stress versus rupture temperature sensitivity studies were performed using a combination of the two curves (adjusted GE stress curve and NUREG-0630). These studies resulted in a change in PCT of $\leq$10°F. Even though this PCT impact is small, GE proposes to review the current stress model to incorporate the adjusted curve. Implementation of the adjusted curve will be coincidental with implementation of the complete LOCA model improvement package. Also, the document shows that NUREG-0630 perforation strain versus temperature curve is not applicable to BWR fuel and that substitution of a bounding NUREG-0630 curve into the current GE ECCS analysis has negligible effect on the peak clad temperature (PCT). Based on this, General Electric believes that the current GE strain model is valid for the BWR and should continue to be used for ECCS calculations.

Subsequently, the NRC has approved the revised rupture cladding model as is documented in the NRC letter "Supplementary Acceptance of Licensing Topical Report NEDE-20566A(P)". Section 6.3 has been revised to reflect WNP-2 plant specific analysis using the revised rupture cladding model.

b. General Electric Licensing Topical Report NEDE-21354-P describes the fuel channel design of specific concern. Included in Section 4.4.2 of this report is a recommendation to conduct periodic control rod driveline friction tests. Operating experience with this channel design has demonstrated that excessive deflections and subsequent channel wear are unlikely and consequently, the General Electric recommended periodic control rod driveline friction test is no longer deemed necessary. The technical specification requirements for periodic scram time testing and rod notch testing would provide an indication of a pending driveline friction concern. Should either of these tests suggest a driveline friction problem, the pressure test described in NEDE-21354-P (4.4.2) would then be used to isolate the cause.

The Supply System has initiated a channel management program for WNP-2. The elements of this program include:

- o Compiling complete operating history records for each channel.
- o Compiling complete analytical history records for each channel.
- o Measurement of post-operation channel box deflection.

This program has been accepted, see NUREG-0892, WNP-2 Safety Evaluation Report, Supplement No. 3, May 1983.

c. General Electric has completed development of fuel assembly loads model and results accepted criteria. A BWR/5 has been evaluated accordingly with acceptable results.

In response to specific NRC concerns about fuel lift, a plant unique analysis was performed for a recent BWR/5 project (sent to NRC June 8, 1981). A similar analysis will be performed for WNP-2.

d. The General Electric report, "Safety Significance of Pellet Clad Interaction in a BWR", provides a summary of General Electric's programs initiated to evaluate the extent and safety significance of PCI. The basic conclusion is that while PCI-induced fuel failures remain a commercially undesirable problem, it is not considered a safety concern. General Electric BWRs have been designed and licensed with provisions to accommodate operation with fuel cladding perforation and field experience confirms that plants do indeed operate within radiological technical specifications release limits. However, in keeping with the "as low as reasonably achievable" philosophy, General Electric has pursued an aggressive action plan aimed at the minimization of the induced fuel failures. Short and long-term design changes supplemented by plant operational restrictions have been implemented to ameliorate the effects of PCI. Additional improvements are currently being investigated in the continuing effort to minimize the occurrence of PCI.

e. General Electric observed wear on the water rods in 8x8R fuel assemblies in the fall of 1979. In Reference 4, it was concluded that the observed wear does not affect the functionality of the water rods in the bundle or plant safety.

Since the observed wear General Electric has modified the 8x8R water rod design. To improve the margin of reliability of the 8x8R fuel design, a modification to the water rod and spacer positioning/water rod has been developed. This modified design has shorter water rod and spacer positioning/water rod lower end plugs and modified expansion springs on the upper end plugs. These changes have been shown to be effective by successful operation of the short shank 8x8 fuel design and from extensive flow induced vibration testing. This modified water rod concept is being installed on new fuel as a prudent means of assuring increased margin or fuel reliability. Thus, the modification does not constitute an unreviewed safety question based on the criteria given in 10CFR50.59.

f. As indicated in the General Electric presentation given to the NRC in December 1979, the failures appeared to be associated with a metallic incursion in the feedwater.

General Electric (GE) has developed a proprietary corrosion test which detects clad susceptibility to this particular type of waterside corrosion. The Supply System will not utilize any GE grade fuel pins which have not been subject to this test. This will eliminate all susceptible clad from the WNP-2 environment.

g. General Electric's fuel surveillance program observations relative to fuel rod bowing are described in this report together with the results of analytical evaluations of the probable extent of fuel rod bowing. Also presented are the results of an extensive thermal-hydraulic test program performed to assess the significance of rod bowing on fuel assembly thermal-hydraulic performance. Based on the presented information, General Electric concludes that fuel rod bowing does not constitute a viable failure mechanism or represent a significant safety concern for General Electric fuel in boiling water reactors.

h. IE Bulletin 79-26 places requirements on BWR power reactors with an operating license to identify control blades which have high depletion and to remove these blades or show compliance with the shutdown margin requirements. These restrictions are due to an observed phenomenon in which cracking of the absorber tubes was determined to occur at high depletions resulting in a loss of B_4C. Additional requirements are included for destructive examination of high depletion control blades.

The bulletin is for information only for requisition plants, but it may be anticipated that control blade management programs will have to address several of the issues raised. While General Electric is currently engaged in both alternate tube material and alternate absorber development programs, they are long-term programs and no control blade design changes are anticipated in the near-term. Therefore, requisition plants would be expected to establish a blade management program which accounts for the potential loss of B_4C and its resultant reduction in blade lifetime. The requirements of the subject bulletin would be expected to be applicable, with the exception of the requirement for destructive examination of a control blade. The current and near-term efforts should provide the data to resolve the NRC concerns as to the applicability of the B_4C loss model, making destructive examinations in the future unnecessary.

General Electric has had a program in effect for some time to examine control blades from reactors with various operating histories, i.e., GE BWR Services Information Letter (SIL) No. 157, March 1979 (Reference 6).

i. The effects of high burnups on fuel thermal-mechanical design analyses was addressed in the proprietary General Electric presentation to the NRC on Extended Burnups, March 24, 1981. Burnups to 50 GWd/MT are considered in the stress analyses documented in NEDE-24011-P-A. This analysis is applicable to WNP-2 fuel. The NRC in the Safety Evaluation Report for WNP-2 indicates that they accept analysis on fuel rod internal pressure for rod peak burnups below 40,000 MWd/t. Concurrence with the NRC staff will be obtained before exceeding 40,000 MWd/t on the peak initial core fuel rod.

j. The analysis of fuel rod axial expansion is described in General Electric Licensing Topical Report, "Generic Reload Fuel Application", NEDE-24011-P-A (proprietary) and NEDO-24011, July 1979.

The results of the analysis verifies the fuel rod is designed to accommodate predicted acceptable fuel and cladding differential expansion.

k. The internal pressure is used in conjunction with other loads on the fuel rod cladding when calculating cladding stresses and comparing these stresses to the design criteria. This analysis is described in General Electric Licensing Topical Report, "Generic Reload Fuel Application", NEDE-24011-P-A (proprietary) and NEDO-24011, July 1979. The analysis results show that the calculated stresses on cladding can be accommodated.

REFERENCES:

1. Letter to L. S. Rubenstein (NRC) from R. H. Buchholz (GE), "General Electric Fuel Clad Swelling and Rupture Model", May 15, 1981.

2. NRC Letter, H. Bernard (NRC) to G. G. Sherwood (GE), "Supplementary Acceptance of Licensing Topical Report NEDE-20566A(P)", dated May 11, 1982.

3. Letter to V. Stello (NRC) from G. G. Sherwood (GE), "Information Concerning Feedwater Nozzles and Pellet Clad Interaction", November 10, 1976.

4. Letter to T. A. Ippolito (NRC) from J. S. Charnley (GE), "Water Rod Lower End Plug Inspection Results", July 28, 1980.

5. Letter to J. R. Miller from R. H. Buchholz (GE), General Electric Company Licensing Topical Report NEDO-23284, "Assessment of Fuel Rod Bowing in General Electric Boiling Water Reactors", April 6, 1981.

6. GE BWR Services Information Letter (SIL) No. 157, March 1979.

Q. 231.006

Section 4.2.3.1(4) of NUREG-0892 (WNP-2 SER) addresses the issue of water side corrosion. Although we do not understand the exact damage mechanism, we do understand that General Electric has a task force studying this problem and that you will meet with General Electric this summer to determine suitable preventive actions. After that meeting, please inform us of the measures that you will adopt to avoid fuel rod water side corrosion damage in WNP-2.

Response:

In a meeting with the NRC on September 9, 1982, General Electric identified a threshhold above which Crud-Induced Localized Corrosion (CILC) has been observed. In addition, GE has established a cladding material diversion program to assure that the CILC threshhold will not be exceeded in newly manufactured fuel bundles. NRC agreed in the September 9 meeting that this program is sufficient to preclude the occurrence of CILC.

The Supply System has assured that all cladding for WNP-2 initial core fuel bundles were manufacturing after General Electric initiated this program. Therefore, no further measures to eliminate this problem are necessary at WNP-2.

<u>Q 232.001</u>
(15.4.1)

General Electric has performed a generic analysis of the consequences of the continuous withdrawal of an out-of-sequence control rod during reactor startup. This analysis has been documented on the Hatch-2 docket (Docket No. 50-366). Adopt this analysis either by reference or submit it in its entirety on your docket.

<u>Response</u>

The detailed analysis of the consequences of a RWE in the startup range is provided in NEDM-23842, "Continuous Control Rod Withdrawal Transient in the Startup Range," April 18, 1978 by R. C. Stirn and J. F. Klapproth.

Q. 232.002

Provide values of the azimuthal peaking factor and the factor assumed to cover analytical uncertainties referred to in footnote 2 of Table 4.3.5 of the FSAR. Indicate how this peaking factor was calculated.

Response:

Section 4.3 has been amended. What was Table 4.3-5 is now Table 4.3-3.

The azimuthal peaking factor is derived from the results of a two dimensional transport calculation. The two dimensional analysis models the reactor bundle pattern in an r, θ geometry. Fluxes were calculated at the cylindrical core shroud surrounding the core. It is expected that the peaking factors at the shroud are greater than the peaking factors at the vessel wall. The peaking factor used for the Handord plant was 1.5 and the factor represents the peak angular flux divided by the mean angular flux.

In addition to the angular peaking flux, a safety factor of 1.5 was used. This factor was applied to ensure that the predicted values are conservative.

Q. 232.003

The Rod Block Monitor (RBM) setting of 107 percent shown on page 15.4-8 of the FSAR is inconsistent with the value given in Table 15.4-2. Clarify this apparent discrepancy.

Response:

The RBM setting of 106 percent is the correct value. The referenced text on page 15.4-8 has been changed to read as follows:

> Settings are 106%, 98%, and 90% of initial, steady state operating power at 100% flow.

Q. 232.004

Indicate whether the average enrichment of 2.33 percent shown in Table 15.4-12 is correct or whether it should be 2.23 percent as indicated in the GE Topical Report NEDO-20944, "BWR/4 and BWR/5 Fuel Design", October, 1976.

Response:

The core average enrichment of Hanford 2 is 1.88 percent, and the core is composed of bundles with average enrichments of 2.19 w/o, 1.76 w/o, and .711 w/o (natural uranium). The corresponding lattice enrichments, i.e., neglecting the natural uranium at the top and bottom of the bundles are 2.33, 1.83, and .711. Figures 3-3 and 3-5 of the GE Topical Report NEDO-20944-P, "BWR/4 and BWR/5 Fuel Design" dated October 1976, are outdated and the updated figures are proprietary and submitted separately to NRC. In addition, Table 15.4-12 (Page 15.4-49) is not referenced in the FSAR, does not apply to WNP-2, and has been deleted from the FSAR.

Q. 232.005

The Process Computer program developed by General Electric was developed for active core heights of 144 inches. We note that you propoed to use this program for the WNP-2 core whose fuel rods are 150 inches.

a. Indicate how this process computer program will be modified to accommodate the 150-inch fuel.

b. Additionally indicate whether the traveling incore probe (TIP) travel has been increased to cover your longer fuel, and

c. whether there are still 24 nodes or whether an additional node has been added.

d. Describe how the core averaged and peak linear heat generation rates are calculated.

Response:

a. The process computer stores the power and exposure distribution using 24, 6-inch nodes to represent the fuel with no corrections for the power generated above 144 inches as it is very small. The thermal margin calculations adjust for the power in the fuel above 144 inches by calculating the power in each fuel bundle above 144 inches as:

$$PTOP_{Bundle} = P(L,J,24)*ENDPF(ITYP)$$

where: P(L,J,24) is the power in the 24th node.

ENDPF (ITYP) is a constant, (fuel type dependent), defined as the fraction of the 24th nodes power generated above 144 inches.

The power is summed over all bundles as $\sum PTOP_{Bundle}$

A correction factor, PTOPF, is then applied to the thermal limit evaluations. PTOPF is calculated as:

$$PTOPF = (CTP - \sum PTOP_{Bundle})/CTP$$

where CTP is the Core Thermal Power.

b. The TIP travel will not be increased to 150 inches from 144 inches.

c. See Part (a) of this response.

d. No explicit calculations for core average linear heat generation is made by the Process Computer.

The peak linear heat generation rate is determine by searching all nodes for the maximum value of

$$\frac{P(L,J,K)*FLOP(L,J,K)*1000}{NRB(ITYP)*\Delta Z}$$

where:

P(L,J,K) = Fuel segment power, MW

FLOP(L,J,K) = Maximum rod power/average rod power in cross-section of fuel segment L,J,K (Local Peaking Factor)

NRB(ITYP) = the number of fuel rods/bundle type

ΔZ = 0.5 foot

Q. 271.001

In accordance with the requirements of General Design Criteria (GDC) 2 and 4 of Appendix A to 10 CFR Part 50, all safety-related equipment is required to be designed to withstand the effects of earthquakes and dynamic loads from normal operation, maintenance, testing, and postulated accident conditions. GDC 2 further requires that such equipment be designed to withstand appropriate combinations of the effects of normal and accident conditions with earthquake loads.

The criteria which we will use to determine the acceptability of your equipment qualification program for seismic dynamic loads are IEEE Standard 344-1975 as supplemented by Regulatory Guides 1.92 and 1.100 and Sections 3.9.2 and 3.10 of the Standard Review Plan. Accordingly, indicate the extent to which the equipment in the WNP-2 facility meets these requirements and the above requirements to combine seismic and dynamic loads. For equipment which does not meet these requirements, provide justification for the use of other criteria.

Response:

The safety-related equipment in WNP-2 has been evaluated using IEEE 344-1975 as supplemented by Regulatory Guides 1.92 and 1.100 and Sections 3.9.2 and 3.10 of the Standard Review Plan. There are two (2) exceptions to the use of these criteria. These are as follows:

a. Equipment which was tested using single frequency motion was qualified using the following parameters:

1. If the equipment is rigid (no resonant frequency below the ZPA of the applicable response spectra) the input motion must be greater than ZPA of the applicable response spectrum.

2. If the equipment has only one natural frequency, the test response acceleration was calculated. To account for possible cross coupling the acceleration found on the applicable response spectrum at the equipment's resonant frequency was multiplied by $\sqrt{2}$. If the test response acceleration exceeded that acceleration the test motion was considered as adequate.

3. If the equipment has multiple resonant frequencies, the response acceleration to tests at each of the resonant frequencies was calculated at the test frequency and at each other resonant frequency. The acceptance criteria was that the square-root-of-the-sum-of-the-squares (SRSS) of the responses at each of the natural frequencies be greater than the SRSS of the accelerations found on the applicable response spectrum multiplied by $\sqrt{2}$. This must be done for each resonant frequency of the equipment.

4. If the equipment has closely spaced modes the criteria of 3 above was used except the responses to the closely spaced modes were combined by absolute summing rather than SRSS.

b. For equipment which was panel or rack mounted, the maximum transmissibility of the panel or rack was found by a combination of testing and analysis. The ZPA of the applicable response spectrum was then multiplied by this transmissibility to find the required acceleration to the equipment. Test results of the equipment were then compared to this acceleration for all frequencies to establish qualification.

The only equipment in WNP-2 which will be affected by vibratory loading from postulated accident conditions is that equipment located inside of containment and pipe mounted equipment in the reactor building which is located between containment and the first anchor point (six directional restraint) outside of containment.

All equipment which experience hydrodynamic loads has been qualified to the absolute sum of the hydrodynamic loads and the safe shutdown earthquake loads.

Q. 271.002

Provide a list of all safety-related systems including a list of all safety-related equipment and support structures associated with each system. The equipment lists should indicate whether the equipment is supplied either by the nuclear steam supply system vendor or by the architect/engineer for the balance of plant. These lists should encompass all safety-related mechanical components, electrical, instrumentation, and control equipment, including valve actuators and other components such as active pumps and valves.

Response:

The Equipment Qualification Report referenced in Section 3.11 includes the current list of safety-related equipment used in WNP-2 as of the publication date of that document (Tables 271.002-1 and 271.002-2). The version printed was limited to level 1, 2, and 3 equipment with particular use codes (see explanation of use codes in these tables). For mechanical equipment, only active equipment is submitted. The complete list is kept current on our computer and is available at any time. A description of the codes used in the list are attached to the list.

The equipment furnished by General Electric Company, the NSSS contractor, is designated in the contract column as Contract 59 or any of the contracts beginning with 02. The remainder were supplied by the B.O.P. contractors. Our architect/ engineer is Burns and Roe, Incorporated.

WNP-2
CLASS 1-E EQUIPMENT LIST

SEISMIC QUALIFICATION INFORMATION

September 25, 1981

Washington Public Power Supply System
Richland, Washington 99352

TABLE 271.02 - 1

8109128

NOTE 1. Description of codes used in safety related equipment lists

Column Designation	Description
Equipment No.	The equipment piece number (EPN) is listed. It is composed of the system designation (a complete list is enclosed), a component code (list enclosed) and a unique identifier.
Description	A short narrative description of the equipment.
Contract	The contract under which the equipment was purchased. The contracts beginning with 02 and Contract 59 were with the NSSS supplier. The two digit contracts are for equipment purchased through our A/E and the three digit contracts indicate equip-ent purchased through contractors at the construction site.
Q.I.D.	The Qualification Identification is a six digit number indicating a file which contains all the qualification documentation for that EPN along with summary forms and plant walk-through records.
Q.S.	Qualification Status indicates the seismic/hydrodynamic qualification of the equipment. The following list shows the meaning of the codes used.

A - Acceptable, installed
B - Acceptable, reviewed but installation status not yet determined.
C - Acceptable, not installed
D - No documentation in files
M - Being requalified by analysis
N - Not Acceptable, requalification method not yet determined
P - Purchasing qualified replacement
Q - Qualified by ASME code qualification. Vibratory loading not considered significant
R - Not reviewed
S - Qualified to date for seismic criteria only
T - Being requalified by test

The second column shows the environmental qualification status, if available.

Column Designation	Description
USE	Contains codes which describe equipment use during accident and/or normal plant shutdown conditions.

The "USE" input field is a two digit field. The first digit shows the equipment operability requirement for accident mitigation, and the second shows the equipment operability requirements for Hot or Cold shutdown conditions.

X X

0 The equipment is not required before, during, or after an accident.

Example: Equipment in this category provides no active function, but may provide a passive function by containing radioactive material outside the Reactor Building. It need not be qualified to demonstrate operability, even under non-accident service environments.

1 Equipment that will experience the environmental conditions of design basis accidents for which it must function to mitigate said accidents, and that will be qualified to demonstrate operability in the accident environment for the time required for accident mitigation with safety margin to failure.

Example: Equipment in this category is required for accident mitigation of accidents analyzed in the FSAR. This includes: pumps, valves, electrical equipment, instrumentation to follow the course of an accident, etc.

2 Equipment will experience environmental conditions of design basis accidents through which it need not provide an active function for mitigation of said accidents, but through which it must not fail in a manner detrimental to plant safety or accident mitigation, and that will be qualified to demonstrate the capability to withstand any accident environment for the time during which it must not fail with safety margin to failure.

Column Designation	Description	
	Example:	Equipment in this category must not actively fail in a manner detrimental to plant safety, e.g. a motor operated valve that is normally shut would be categorized as a "2" if its inadvertent opening would be detrimental to plant safety. Equipment that provides only a passive integrity function on a potentially contaminated system will be categorized as a "2" and will have a "P" placed in the "EC" column.
		Category 2 will include all manual boundary, integrity, test and root valves which may be exposed to post-LOCA and radioactive drain system components (FDR and EDR).
	3	Equipment that will experience environmental conditions of design basis accidents through which it need not function for mitigation of said accidents, and whose failure (in any mode) is deemed not detrimental to plant safety or accident mitigation, and <u>need not</u> be qualified for any accident environment but will be qualified for its non-accident service environment.
	Example:	Equipment in this category is limited to the 1E/1M equipment in the "harsh environments" which is Safety-Related only to prevent the release of radio-active material and will not be exposed to post-LOCA radioactive fluids.
		This category will include the components of the Reactor Water Clean-up System downstream of the second containment isolation valve.
	4	Equipment that will not experience environmental conditions of design basis accidents and that will be qualified to demonstrate operability under the expected extremes of its accident service environment. This equipment would be located outside the Reactor Building.

Second Digit

<u>X</u> <u>X</u>

0	The equipment is not required to operate to shutdown the plant during normal conditions.

Column Designation	Description	
	1	The equipment is required to operate for Hot Shutdown only during normal plant conditions.
	2	The equipment is required to operate for Cold Shutdown only during normal plant conditions.
	3	The equipment is required to operate for both Hot Shutdown and Cold Shutdown during normal conditions.

Test

The test column describes the tests used to seismically qualify the equipment. It includes up to three digits. They are as follows:

X X X

First Digit - Method of determining natural frequency.

1 Resonance Sweep Test. A sinusoidal input (sine sweep) with continuously varying frequency is applied. The frequency band covers the range of frequencies from 1 to 33 hertz. This test is used as a resonance search test at low input (.2g-.4g) in support of sine Dwell (XX4) or sine beat (XX5) testing.

2 Resonance Analysis. The resonance of the specimen is determined by analysis. (The specimen is modeled using single degree of freedom oscillators.)

3 Reed critical test

4 Hammer blow

5 Attached Electromechanical Shaker (in SITU Test)

X X X Second Digit - Number of axes stimulated simultaneously

1 Single axis input. The input motion is applied to each principle axis independently.

2 Biaxial input. The input motion is applied to two principle axes simultaneously.

Column Designation	Description
3	Tri-axial input. The input motion is applied to each principle axes simultaneously.
4	Modified Bi-axial input. The specimen is mounted on the shake table in a fixture that supports the specimen at a 45° incline from the vertical. The input motion is then applied colinear with the specimen mounting. The input amplitude is adjusted by the 2 to account for resultant forces produced in the vertical and one principle horizontal axes. Thus, the time phasing of the input is in-phase for the axes (vertical and one horizontal) tested.
X X X	Third digit - Frequency content
1	Random Motion Multifrequency Test. The amplitude of which is controlled in 1/3 octave, or narrower, frequency bandwidth filters with individual output gain controls. Minimum duration of test is fifteen seconds (IEEE-344, 1975, 6.6.3.3).
2	Random Motion Multifrequency with sine beat superimposing. A composite exictation utilizing input motion of 1 above with sine beat or beats at peak frequencies in order to envelop the R.R.S. (IEEE-344, 1975 6.6.3.4).
3	Complex Wave. Not used (IEEE-344, 1975 6.6.3.5)
4	Continuous Sine Test (Sine Dwell). A continuous sinusoidal test conducted at the resonant frequencies determined from resonance search or analysis and/or near 33 hertz if no resonances are present between 1 and 33 hertz. (See response to 271.01 for acceptance criteria.)
5	Sine Beat Test. A test consisting of the application of sine beats of peak acceleration corresponding to resonance frequencies of the specimen and/or near 33 hertz if no resonances are present between 1 and 33 hertz. (See response to 271.01 for acceptance criteria.)

Column Designation	Description	
	6	Sine sweep test. A sinusoidal input with continuously varying frequency is applied. The input amplitude is equal to the ZPA of the RRS except at low frequencies where the value of the TRS may follow the RRS. Justification is provided.
	7	Both 1 and 5 were performed.
	8	Random Motion Multifrequency Test and Sine Beat Test. Both 1 and 2 were performed.
	9	Continuous Sine Test (Sine Dwell) Over a Frequency Range. A continuous sinusoidal test conducted in 1/3 octave bands over the frequency range 1 to 33 Hz.
ANL	Analysis used as described below:	
	X X	
	0 1	Static analysis is performed by applying the seismic forces through the center of gravity of the specimen in addition to all other applicable loads. A pre-condition to the use of static analysis is that the specimen must contain no significant resonances below the ZPA.
	0 2	Dynamic Analysis. The specimen is modeled to best represent its mass distribution and stiffness characteristics. A response spectrum model analysis technique or a time history analysis is used. Results are combined using the square-root of the sum of the square basis except for closely spaced in-phase modes where the absolute value is used.
	0 3	Extrapolation. The results of testing on a prototype specimen is analyzed and the results extended to cover a generic line of similar equipment. Where the differences are significant, justification is provided.
C	Compliance	
	Indicates which version of IEEE 344 was complied with. Not used at this time. (See qualification status.)	

Column Designation	Description
FREQ	The lowest natural frequency (in cycles per second) found in the equipment. If a "+" follows that frequency, no natural frequency was found up to and including that frequency.
T.M.	Type of mounting indicated by the following code: D - Duct mounted F - Floor mounted H - Hanger mounted P - Pipe mounted R - Rack mounted W - Wall mounted
H.L.	Hydrodynamic loads indicates whether or not the equipment is subjected to hydrodynamic vibratory loads caused by an accident condition. "Y" indicates yes; "N" indicates no.
LV	Level assigned to equipment. An identifier which will permit the sorting of the 1E/1M list into major pieces of equipment, instrumentation, and subcomponent parts.
Level 1:	Class 1E/1M composite equipment which requires qualification of the overall assembly. Each composite piece of equipment will be identified with a unique Equipment Piece Number (EPN) and will have the symbol "+" added to the end of the EPN. Motor operated valves would be listed as composite equipment with a level designation of 1. Other examples would include the diesel generator skids, pump skids, air handling units, filter/dryer assemblies, air compressors, etc. Level 2: A class 1E/1M component or instrument function which requires individual qualification. The instrument function is described by an instrument loop which could include a sensor, a switch, an alarm, and indicator and/or a controller. Whenever an instrument loop is identified as Safety-Related, the sensor will receive a Level 2 designation and all other instrument loop components will be designated Level 3.

Column Designation	Description	
	Example 1:	For a motor-operated valve, the valve body, valve motor, and external limit switches (if they have a Safety-Related function) are all Level 2 components.
	Example 2:	An instrument consisting of a flow element, flow transmitter, flow switch and flow indicator would have the flow element as Level 2 with the other components as Level 3.
	Level 3:	Any 1E/1M instrumentation component not included in Level 2.
	Example:	A flow transmitter associated with a 1E/1M flow element would be designated as Level 3.
	Level 4:	A subcomponent of a class 1E/1M component.
	Example:	Internal limit switch to motor operators for valves, dropping resistors, pressure transmitter circuit boards, wiring, indicating lights, etc.

Plant Location

Shows the plant location using the following abreviations for building followed by elevation in feet and specific location.

A - Auxiliary Buildings
C - Part of or within Primary Containment
D - Diesel Generator Building
L - Offsite Locale
M - Make-up Pump House
O - Outdoors on Site
P - Pump House
R - Reactor Building
S - Service Building
T - Turbine Generator Building
W - Radwaste/Control Building

MFG

Manufacturer: Contains the code prepared for the industry by Southwest Research Corp. indicating the company who manufactured the equipment. In a few cases where the manufacturer has not been determined, the supplier's code was put in this column until the manufacturer has been determined.

Column Designation	Description
MFG Model No.	The manufacturer's model number. In the cases where this has not been determined, General Electric purchased part drawing number or other applicable information is supplied.

SYSTEM CODE	SYSTEM TITLE
APRM	AVERAGE POWER RANGE MONITOR SYSTEM
CAC	CONTAINMENT ATMOSPHERE CONTROL SYSTEM
CAS	CONTROL AIR SYSTEM
CEP	CONTAINMENT EXHAUST PURGE SYSTEM
CIA	CONTAINMENT INSTRUMENT AIR SYSTEM
CMS	CONTAINMENT MONITORING SYSTEM
COND	NUCLEAR CONDENSATE SYSTEM
CRA	CONTAINMENT RETURN AIR SYSTEM
CRD	CONTROL ROD DRIVE SYSTEM
CSP	CONTAINMENT SUPPLY PURGE SYSTEM
CVB	CONTAINMENT VACUUM BREAKER SYSTEM
DCW	DIESEL COOLING WATER SYSTEM
DE	DIESEL EXHAUST (ENGINE) SYSTEM
DEA	DIESEL BUILDING EXHAUST AIR (HVAC) SYSTEM
DG	DIESEL GENERATOR SYSTEM
DLO	DIESEL LUBE OIL SYSTEM
DMA	DIESEL BUILDING MIXED AIR (HVAC) SYSTEM
DO	DIESEL OIL SYSTEM
DOA	DIESEL BUILDING OUTSIDE AIR (HVAC) SYSTEM
DSA	DIESEL STARTING AIR SYSTEM
E	ELECTRICAL SYSTEM
EDR	EQUIPMENT DRAINS (RADIOACTIVE) SYSTEM
FDR	FLOOR DRAIN RADIOACTIVE SYSTEM
FPC	FUEL POOL COOLING SYSTEM
HPCS	HIGH PRESSURE CORE SPRAY SYSTEM
HY	RCC HYDRAULIC CONTROL
IRM	INTERMEDIATE RANGE MONITOR
LD	LEAK DETECTION SYSTEM
LPCS	LOW PRESSURE CORE SPRAY SYSTEM
LPRM	LOCAL POWER RANGE MONITOR SYSTEM
MS	MAIN STEAM (NUCLEAR) SYSTEM
MSLC	MAIN STEAM LEAKAGE CONTROL SYSTEM
MT	MATERIAL TRANSPORT SYSTEM
MWR	MISCELLANEOUS WASTE (RADIOACTIVE) SYSTEM
NSSE	NUCLEAR SYSTEM SERVICING EQUIPMENT SYSTEM
PI	PROCESS INSTRUMENTATION SYSTEM
PNL	PANEL
POA	PUMP HOUSE OUTSIDE AIR (HVAC) SYSTEM
PRA	PUMP HOUSE RETURN AIR (HVAC) SYSTEM
RCC	CLOSED COOLING WATER SYSTEM
RCIC	REACTOR CORE ISOLATION COOLING SYSTEM
REA	REACTOR BUILDING EXHAUST AIR (HVAC) SYSTEM
RFW	REACTOR FEEDWATER SYSTEM
RHR	RESIDUAL HEAT REMOVAL SYSTEM
ROA	REACTOR BUILDING OUTSIDE AIR (HVAC) SYSTEM
RPS	REACTOR PROTECTION SYSTEM
RRA	REACTOR BUILDING RETURN AIR (HVAC) SYSTEM
RRC	REACTOR RECIRCULATION SYSTEM
RWCU	REACTOR WATER CLEANUP SYSTEM
S	SAMPLING SYSTEM
SGT	STANDBY GAS TREATMENT SYSTEM
SLC	STANDBY LIQUID CONTROL SYSTEM
SPTM	SUPRESSION POOL TEMP MONITORING SYSTEM

WASHINGTON PUBLAIC POWER SUPPLY SYSTEM
MASTER EQUIPMENT LIST
SYSTEM CODE LIST

SYSTEM CODE	SYSTEM TITLE
SRM	SOURCE RANGE MONITOR SYSTEM
SW	STANDBY SERVICE WATER SYSTEM
TIP	TRAVERSING INCORE PROBE SYSTEM
WEA	WASTE BUILDING EXHAUST AIR (HVAC) SYSTEM
WMA	WASTE BUILDING MIXED AIR (HVAC) SYSTEM
WOA	WASTE BUILDING OUTSIDE AIR (HVAC) SYSTEM
WRA	WASTE BUILDING RETURN AIR (HVAC) SYSTEM

COMP CODE	COMPONENT IDENTIFICATION
AC	AIR CONDITIONING UNIT
AD	AIR DAMPER
AH	AIR HANDLING UNIT
ALM	ALARM
ALT	ALTERNATING RELAY
AM	AMMETER
AMP	AMPLIFIER
ANN	ANNUNCIATORS
AO	AIR OPERATOR
AR	AIR RECEIVER
AR	ALARM RECORDER
ASW	AIR SWITCH
AUX	AUX. INST. OR ELECT. EQUIP
AV	AIR RELEASE VALVE
AW	AIR WASHER
AY	ANALYZER
BD	BOARD
BJM	BRANCH JUNCTION MODULE
BL	BALER
BLR	BOILER
BUOY	BUOY
B0	24 VOLT BATTERY
B1	125 VOLT BATTERY
B2	250 VOLT BATTERY
B3	
C	COMPRESSOR
CAR	CHLORINE ANALYZER/RECORDER
CB	CIRCUIT BREAKER
CBL	CABLE
CC	COOLING COIL
CCU	CENTRAL CONTROL UNIT
CE	CONDUCTIVITY ELEMENT
CF	CHARCOAL FILTER
CHL	CHLORINATORS
CI	CONDUCTIVITY INDICATOR
CIS	CONDUCTIVITY INDIC. SWITCH
CIST	CONDUCTIVITY IND TRAN SWITCH
CIT	CONDUCTIVITY INDIC. TRANSMIT
CNTR	CONTACTOR,*CL.1E ONLY*
COE	CORROSIVITY SENSOR
COMP	COMPUTER
CON	CONDUCTIVITY ANAL/CONTROLLER
CONN	CONNECTOR,*CL.1E ONLY*
COR	CORROSIVITY RECORDER
CP	CONTROL PANEL
CPL	DATA COUPLER
CR	DIODE,*CL.1E ONLY*
CR	CONDUCTIVITY RECORDER
CR	CHILLER
CRA	CRANE
CRM	CONTROL ROOM MODULE
CS	CONDUCTIVITY SWITCH
CT	CURRENT TRANSFORMER

COMP CODE	COMPONENT IDENTIFICATION
CT	CONDUCTIVITY TRANSMITTER
CT	COOLING TOWER
CU	CONDENSING UNIT
C0	24 VOLT BATTERY CHARGER
C1	125 VOLT BATTERY CHARGER
C2	250 VOLT BATTERY CHARGER
C3	
D	DAMPER
DC	DUST COLLECTOR
DE	DENSITY ELEMENT
DET	DETECTOR
DFS	DIFFERENTIAL FLOW SWITCH
DIF	DIFFUSER
DISC	FUSED DISCONNECT
DLR	DIFFERENTIAL LEVEL RECORDER
DLS	DIFFERENTIAL LEVEL SWITCH
DLT	DIFFEREN LEVEL TRANSMITTER
DM	DEMINERALIZER
DMS	DEMISTER
DMTR	DEMAND METER
DOE	DISSOLVED OXYGEN ELEMENT
DOIT	DISSOLVED OXYGEN INDIC TRANS
DOOR	DOOR
DP	DISTRIBUTION PANEL
DPC	D PRESS CONTROLLER
DPE	DRIP PAN ELBOW
DPI	D PRESS INDICATOR
DPIC	D PRESS INDICAT. CONTROLLER
DPIR	D PRESS INDICTAT RECORDER
DPIS	D PRESS INDICATING SWITCH
DPIT	D PRESS INDICAT TRANSMITTER
DPR	D PRESS RECORDER
DPRC	D PRESS RECORDING CONTROLLER
DPS	D PRESS SWITCH
DPT	D PRESS TRANSMITTER
DRVE	DRIVE
DS	DENSITY SWITCH
DT	DENSITY TRANSMITTER
DT	DRIVE TURBINE
DTIS	D TEMP INDICATING SWITCH
DTRS	D TEMP RECORDING SWITCH
DTT	D TEMP TRANSMITTER
DU	DEAERATOR
DV	DUMP VALVE
DVSP	DRAIN VALVE SPV
DY	DRYER
E/H	ELECTROHYDRAULIC CONVERTER
E/P	ELECTROPNUEMATIC CONVERTER
E/S	ELECTRONIC POWER SUPPLY
EAMP	VOLTAGE AMPLIFIER OR PREAMPL
ED	EDUCTOR
EFCX	EXCESS FLOW CHECK VALVE
EHC	ELECTRIC HEATING COIL

COMP CODE	COMPONENT IDENTIFICATION
EHO	ELECTROHYDRAULIC OPERATOR
EI	VOLTMETER(SEE V FOR B&R USE)
EJ	EXPANSION JOINT
EJC	EJECTOR,INJECTOR OR EDUCTOR
ELEV	ELEVATOR
ELF	EMER LIGHT FIXTURE,*CL.1E*
ELP	EMERGENCY LIGHTING PANEL
EMSQ	MEAN SQUARE VOLTAGE DEVICE
ENG	ENGINE
EPP	EMERGENCY POWER PANEL
EQ	SPECIALITY EQUIP AND TOOLS
ES	EXHAUST SILENCER
ESH	ELECTRIC STRIP HEATER
ETD	TRANSDUCER,VOLTAGE
EUH	ELECTRIC UNIT HEATER
EV	EVAPORATOR
EX	EXHAUSTER
EXC	EXCITER
F	PIPING FILTER
FA	FLAME ARRESTOR
FC	FAN COIL
FC	FLOW CONTROLLER
FCN	FILL CONNECTION
FCV	FLOW CONTROL VALVE
FE	FLOW ELEMENT
FG	FLOW GLASS
FGEN	FUNCTION GENERATOR
FH	FUME HOOD
FI	FLOW INDICATOR
FIC	FLOW INDICATING CONTROLLER
FIS	FLOW INDICATING SWITCH
FIT	FLOW INDICATING TRANSMITTER
FL	FILTER
FLT	FILTER
FLX	FLEXIBLE CONNECTION
FN	FAN
FO	FREON ACTUATED OPERATOR
FQ	FLOW INTEGRATOR
FQI	FLOW INTEGRATING INDICATOR
FQS	FLOW INTEGRATING SWITCH
FR	FLOW RECORDER
FRC	FLOW RECORDING CONTROLLER
FRCS	FLOW RECORDING CONTRL SWITCH
FRS	FLOW RECORDING SWITCH
FS	FLOW SWITCH
FSPV	FLOW CONTROL VLV-SPV
FT	FLOW TRANSMITTER
FTD	TRANSDUCER,FREQUENCY
FU	FILTER UNIT
FUB	FUSEBLOCK HOLDER*CL.1E ONLY*
FUSE	FUSE,*CL.1E ONLY*
FX	FLOW TEST POINT
GEN	GENERATOR

COMP CODE	COMPONENT IDENTIFICATION
GVT	GRAVITY VENTILATOR
H	HEATER
HAS	HIGH AMPLITUDE SELECTOR
HC	HEATING COIL
HCU	HYDRAULIC CONTROL UNIT
HF	HIGH EFFICIENCY FILTER
HGR	HANGER,SNUBBER,STRUT & SUPPT
HO	HYDRAULIC OPERATOR
HOI	HOIST
HP	HYDRAULIC POWER UNIT
HR	HYDROGEN RECOMBINER
HS	HOSE STATION
HT	HYDRANT
HTP	HOT WATER HEAT EXCHANGER
HU	HUMIDIFIER
HV	HEATING AND VENTILATION UNIT
HX	HEAT EXCHANGER
HZM	FREQUENCY METER
H2R	HYDROGEN RECORDER
I/P	CURRENT/PNEUMATIC CONVERTER
IL	INDICATOR LIGHT,*CL.1E ONLY*
IN	INVERTER
IR	INSTRUMENT RACK
ITD	TRANSDUCER,CURRENT
JI	WATTMETER(SEE W FOR B&R USE)
JP	JET PUMP
LA	LIGHTNING ARRESTOR
LAG	ELECTRONIC TIME DELAY
LAS	LOW AMPLITUDE SELECTOR
LC	LEVEL CONTROLLER
LCV	LEVEL CONTROL VALVE
LE	LEVEL ELEMENT
LG	LEVEL GLASS
LI	LEVEL INDICATOR
LIC	LEVEL INDICATING CONTROLLER
LIS	LEVEL INDICATING SWITCH
LITS	LEVEL INDIC TRANS SWITCH
LMS	LIMIT SWITCH
LMS	LOCAL MANUAL SWITCH
LMTR	VOLTAGE/CURRENT SIGNAL LIMIT
LOC	LUBE OIL CONDITIONER
LP	LIGHTING PANEL
LPW	ELECTRONIC POWER SUPPLY(E/S)
LR	LEVEL RECORDER
LRS	LEVEL RECORDING SWITCH
LS	LEVEL SWITCH
LSPV	LEVEL CONTROL VLV-SPV
LT	LEVEL TRANSMITTER
LTD	TRANSDUCER LEVEL
LWS	LOW VOLUME SELECTOR
LX	LEVEL TEST POINT
M	MOTOR
M/A	MANUAL OR AUTO STATION

COMP CODE	COMPONENT IDENTIFICATION
MC	MOISTURE CONTROLLER
MC	MOTOR CONTROL CENTER
ME	MOISTURE ELEMENT
MI	MOISTURE INDICATOR
MIC	MOISTURE INDIC CONTROLLER
MIS	MOISTURE INDICATING SWITCH
MO	MOTOR OPERATOR
MR	MOISTURE RECORDER
MS	MOISTURE SEPARATOR
MT	MOISTURE TRANSMITTER
MV/I	M/VOLT TO CURRENT CONVERTER
MV/P	MILLIVOLT TO PNEUMATIC CONVE
MX	MIXER
MZ	MULTIZONE AIR CONDITIONER
N	NOZZLE
NR	NEUTRAL GROUNDING RESISTOR
OSC	OSCILLOGRAPH
O2R	OXYGEN RECORDER
P	PUMP
PBU	SEISMIC PLAYBACK UNIT
PC	PRESSURE CONTROLLER
PCV	PRESSURE CONTROL VALVE
PH	PH ANALYZER
PHE	PH ELEMENT
PHIC	PH INDICATING CONTROLLER
PHIT	PH INDICATING TRANSMITTER
PHRC	PH RECORDING CONTROLLER
PHT	PH TRANSMITTER
PI	PRESSURE INDICATOR
PIC	PRESS INDICATING CONTROLLER
PIS	PRESSURE INDICATING SWITCH
POE	POSITION INDICATION ELEMENT
POI	POSITION INDICATOR
POS	POSITION SWITCH
POT	POSITION TRANSMITTER
POTR	POTENTIOMETER,*CL.1E ONLY*
PP	PUMP PACKAGE
PP	POWER PANEL
PR	PRESSURE RECORDER
PROG	PROGRAMMER
PRV	PRESSURE REDUCING VALVE
PS	PRESSURE SWITCH
PSV	SOLENOID PILOT VALVE
PT	POTENTIAL TRANSFORMER
PT	PRESSURE TRANSMITTER
PTD	PRESSURE TRANSDUCER
PUI	PURITY INDICATOR
PUIT	PURITY INDIC TRANSMITTER
PUS	PURITY SWITCH
PV	PILOT VALVE
PWC	DEW POINT TRANSMITTER
PWS	PIPE WHIP RESTRAINT
PX	PRESSURE TEST POINT

COMP CODE	COMPONENT IDENTIFICATION
QDC	QUICK DISCONNECT COUPLING
QHM	RUN TIME METER
QSV	QUICK ACTING SOLENOID PILOT
R/I	RESISTANCE/CURRENT CONVER
RAM	RADIATION AMPLIFIER
RC	REMOTE CAPPER
RC	RADIATION CONTROLLER
RC	RECOMBINER
RD	RUPTURE DISC
RE	RADIATION ELEMENT
REL	FLOW BALANCING RELAY
RES	ESISTOR,*CL.1E ONLY*
RF	REFRIGERATION MACHINE
RI	RADIATION INDICATOR
RIS	RADIATION INDICATING SWITCH
RLY	RELAY
RMC	REMOTE MANUAL CONTROLLER
RMS	REMOTE MANUAL CONTROL SWITCH
RO	RESTRICTING ORIFICE
ROD	ROD
RPV	REACTOR PRESSURE VESSEL
RR	RADIATION RECORDER
RS	RADIATION SWITCH
RSA	RESPONSE SPECTRUM ANNUNCIATO
RSM	RADIATION SAMPLER
RSR	TRIAXIAL RESPONSE SPECTRUM R
RSRT	RSR TRANSDUCER FOR RSA
RST	RESIN TRAP
RT	RADIATION TRANSMITTER
RV	RELIEF VALVE
RVT	ROOF VENTILATOR
S	ELECTRONIC TRIP UNIT
S	SILENCER
SC	SPEED CONTROLLER
SCR	SCREEN
SE	SPEED ELEMENT
SEW	SAFETY EYE WASH
SH	6.9 KV SWITCH GEAR
SI	SPEED INDICATOR
SIOA	SILICON AND OXYGEN ANALYZER
SL	480VOLT SWITCH GEAR
SM	4.16KV SWITCH GEAR
SMA	TRIAXIAL ACCELERATION SENSOR
SMD	SMOKE DETECTOR
SMX	STATIC MIXER
SNB	SNUBBER
SP	SAMPLE POINT
SPV	SOLENIOD PILOT VALVE
SQRT	SQUARE ROOT EXTRACTOR
SR	SAMPLE RACK
SS	SELECTOR SWITCH
SS	SPEED SWITCH
ST	STRAINER

COMP CODE	COMPONENT IDENTIFICATION
ST	SEISMIC TRIGGER
SUH	STEAM UNIT HEATER
SUM	SUMMER
SUMP	SUMP
SV	SOLENOID OPERATED VALVE
T	TRAP
T/SS	(TEMP) SELECTOR SWITCH
TA	TRIP AUXILIARY UNIT
TAPE	MAGNETIC TAPE UNIT
TBE	TURBIDITY ELEMENT
TBIT	TURBIDITY INDICATING TRANS
TBR	TURBIDITY RECORDER
TBS	TURBIDITY SWITCH
TBT	TURBIDITY TRANSMITTER
TC	TEMPERATURE CONTROLLER
TCV	TEMPERATURE CONTROL VALVE
TD	TIME DELAY RELAY
TD	TRANSFER DOLLY
TDS	TIME DELAY SWITCH
TE	TEMPERATURE ELEMENT
TI	TEMPERATURE INDICATOR
TIC	TEMP INDICATING CONTROLLER
TIS	TEMP INDICATING SWITCH
TK	TANK
TM	TIMER
TQ	TIME TOTALIZER
TQR	TORQUE RECORDER
TQS	TORQUE SWITCH
TQT	TORQUE TRANSMITTER
TR	TRANSFORMER
TR	TEMPERATURE RECORDER
TR	TRIAXIAL RECORDER
TRB	TERMINAL BLOCK/STRIP*CL.1E*
TRL	TRANSLATOR
TRS	TEMPERATURE RECORDING SWITCH
TS	TEMPERATURE SWITCH
TSC	TEMPERATURE SCANNER
TT	TEMPERATURE TRANSMITTER
TV	TEST VALVE
TX	THERMOWELL
TY	RELAY,PNEUMATIC CONTROL
UFM	UNIPLEX FIELD MODULE
V	VALVE
V	USE EI FOR MEL(B&R USE ONLY)
VARM	VAR METER
VATD	TRANSDUCER,VAR
VB	VACUUM BREAKER
VBAM	VIBRATION AMPLIFIER
VBE	VIBRATION ELEMENT
VBEC	VIBRATION/ECCENTRICITY INDIC
VBIS	VIBRATION INDICATING SWITCH
VBS	VIBRATION SWITCH
VD	VIEWING DEVICE

COMP CODE	COMPONENT IDENTIFICATION
VX	INSTRUMENT ISOLATION VALVE
VZ	VAPORIZER
W	USE JI FOR MEL(B&R USE ONLY)
WDR	WIND DIRECTION RECORDER
WDT	WIND DIRECTION TRANSMITTER
WHM	WATT-HOUR METER
WSR	WIND SPEED RECORDER
WST	WIND SPEED TRANSMITTER
WTD	WATT TRANSDUCER
WUH	WATER UNIT HEATER
X	PRIMARY CONTAINMENT PENETRAT
XE	ELEMENT, SPECIAL TYPES
XR	RECORDER,SPECIAL TYPES
XT	TRANSMITTER, SPECIAL TYPES
33C	VLV TRVL POS SW CLOSED
33IC	VLV TRVL POS SW INTER CLOSED
33IO	VLV TRVL POS SW INTER OPEN
33O	VLV TRVL POS SW OPEN
33TC	VLV TRVL POS SW TORQ CLOSED
33TO	VLV TRVL POS SW TORQ OPEN
42	ELECTRICAL MOTOR START COIL

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT	MFG	QID	QS	USE	TEST	MFG MODEL NO.	ANL	F/O	C	FREQ	TM	HL
CAC-EHC-1A	37 KW PREHEATER	71		109007	A B	1 0	2 1		0 0			09		Y
2	R 580 M7/6.6		C332					SA213-T347 S.S.						
CAC-EHC-1B	37 KW PREHEATER	71		109007	A B	1 0	2 1		0 0			09		Y
2	R 580 M7/7.4		C332					SA213-T347 S.S.						
CAC-EHC-1A	ELECTROHYDRAULIC OPER.FOR CAC-V-1A	71		110002	A N	1 0	2 1		0 0			33	P	N
2	R 573 M.5/6.6		I206					NH95H2670F3L2						
CAC-EHC-1A/FCV	EHO FOR CAC-FCV-1A	42A		110004	A N	1 0	2 1		0 0			09	P	Y
2	R 575 L.9/5.0		I206					NH91						
CAC-EHC-1B	EHO FOR CAC-V-1B	71		110002	A N	1 0	2 1		0 0			33	P	N
2	R 573 M.5/7.4		I206					NH95H2670F3L2						
CAC-EHC-1B/FCV	EHO FOR CAC-FCV-1B	42A		110004	A N	1 0	2 1		0 0			09	P	Y
2	R 570 J.8/6.5		I206					NH91J4002F2L18						
CAC-EHC-2A	EHO FOR CAC-V-2A	71		110004	A N	1 0	2 1		0 0			33	P	N
2	R 573 M.5/6.6		I206					NH91H2070F3L2						
CAC-EHC-2A/FCV	EHO FOR CAC-FCV-2A	42A		110004	A N	1 0	2 1		0 0			09	P	Y
2	R 558 M.2/7.1		I206					NH91J4002F2218						
CAC-EHC-2B	EHO FOR CAC-V-2B	71		110004	A N	1 0	2 1		0 0			33	P	N
2	R 573 M.5/7.4		I206					NH91H2070F362						
CAC-EHC-2B/FCV	EHO FOR CAC-FCV-2B	42A		110004	A N	1 0	2 1		0 0			09	P	Y
2	R 563 6.5/M.5		I206					NH91J4002F2118						
CAC-EHC-3A	EHO FOR CAC-V-3A	71		110004	A N	1 0	2 1		0 0			33	P	N
2	R 573 M.5/6.6		I206					NH91H2070F362						
CAC-EHC-3A/FCV	EHO FOR CAC-FCV-3A	42A		110004	A N	1 0	2 1		0 0			09	P	Y
2	R 493 M.8/4.4		I206					NH91						
CAC-EHC-3B	ACTUATOR ON CAC-V-3B	71		110004	A N	1 0	2 1		0 0			33	P	N
2	R 573 M.5/7.4		I206					NH91H2070F362						
CAC-EHC-3B/FCV	EHO FOR CAC-FCV-3B	42A		110007	A N	1 0	2 1		0 C			09	P	Y
2	R 494 J.0/7.4		I206					NH41J4002F2118						
CAC-EHC-4A	EHO FOR CAC-TCV-4A	71		110001	A N	1 0	2 1		0 0			33	P	N
2	R 573 M.5/6.6		I206					NH92H9970F3L29						
CAC-EHC-4A/FCV	EHO FOR CAC-FCV-4A	42A		110004	A N	1 0	2 1		0 0			09	P	Y
2	R 495 8.2/M.6		I206					NH91J4002F2L18						
CAC-EHC-4B	EHO FOR CAC-TCV-4B	71		110001	A N	1 0	2 1		0 0			33	P	N
2	R 573 M.5/7.4		I206					NH92						
CAC-EHC-4B/FCV	EHO FOR CAC-FCV-4B	42A		110004	A N	1 0	2 1		0 0			09	P	Y
2	R 493 N.4/6.0		I206					NH91J4002F2L18						
CAC-EHC-5A/FCV	EHO FOR CAC-FCV-5A	71		110004	A N	1 0	2 1		0 0			09	P	Y
2	R 572 M.6/6.5		I206					NH91H4070F3L16						
CAC-EHC-5B/FCV	EHO FOR CAC-FCV-5B	71		110004	A N	1 0	2 1		0 0			09	P	Y
2	R 573 M.5/7.5		I206					NH91H4070F3216						
CAC-EHC-6A/FCV	EHO FOR CAC-FCV-6A	71		110001	A N	1 0	2 1		0 0			09	P	Y
2	R 572 M.6/6.5		I206					NH92						
CAC-EHC-6B/FCV	EHO FOR CAC-FCV-6B	71		110001	A N	1 0	2 1		0 0			09	P	Y
2	R 573 M.5/7.5		I206					NH91H4070F3216						
CAC-FI-8A	TEST LINE FLOW INDICATOR	71		138001	A	2 0	2 1		0 0				F	Y
2	R 574 M.4/6.8		B440					13050108BEA						
CAC-FI-8B	TEST LINE FLOW INDICATOR	71		138001	A	2 0	2 1		0 0				F	Y
2	M4/7.6		B440					13050108BEA						
CAC-M-1A	25HP/2A MOTOR FOR CAC-FN-1A	71		213043	A N	1 0	2 1		0 0			09		Y

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AMENDMENT NO. 21
December 1981

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 572 MS/6.6	W120			284TS/TEFC/CLASS H							
CAC-M-1B	25HP/?A MOTOR FOR CAC-FN-1B	71	213043	A N	1 0	2 1	0 0			09		Y
2	R 572 MS/7.4	W120			284TS/TEFC/CLASS H							
CAC-MO-11	MOTOR OPERATOR CAC-V-11	41A	221067	A N	1 0	1 4	0 0			35		N
2	R 563 6.5/M.5	L200			SMB-000-5/D564							
CAC-MO-13	.361HP/3.8A MOTOR OPER. CAC-V-13	41A	221027	A N	1 0	1 4	0 0			35		N
2	R 487 M.0/6.0	L200			SMB-000-5/D56A							
CAC-MO-15	.361HP/5.8A MO FOR CAC-V-15	41A	221027	A N	1 0	1 4	0 0			35		Y
2	R 570 J.8/6.8	L200			SMB-000-5/D56A							
CAC-MO-17	.361HP/3.8A MOTOR OPER. CAC-V-17	41A	221027	A N	1 0	1 4	0 0			35		N
2	R 494 J.0/7.4	L200			SMB-000-5/D56A							
CAC-MO-2	MOTOR OPERATOR CAC-V-2	41A	221067	A N	1 0	1 4	0 0			35		N
2	R 558 M.2/7.1	L200			SMB-000-5/D56A							
CAC-MO-4	.361HP/3.8A MOTOR OPER. CAC-V-4	41A	221027	A N	1 0	1 4	0 0			35		N
2	R 495 M.2/7.8	L200			SMB-000-5/D56A							
CAC-MO-6	MOTOR OPERATOR CAC-V-6	41A	221047	A N	1 0	1 4	0 0			35		N
2	R 575 L.9/5.0	L200			SMB-000-5/D56A							
CAC-MO-8	MOTOR OPERATOR CAC-V-8	41A	221027	A N	1 0	1 4	0 0			35		N
2	R 480 M.8/4.3	L200			SMB-000-5/D56A							
CAC-PI-2A	BLOWER 1A DISCHARGE/LOCAL PI	71	243005	A	2 0							
2	R	U010			1931T							
CAC-PI-2B	BLOWER 1B DISCHARGE/LOCAL PI	71	243005	A	2 0							
2	R	U010			1931T							
CAC-PI-3A	PI FOR CAC-MS-1A	71	243005	A	2 0							
2	R	U010			1931T							
CAC-PI-3B	PI FOR CAC-MS-1B	71		A	2 0							
2	R											
CAC-TE-1A	TEMP ELEMENT DISCH FROM CAC-FN-1A	71	339018	A B	1 0	2 1	0 0			09	F	Y
2	R 577 M.5/6.6	T165			80500							
CAC-TE-1A1	INPUT TO TEMP RECORDER 1A	71	339006	A B	2 0	2 1	0 0			09	F	Y
2	R 580 M.5/6.6	T165			80500							
CAC-TE-1A2	TEMPERATURE ELEMENT ON CAC-EHC-1A	71	339006	A	3 0	2 1	0 0				F	Y
2	R 576 M.3/6.4											
CAC-TE-1A3	TEMP ELEMENT ON CAC-EHC-1A	71	339006	A	3 0	2 1	0 0				F	Y
2	R 576 M.3/6.4											
CAC-TE-1A4	TEMP ELEMENT ON CAC-EHC-1A	71	339006	A	3 0	2 1	0 0				F	Y
2	R 576 M.3/6.4											
CAC-TE-1A5	TEMP ELEMENT ON CAC-EHC-1A	71	339006	A	3 0	2 1	0 0				F	Y
2	R 576 M.3/6.4											
CAC-TE-1A6	TEMP ELEMENT ON CAC-EHC-1A	71	339006	A	3 0	2 1	0 0				F	Y
2	R 573 M.3/6.4	T165			P0-004-1371-109							
CAC-TE-1A7	TEMP ELEMET ON OUTLT OF CAC-EHC-1A	71	339006	A	3 0	2 1	0 0				F	Y
2	R 573 M.3/6.4	T165			P0-004-1371-109							
CAC-TE-1B	TEMP ELEMENT DISCH FROM CAC-FN-1B	71	339018	A B	1 0	2 1	0 0			09	F	Y
2	R 577 M.5/7.4	T165			P/0-004-1371-109							
CAC-TE-1B1	INPUT TO TEMP RECORDER 1B	71	339006	A B	2 0	2 1	0 0			09	F	Y
2	R 580 M.5/7.4	T165			80500							
CAC-TE-1B2	TEMP ELEMENT ON CAC-EHC-1B	71	339006	A	3 0	2 1	0 0				F	Y
2	R 576 M.3/7.2	T165										

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EQUIPMENT NO.	LV	DESCRIPTION	PLANT LOCATION	CONTRACT	MFG	QID	QS	USE	MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
CAC-TE-1B3	2	TEMP ELEMENT ON CAC-EHC-1B	R 576 H.3/7.2	71	T165	339006	A	3 0		2 1	0 0				F	Y
CAC-TE-1B4	2	TEMP ELEMENT ON CAC-EHC-1B	R 576 H.3/7.2	71	T165	339006	A	3 0		2 1	0 0				F	Y
CAC-TE-1B5	2	TEMP ELEMENT ON CAC-EHC-1B	R 576 H.3/7.2	71	T165	339006	A	3 0		2 1	0 0				F	Y
CAC-TE-1B6	2	TEMP ELEMENT ON CAC-EHC-1B	R 573 H.3/7.2	71	T165	339006	A	3 0	P0-004-137-109	2 1	0 0				F	Y
CAC-TE-1B7	2	TEMP ELEMENT ON CAC-EHC-1B	R 573 H.3/7.2	71	T165	339006	A	3 0	P0-004-137-109	2 1	0 0				F	Y
CAC-TE-2A	2	PREHEATER 1A HI TEMP ALARM	R 582 H.5/6.6	71	T765	339006	A B	1 0	80500	2 1	0 0			09	F	Y
CAC-TE-2B	2	PREHEATER 1B HI TEMP ALARM	R 582 H.5/7.4	71	T165	339006	A B	1 0	80500	2 1	0 0			09	F	Y
CAC-TE-3A	2	PREHEATER 1A HI TEMP ALARM	R 577 H.5/6.6	71	T165	339006	A B	1 0	80500	2 1	0 0			09	F	Y
CAC-TE-3B	2	PREHEATER 1B HI TEMP ALARM	R 577 H.5/7.4	71	T165	339006	A B	1 0	80500	2 1	0 0			09	F	Y
CAC-TE-4A	2	TEMP ELEMENT DISCH FROM CAC-MS-1B	R 578 H.5/6.6	71	T165	339006	A B	1 0	80500	2 1	0 0			09	F	Y
CAC-TE-4B	2	TEMP ELEMENT DISCH FROM CAC-MS-1B	R 578 H.5/7.4	71	T165	339006	A B	1 0	80500	2 1	0 0			09	F	Y
CAC-TE-5A	2	PREHEATER 1A HI TEMP SHUTDOWN	R 577 H.5/6.6	71	T165	339006	A B	1 0	80500	2 1	0 0			09	F	Y
CAC-TE-5B	2	PREHEATER 1B HI TEMP SHUTDOWN	R 577 H.5/7.4	71	T165	339006	A B	1 0	80500	2 1	0 0			09	F	Y
CAC-TE-6A	2	MOISTURE SEPTR 1A HI TEMP SHUTDOWN	R 578 H.5/6.6	71	T165	339006	A B	1 0	80500	2 1	0 0			09	F	Y
CAC-TE-6B	2	MOISTURE SEPTR 1B HI TEMP SHUTDOWN	R 578 H.5/7.4	71	T165	339006	A B	1 0	80500	2 1	0 0			09		Y
CAS-LMS-CVX/82E	2							2 0								
CAS-LMS-453	2							2 0								
CEP-LMS-1A	2	LMS FOR CEP-V-1A	P 563 6.5/J.4	68	N007	200005		3 3	1703100							
CEP-LMS-1B	2	LMS FOR CEP-V-1B	R 563 6.5/J.4	68	N007	200005		3 3	1703100							
CEP-LMS-2A	2	LMS FOR CEP-V-2A	R 563 6.5/J.4	68	N007	200005		3 3	1703100							
CEP-LMS-2B	2	LMS FOR CEP-V-2B	R 563 6.5/J.4	68	N007	200005		3 3	1703100							
CEP-LMS-3A	2	LMS FOR CEP-V-3A	R 471 H.4/6.8	68	N007	200010	S	3 3	74080100							
CEP-LMS-3B	2	LMS FOR CEP-V-3B	P 495 H.5/5.4	68	N007	200010	S	3 3	74080100							
CEP-LMS-4A	2	LMS FOR CEP-V-4A	P 495 H.5/5.4	68	N007	200010	S	3 3	74080100							
CEP-LMS-4B		LMS FOR CEP-V-4B		68		200010	S	3 3								

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
CAC-TE-1B3	TEMP ELEMENT ON CAC-EHC-1B	71	339006	A	3 0	2 1	0 0				F	Y
2	R 576 M.3/7.2	T165										
CAC-TE-1B4	TEMP ELEMENT ON CAC-EHC-1B	71	339006	A	3 0	2 1	0 0				F	Y
2	R 576 M.3/7.2	T165										
CAC-TE-1B5	TEMP ELEMENT ON CAC-EHC-1B	71	339006	A	3 0	2 1	0 0				F	Y
2	R 576 M.3/7.2	T165										
CAC-TE-1B6	TEMP ELEMENT ON CAC-EHC-1B	71	339006	A	3 0	2 1	0 0				F	Y
2	R 573 M.3/7.2	T165			PO-004-137-109							
CAC-TE-1B7	TEMP ELEMENT ON CAC-EHC-1B	71	339006	A	3 0	2 1	0 0				F	Y
2	R 573 M.3/7.2	T165			PO-004-137-109							
CAC-TE-2A	PREHEATER 1A HI TEMP ALARM	71	339006	A B	1 0	2 1	0 0			09	F	Y
2	R 582 M.5/6.6	T165			80500							
CAC-TE-2B	PREHEATER 1B HI TEMP ALARM	71	339006	A B	1 0	2 1	0 0			09	F	Y
2	R 582 M.5/7.4	T165			80500							
CAC-TE-3A	PREHEATER 1A HI TEMP ALARM	71	339006	A B	1 0	2 1	0 0			09	F	Y
2	R 577 M.5/6.6	T165			80500							
CAC-TE-3B	PREHEATER 1B HI TEMP ALARM	71	339006	A B	1 0	2 1	0 0			09	F	Y
2	R 577 M.5/7.4	T165			80500							
CAC-TE-4A	TEMP ELEMENT DISCH FROM CAC-MS-1B	71	339006	A B	1 0	2 1	0 0			09	F	Y
2	R 578 M.5/6.6	T165			80500							
CAC-TE-4B	TEMP ELEMENT DISCH FROM CAC-MS-1B	71	339006	A B	1 0	2 1	0 0			09	F	Y
2	R 578 M.5/7.4	T165			80500							
CAC-TE-5A	PREHEATER 1A HI TEMP SHUTDOWN	71	339006	A B	1 0	2 1	0 0			09	F	Y
2	R 577 M.5/6.6	T165			80500							
CAC-TE-5B	PREHEATER 1B HI TEMP SHUTDOWN	71	339006	A B	1 0	2 1	0 0			09	F	Y
2	R 577 M.5/7.4	T165			80500							
CAC-TE-6A	MOISTURE SEPTR 1A HI TEMP SHUTDOWN	71	339006	A B	1 0	2 1	0 0			09	F	Y
2	R 578 M.5/6.6	T165			80500							
CAC-TE-6B	MOISTURE SEPTR 1B HI TEMP SHUTDOWN	71	339006	A B	1 0	2 1	0 0			09		Y
2	R 578 M.5/7.4	T165			80500							
CAS-LMS-CVX/82E					2 0							
2												
CAS-LMS-453					2 0							
2												
CEP-LMS-1A	LMS FOR CEP-V-1A	68	200005		3 3							
2	R 563 6.5/J.4	N007			1703100							
CEP-LMS-1B	LMS FOR CEP-V-1B	68	200005		3 3							
2	R 563 6.5/J.4	N007			1703100							
CEP-LMS-2A	LMS FOR CEP-V-2A	68	200005		3 3							
2	R 563 6.5/J.4	N007			1703100							
CEP-LMS-2B	LMS FOR CEP-V-2B	68	200005		3 3							
2	R 563 6.5/J.4	N007			1703100							
CEP-LMS-3A	LMS FOR CEP-V-3A	68	200010	S	3 3							
2	R 471 H.4/6.8	N007			74080100							
CEP-LMS-3B	LMS FOR CEP-V-3B	68	200010	S	3 3							
2	R 495 H.5/5.4	N007			74080100							
CEP-LMS-4A	LMS FOR CEP-V-4A	68	200010	S	3 3							
2	R 495 H.5/5.4	N007			74080100							
CEP-LMS-4B	LMS FOR CEP-V-4B	68	200010	S	3 3							

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EQUIPMENT NO. LV	DESCRIPTION PLANT LOCATION	CONTRACT MFG	QID	QS	USE MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TH	HL
2	R 495 H.5/5.4	N007			74080100							
CEP-SPV-1A	SOLENOID PILOT FOR CEP-V-1A IR-67	58	315004	A N	2 3	2 1	0 0			33+	F	N
2	R 555 5.8/M.5	A499			WVHT8316A74							
CEP-SPV-1B	SOLENOID PILOT FOR CEP-V-1B IR-67	58	315004	A N	2 3	2 1	0 0			33+		N
2	R 555 5.8/M.8	A499			WJHT831654							
CEP-SPV-2A	SOLENOID PILOT FOR CEP-V-2A IR-68	58	315004	B N	2 3	2 1	0 0			33+		N
2	R 554 8.2/M.7	A499			WJHT8316A76							
CEP-SPV-2B	SOLENOID PILOT FOR CEP-V-2B IR-68	58	315004	B N	2 3	2 1	0 0			33+		N
2	R 554 8.2/M.7	A499			WJHT831654							
CEP-SPV-3A	SOLENOID PILOT FOR CEP-V-3A IR-62	58	315004	A N	2 3	2 1	0 0			33+		N
2	R 471 H.4/6.8	A499			WJHT831654							
CEP-SPV-3B	SOLENOID PILOT FOR CEP-V-3B IR-62	58	315004	A N	2 3	2 1	0 0			33+		N
2	R 471 H.4/6.8	A499			WJHT831654							
CEP-SPV-4A	SOLENOID PILOT FOR CEP-V-4A IR-63	58	315004	A N	2 3	2 1	0 0			33+		N
2	R 501 L.4/9.3	A499			WJHT8316A74							
CEP-SPV-4B	SOLENOID PILOT FOR CEP-V-4B IR-63	58	315004	A N	2 3	2 1	0 0			33+		N
2	R 501 L.4/9.3	A499			WJHT8316A54							
CIA-MO-20	MOTOR OPERATOR CIA-V-20	215	221053	A R	1 0	1 4				33	P	N
2	R 525 J.3/7.0	L200			SMB-000-5/P48							
CIA-MO-30A	1HP MOTOR OPERATOR CIA-V-30A	215	221056	A R	1 0	1 4				33		N
2	R 545 J.8/4.7	L200			SMB-000-5/P48							
CIA-MO-30B	1HP MOTOR OPERATOR CIA-V-30B	215	221015	A R	1 0	1 4				33	P	N
2	R 545 M.5/6.8	L200			SMB-000-5/P48							
CIA-PI-29	PI DOWNSTREAM OF HEADER	220			2 0							
2	R 522											
CIA-PS-21A	DIV.1 CIA N2 HDR PRESSURE IR-67	58	256012	B D	2 3	2 5	0 0			33+	F	N
2	R 557 5.8/M.8	I204			0288							
CIA-PS-21B	DIV.2 CIA N2 HDR PRESSURE IR-68	58	256012	A N	2 3	1 4	0 0			08		N
2	R 548 H7/8.1	B080			288A							
CIA-PS-22A	REMOTE LOCAL PS	220		B	2 3	1 4	0 0			50		N
2	R 548											
CIA-PS-22B	REMOTE LOCAL PS	220		B	2 3	1 4	0 0			50		N
2	R 548											
CIA-PS-29	PRESS SWITCH CONTAINMENT SUPPLY	220			2 0							
2	R 522											
CIA-PS-39A	CIA CROSSTIE TO CN BACKUP IR-71	58	256013	A D	2 3	2 5	0 0			33+	F	N
2	R 525 H.8/7.0	M239			DAW7023-804							
CIA-PS-39B	CIA CROSSTIE TO CN BACKUP IR-74	58	256013	A D	2 3	2 5	0 0			33+		N
2	R 525 H.4/7.1	M235			DAW-7023-804-R8S							
CIA-PT-20	PT DOWNSTREAM OF CIA-AR-1	59			2 0							
2	R 522 J/6.7	G080			712203							
CIA-PT-21A	CIA HEADER PRESS. IR-67	59	259007		2 3							
2	R 548 N8/5.7	G080			712203							
CIA-PT-21B	CIA HEADER PRESS. IR-68	59	259007		2 3							
2	550 8.2/H.7	R369			712203							
CIA-SPV-1A	0.5" SOL PILOT ON N2 BOTTLE DISCH	215	315009	O D	1 0							
2	R 440 N/4.3	M090			MV229MQ-S2							
CIA-SPV-1B	0.5" SOLENOID PILOT VALVE	215	315009	O D	1 0							
2	R 440 N/7	M090			MV229MQ-S2							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE TEST / MFG MODEL NO.	ANL	F/O	C	FREQ	TH	HL
CIA-SPV-10A	0.5" SOL PILOT ON N2 BOTTLE DISCH	215	315009	D D	1 0						
2	R 440 N/4/3	M090			MV229MQ-S2						
CIA-SPV-10B	0.5" SOL PILOT ON N2 BOTTLE DISCH.	215	315009	D D	1 0						
2	R 440 N/7	M090			MV229MQ-S2						
CIA-SPV-11A	0.5" SOL PILOT ON N2 BOTTLE DISCH	215	315009	D D	1 0						
2	R 440 N/4.3	M090			MV229MQ-S2						
CIA-SPV-11B	0.5" SOL PILOT ON N2 BOTTLE DISCH	215	315009	D D	1 0						
2	R 440 N/7	M090			MV229MQ-S2						
CIA-SPV-12A	0.5" SOL PILOT ON N2 BOTTLE DISCH	215	315009	D D	1 0						
2	R 440 N/4.3	M090			MV229MQ-S2						
CIA-SPV-12B	0.5" SOL PILOT ON N2 BOTTLE DISCH	215	315009	D D	1 0						
2	R 440 N/7	M090			MV229MQ-S2						
CIA-SPV-13A	0.5" SOL PILOT ON N2 BOTTLE DISCH	215	315009	D D	1 0						
2	R 440 N/4.3	M090			MV229MQ-S2						
CIA-SPV-13B	0.5" SOL PILOT ON N2 BOTTLE DISCH	215	315009	D D	1 0						
2	R 440 N/7	M090			MV229MQ-S2						
CIA-SPV-14A	0.5" SOL PILOT ON N2 BOTTLE DISCH	215	315009	D D	1 0						
2	R 440 N/4.3	M090			MV229MQ-S2						
CIA-SPV-14B	0.5" SOLENOID PILOT VALVE	215	315009	D D	1 0						
2	R 440 N/7.9	M090			MV229MQ-S2						
CIA-SPV-15A	0.5" SOLENOID PILOT VALVE	215	315009	D D	1 0						
2	R 440 N/4.3	M090			MV229MQ-S2						
CIA-SPV-15B	0.5" SOLENOID PILOT VALVE	215	315009	D D	1 0						
2	R 440 N/7.9	M090			MV229MQ-S2						
CIA-SPV-16B	SOLENOID PILOT VALVE	215	315009	D D	1 0						
2	R 440 N/7.9	M090			MV229MQ-S2						
CIA-SPV-17B	SOLENOID PILOT VALVE	215	315009	D X	1 0						
2	R 440 N/7.9	M090			MV229MQ-S2						
CIA-SPV-18B	0.5" SOL PILOT ON N2 BOTTLE DISCH.	215	315009	D D	1 0						
2	R 440 N/7.9	M090			MV229MQ-S2						
CIA-SPV-19B	SOLENOID PILOT VALVE	215	315009	D D	1 0						
2	R 440 N/7.9	M090			MV229MQ-S2						
CIA-SPV-2A	0.5" SOLENOID PILOT VALVE	215	315009	D D	1 0						
2	R 440 N/4.3	M090			MV229MQ-S2						
CIA-SPV-2B	0.5" SOLENOID PILOT VALVE	215	315009	D D	1 0						
2	R 440 N/7	M090			MV229MQ-S2						
CIA-SPV-3A	0.5" SOLENOID PILOT VALVE	215	315009	D D	1 0						
2	R 440 N/4.3	M090			MV229MQ-S2						
CIA-SPV-3B	0.5" SOLENOID PILOT VALVE	215	315009	D D	1 0						
2	R 440 N/7	M090			MV229MQ-S2						
CIA-SPV-4A	0.5" SOLENOID PILOT VALVE	215	315009	D D	1 0						
2	R 440 N/4.3	M090			MV229MQ-S2						
CIA-SPV-4B	0.5" SOLENOID PILOT VALVE	215	315009	D D	1 0						
2	R 440 N/7	M090			MV229MQ-S2						
CIA-SPV-5A	0.5" SOLENOID PILOT VALVE	215	315009	D D	1 0						
2	R 440 N/4.3	M090			MV229MQ-S2						
CIA-SPV-5B	0.5" SOLENOID PILOT VALVE	215	315009	D D	1 0						
2	R 440 N/7	M090			MV229MQ-S2						
CIA-SPV-6A	0.5" SOLENOID PILOT VALVE	215	315009	D D	1 0						

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 440 N/4.3	M090			MV229MQ-S2							
CIA-SPV-6B	0.5" SOLENOID PILOT VALVE	215	315009	D D	1 0							
2	R 440 N/7	M090			MV229MQ-S2							
CIA-SPV-7A	0.5" SOLENOID PILOT VALVE	215	315009	D D	1 0							
2	R 440 N/4.3	M090			MV229MQ-S2							
CIA-SPV-7B	0.5" SOLENOID PILOT VALVE	215	315009	D D	1 0							
2	R 440 N/7	M090			MV229MQ-S2							
CIA-SPV-8A	0.5" SOLENOID PILOT VALVE	215	315009	D D	1 0							
2	R 440 N/4.3	M090			MV229MQ-S2							
CIA-SPV-8B	0.5" SOLENOID PILOT VALVE	215	315009	D D	1 0							
2	R 440 N/7	M090			MV229MQ-S2							
CIA-SPV-9A	0.5" SOLENOID PILOT VALVE	215	315009	D D	1 0							
2	R 440 N/4.3.	M090			MV229MQ-S2							
CIA-SPV-9B	0.5" SOLENOID PILOT VALVE	215	315009	D D	1 0							
2	R 440 N/7	M090			MV229MQ-S2							
CIA-SV-39A	.5" SOL. AIR TIE TO N2 HDR			D D	1 0							
2	R 540 K.0/4.3	M090			MV229MS-S2							
CIA-SV-39B					1 0							
2	R	M090		D D	MV229MS-S2							
CMS-AY-1	H202 ANALYZER SR-13	928	025002		1 3							
2	R 548 M6/4.5	B135			7C(H2)AND 755(02)							
CMS-AY-2	H202 ANALYZER	928	025002		1 3							
2	R 548 M6/4.5	B135			7C(H2)AND 755 (02)							
CMS-LT-1	SUPPRES.CHAMB.WTR.LEVEL MONIT.IR-	59	209006	B D	1 3	1 4	0 0			50		N
2	R 465 J.5/4.3	M040			TSI-1X-MFG-M14HY							
CMS-LT-2	SUPPRES CHAMBER WTR LEVEL MONIT IR	59	209007	B D	1 3	1 4	0 0			50		N
2	R 465 M.2/7.7	R369			10P4022T003PB							
CMS-ME-1	ME FOR DRYWELL	220		P	1 3							
2	R											
CMS-ME-2	ME FOR DRYWELL	220		P	1 3							
2	R											
CMS-ME-3	ME FOR DRYWELL	220		P	1 3							
2	R											
CMS-ME-4	ME FOR DRYWELL	220		P	1 3							
2	P											
CMS-ME-5	ME FOR DRYWELL	220		P	1 3							
2	R 536 45 D AZ	P047			M2R							
CMS-PT-1	CONTAINMENT PRESS. MONITORING IR-6	58	259004	A D	1 3	1 4	0 0			07	R	N
2	R 555 5.8/M.8	R369			1151GT4A22MBGE3							
CMS-PT-2	CONTAINMENT PRESS MONITORING IR-68	58	259004	A D	1 3	1 4	0 0			07	R	N
2	R 551 8.2/H.7	R369			1151GP7A22MBGE							
CMS-PT-2R	PRIMARY CONT. PRESS.	59	259006		2 0							
2	R 550 H.7/8.2	G080			163C1564P442203							
CMS-PT-3	SUPPRES.CHAMB.PRESS.MONITOR IR-66	59	259004	A B	1 0	1 4				07	R	N
2	R 501 N.0/5.1	R369			1151GPZA22MBGE3							
CMS-PT-4	SUPPRES.CHAMB.PRESS.MONITOR IR-63	59	259004	A B	1 0	1 4				07	R	N
2	R 501 L.4/9.3	A369			1151GPZA227BGE3							
CMS-PT-5	CONTAINMENT PRESS.MONITORING IR-67	59	259004	A B	1 3	1 4				07	R	N
2	R 555 5.8/M.8	R369			1151GT7A22MBGE3							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TH	HL
CMS-PT-6	CONTAINMENT PRESS.MONITORING IR-68	59	259004	A B	1 3	1 4				07	R	N
2	R 551 8.2/H.7	R369			1151GP4A22M8GE3							
CMS-PT-6R	CONTAINMENT PRESS.HIGH RANGE	59	259006	A	2 0	1 4				07	R	N
2	R 550 N.7/8.2	G080			163C1564P712203							
CMS-RE-12A	RE FOR DRYWELL				1 3							
2	R											
CMS-RE-12B	RE FOR DRYWELL				1 3							
2	R											
CMS-RE-27B	RE FOR LOCA DRYWELL MONITOR	928			1 3							
2	R 526											
CMS-RE-27D	RAD ELEMENT ELEVATED RELEASE PT.	928			1 3							
2	R 611 H3/6											
CMS-TE-17A	TEMPERATURE ELEMENT EL 564'0"			B	1 3		0 1			99+		N
2	C 564											
CMS-TE-17B	TEMPERATURE ELEMENT EL 548'0"			B	1 3		0 1			99+		N
2	C 548											
CMS-TE-17C	TEMPERATURE ELEMENT EL 532'0"			B	1 3		0 1			99+		N
2	C 532											
CMS-TE-17D	TEMPERATURE ELEMENT EL 516'0"			B	1 3		0 1			99+		N
2	C 516											
CMS-TE-21	REACTOR DRYWELL	218		D	1 3							
2	C 515											
CMS-TE-22	REACTOR DRYWELL	218		D	1 3							
2	C 515											
CMS-TE-23	REACTOR DRYWELL	218		D	1 3							
2	C 515											
CMS-TE-41	TE FOR SUPPRESSION POOL WATER	218	339002	D	1 0							
2	C 451 2 DEG AZ	H329			TC-113X-T-A-24-3							
CMS-TE-42	TE FOR SUPPRESSION POOL AIR	218	339002	D	1 0							
2	C 492 225 DEG AZ	H329			TC-113X-T-A-24-3							
CMS-TE-43	TE FOR SUPPRESSION POOL WATER	218	339002	D	1 0							
2	C 451 225 DEG AZ	H329			TC-113X-T-A-24-3							
CMS-TE-44	TE FOR SUPPRESION POOL AIR	218	339002	D	1 0							
2	C 492 2 DEG AZ	H329			TC-113X-T-A-24-3							
CRA-EHC-1A1					3 3							
2												
CRA-EHC-1A2		216			3 3							
2	C 516 260 D AZ R19											
CRA-EHC-1B1		216			3 3							
2	C 514											
CRA-EHC-1B2		216			3 3							
2	C 509 210 D AZ R18											
CRA-EHC-1C1		216			3 3							
2	C 520											
CRA-EHC-1C2		216			3 3							
2	C 515											
CRA-LMS-2A					3 3							
2												
CRA-LMS-2B					3 3							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TH	HL
CRA-M-1A1	30HP/37.6A MTR DR.FOR CRA-FN-1A1	67	213015		3 3							Y
2	62 D AZ R30	R165			/365TCZ							
CRA-M-1A2	50HP/65A MTR FOR CRA-FN-1A2	67	213046		3 3							Y
2	66 D AZ R30	R165			/444TCZ							
CRA-M-1B1	50HP/65-36A MTR DR. CRA-FN-1B1	67	213015		3 3							Y
2	182 D AZ R30	R165			/365TCZ							
CRA-M-1B2	50HP/36A MTR DR. FOR CRA-FN-1B2	67	213046		3 3							Y
2	186 D AZ R30	R165			/444TCZ							
CRA-M-1C1	30HP/37.6A MTR DR. FOR CRA-FN-1C1	67	213015		3 3							Y
2	271 D AZ R30	R165			/365TCZ							
CRA-M-1C2	50HP/65A MTR DR. FOR CRA-FN-1C2	67	213046		3 3							Y
2	275 D AZ R30	R165			/444TCZ							
CRA-M-2A1	30HP/37.6A MOTOR FOR CRA-FN-2A1	67			3 3							Y
2	C 522 270 DEG	R165										
CRA-M-2A2	50HP/65-36A MOTOR FOR CRA-FN-2A2	67			3 3							Y
2	C 522 270 DEG	R165										
CRA-M-2B1	75HP/?A MTR DRIVER FOR CRA-FN-2B1	67			3 3							Y
2	C 522											
CRA-M-2B2	25HP/?A MTR DRIVER FOR CRA-FN-2B2	67			3 3							Y
2	C 522											
CRA-M-3A	10HP/17.1A MTR DRIVER CRA-FN-3A	22A	213045	S B	3 3	1 4	0 C			60		Y
2	C 534 50 D AZ R17	R165			600287-8/AOH							
CRA-M-3B	10HP/17.1A MTR DRIVER CRA-FN-3B	22A	213045	S B	3 3	1 4	0 0			60		Y
2	C 534 140 D AZ R17	R165			600287-8/AOH							
CRA-M-3C	10HP/17.1A MTR DRIVER CRA-FN-3C	22A	213045	S B	3 3	1 4	0 0			60	W	Y
2	C 534 60 D AZ R17	R165			600287-8/AOH							
CRA-M-4A	7.5HP/?A MTR DRIVER FOR CRA-FN-4A	22A	213045	S B	3 3	1 4	0 0			60		Y
2	C 572 330 D AZ R17	R165			600287-9/AOH							
CRA-M-4B	7.5HP/?A MTR DRIVER FOR CRA-FN-4B	22A	213045	S B	3 3	1 4	0 0			60		Y
2	C 572 206 D AZ R17	R165			600287-9/AOH							
CRA-M-5A	10HP/17.1A MTR DRIVER CRA-FN-5A	22A	213045	S B	3 3	1 4	0 0			60		Y
2	C 572 180 D AZ R17	R165			6002878/AOH							
CRA-M-5B	10HP/17.1A MTR DRIVER CRA-FN-5B	22A	213045	S B	3 3	1 4	0 0			60		Y
2	C 572 20 D AZ R17	R165			600287-8/AOH							
CRA-M-5C	10HP/17.1A MTR DRIVER CRA-M-5C	22A	213045	S B	3 3	1 4	0 0			60		Y
2	C 572 270 D AZ R17	R165			600287-8/AOH							
CRA-M-5D	10HP/17.1A MTR DRIVER CRA-FN-5D	22A	213045	S B	3 3	1 4	0 0			60		Y
2	C 572 90 D AZ R17	R165			600287-8/AOH							
CRD-DPIS-15	DIFF. PRESS. INDIC. SWITCH		086001		2 3							
2	R	B080			288							
CRD-DPIS-2	DIFF. PRESS. INDIC. SWITCH	02	086001		2 3							
2	R	B080			288							
CRD-DPT-11	DIFF. PRESS. TRANSMITTER	02			2 1							
2	R	B080			368							
CRD-DPT-8	DIFF.PRESS. TRANSMITTER	02			2 3							
2	R	B080			368							
CRD-E/P-001					2 1							
2	W 501											

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
CRD-FC-630	CRD FLOW	02			3 3							
2	W 501 K9/14.1	G080			209A5584P011							
CRD-FT-7	CRD FLOW - -	02			2 1							
2	R											
CRD-FT-9	CRD FLOW - -	02			2 1							
2	R											
CRD-LS-129/0219	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4	G080			117C|434P1							
CRD-LS-129/0223	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4	G080			117C|434P1							
CRD-LS-129/0227	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/6.4	G080			117C|434P1							
CRD-LS-129/0231	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4	G080			117C|434P1							
CRD-LS-129/0235	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/8.4	G080			117C|434P1							
CRD-LS-129/0239	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/8.4	G080			117C|434P1							
CRD-LS-129/0243	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/8.4	G080			117C|434P1							
CRD-LS-129/0615	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4	G080			117C|434P1							
CRD-LS-129/0619	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4	G080			117C|434P1							
CRD-LS-129/0623	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4	G080			117C|434P1							
CRD-LS-129/0627	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4	G080			117C|434P1							
CRD-LS-129/0631	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4	G080			117C|434P1							
CRD-LS-129/0635	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/8.4	G080			117C|434P1							
CRD-LS-129/0639	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/8.4	G080			117C|434P1							
CRD-LS-129/0643	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/8.4	G080			117C|434P1							
CRD-LS-129/0647	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/8.4	G080			117C|434P1							
CRD-LS-129/1011	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4	G080			117C|434P1							
CRD-LS-129/1015	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4	G080			117C|434P1							
CRD-LS-129/1019	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4	G080			117C|434P1							
CRD-LS-129/1023	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4	G080			117C|434P1							
CRD-LS-129/1027	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4	G080			117C|434P1							
CRD-LS-129/1031	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 522 L5/8.4	G080			117C|434P1							
CRD-LS-129/1035	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/8.4	G080			117C|434P1							
CRD-LS-129/1039	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/8.4	G080			117C|434P1							
CRD-LS-129/1043	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/8.4	G080			117C|434P1							
CRD-LS-129/1047	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/8.4	G080			117C|434P1							
CRD-LS-129/1051	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/8.4	G080			117C|434P1							
CRD-LS-129/1407	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4	G080			117C|434P1							
CRD-LS-129/1411	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4	G080			117C|434P1							
CRD-LS-129/1415	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4	G080			117C|434P1							
CRD-LS-129/1419	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4	G080			117C|434P1							
CRD-LS-129/1423	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4	G080			117C|434P1							
CRD-LS-129/1427	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4	G080			117C|434P1							
CRD-LS-129/1431	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4	G080			117C|434P1							
CRD-LS-129/1435	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/8.4	G080			117C|434P1							
CRD-LS-129/1439	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/8.4	G080			117C|434P1							
CRD-LS-129/1443	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/8.4	G080			117C|434P1							
CRD-LS-129/1447	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/8.4	G080			117C|434P1							
CRD-LS-129/1451	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/8.4	G080			117C|434P1							
CRD-LS-129/1455	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/8.4	G080			117C|434P1							
CRD-LS-129/1803	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4	G080			117C|434P1							
CRD-LS-129/1807	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4	G080			117C|434P1							
CRD-LS-129/1811	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4	G080			117C|434P1							
CRD-LS-129/1815	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4	G080			117C|434P1							
CRD-LS-129/1819	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4	G080			117C|434P1							
CRD-LS-129/1823	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4	G080			117C|434P1							

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EQUIPMENT NO.	DESCRIPTION	CONTRACT	QID	QS	USE	TEST	ANL	F/O	C	FREQ	TM	HL
LV	PLANT LOCATION	MFG			MFG MODEL NO.							
CRD-LS-129/1827	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4	G080			117C|434P1							
CRD-LS-129/1831	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4	G080			117C|434P1							
CRD-LS-129/1835	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/8.4	G080			117C|434P1							
CRD-LS-129/1839	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/8.4	G080			117C|434P1							
CRD-LS-129/1843	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/8.4	G080			117C|434P1							
CRD-LS-129/1847	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/8.4	G080			117C|434P1							
CRD-LS-129/1851	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/8.4	G080			117C|434P1							
CRD-LS-129/1855	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/8.4	G080			117C|434P1							
CRD-LS-129/1859	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/8.4	G080			117C|434P1							
CRD-LS-129/2203	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4	G080			117C|434P1							
CRD-LS-129/2207	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4	G080			117C|434P1							
CRD-LS-129/2211	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4	G080			117C|434P1							
CRD-LS-129/2215	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4	G080			117C|434P1							
CRD-LS-129/2219	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4	G080			117C|434P1							
CRD-LS-129/2223	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4	G080			117C|434P1							
CRD-LS-129/2227	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4	G080			117C|434P1							
CRD-LS-129/2231	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4	G080			117C|434P1							
CRD-LS-129/2235	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/8.4	G080			117C|434P1							
CRD-LS-129/2239	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/8.4	G080			117C|434P1							
CRD-LS-129/2243	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/8.4	G080			117C|434P1							
CRD-LS-129/2247	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/8.4	G080			117C|434P1							
CRD-LS-129/2251	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/8.4	G080			117C|434P1							
CRD-LS-129/2255	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/8.4	G080			117C|434P1							
CRD-LS-129/2259	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/8.4	G080			117C|434P1							
CRD-LS-129/2603	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 522 L5/8.4	G080			117C|434P1							
CRD-LS-129/2607	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4	G080			117C|434P1							
CRD-LS-129/2611	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4	G080			117C|434P1							
CRD-LS-129/2615	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4	G080			117C|434P1							
CRD-LS-129/2619	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4	G080			117C|434P1							
CRD-LS-129/2623	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4	G080			117C|434P1							
CRD-LS-129/2627	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4	G080			117C|434P1							
CRD-LS-129/2631	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4	G080			117C|434P1							
CRD-LS-129/2635	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/8.4	G080			117C|434P1							
CRD-LS-129/2639	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/8.4	G080			117C|434P1							
CRD-LS-129/2643	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/8.4	G080			117C|434P1							
CRD-LS-129/2647	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/8.4	G080			117C|434P1							
CRD-LS-129/2651	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/8.4	G080			117C|434P1							
CRD-LS-129/2655	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/8.4	G080			117C|434P1							
CRD-LS-129/2659	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/8.4	G080			117C|434P1							
CRD-LS-129/3003	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4	G080			117C|434P1							
CRD-LS-129/3007	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4	G080			117C|434P1							
CRD-LS-129/3011	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4	G080			117C|434P1							
CRD-LS-129/3015	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4	G080			117C|434P1							
CRD-LS-129/3019	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4	G080			117C|434P1							
CRD-LS-129/3023	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4	G080			117C|434P1							
CRD-LS-129/3027	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4	G080			117C|434P1							
CRD-LS-129/3031	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/3.7	G080			117C|434P1							
CRD-LS-129/3035	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/3.7	G080			117C|434P1							
CRD-LS-129/3039	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/3.7	G080			117C|434P1							

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EQUIPMENT NO.	LV	DESCRIPTION	PLANT LOCATION	CONTRACT	MFG	QID	QS	USE	TEST	ANL	MFG MODEL NO.	F/O	C	FREQ	TM	HL
CRD-LS-129/3043	2	LIQUID LEVEL 60CC ACCUM WATER LEAK	R 522 K2/3.7	02C12	G080	207013	A B	1 3	1 1	0 1	117C|434P1				F	N
CRD-LS-129/3047	2	LIQUID LEVEL 60CC ACCUM WATER LEAK	R 522 K2/3.7	02C12	G080	207013	A B	1 3	1 1	0 1	117C|434P1				F	N
CRD-LS-129/3051	2	LIQUID LEVEL 60CC ACCUM WATER LEAK	R 522 K2/3.7	02C12	G080	207013	A B	1 3	1 1	0 1	117C|434P1				F	N
CRD-LS-129/3055	2	LIQUID LEVEL 60CC ACCUM WATER LEAK	R 522 K2/3.7	02C12	G080	207013	A B	1 3	1 1	0 1	117C|434P1				F	N
CRD-LS-129/3059	2	LIQUID LEVEL 60CC ACCUM WATER LEAK	R 522 K2/3.7	02C12	G080	207013	A B	1 3	1 1	0 1	117C|434P1				F	N
CRD-LS-129/3403	2	LIQUID LEVEL 60CC ACCUM WATER LEAK	R 522 L5/3.7	02C12	G080	207013	A B	1 3	1 1	0 1	117C|434P1				F	N
CRD-LS-129/3407	2	LIQUID LEVEL 60CC ACCUM WATER LEAK	R 522 L5/3.7	02C12	G080	207013	A B	1 3	1 1	0 1	117C|434P1				F	N
CRD-LS-129/3411	2	LIQUID LEVEL 60CC ACCUM WATER LEAK	R 522 L5/3.7	02C12	G080	207013	A B	1 3	1 1	0 1	117C|434P1				F	N
CRD-LS-129/3415	2	LIQUID LEVEL 60CC ACCUM WATER LEAK	R 522 L5/3.7	02C12	G080	207013	A B	1 3	1 1	0 1	117C|434P1				F	N
CRD-LS-129/3419	2	LIQUID LEVEL 60CC ACCUM WATER LEAK	R 522 L5/3.7	02C12	G080	207013	A B	1 3	1 1	0 1	117C|434P1				F	N
CRD-LS-129/3423	2	LIQUID LEVEL 60CC ACCUM WATER LEAK	R 522 L5/3.7	02C12	G080	207013	A B	1 3	1 1	0 1	117C|434P1				F	N
CRD-LS-129/3427	2	LIQUID LEVEL 60CC ACCUM WATER LEAK	R 522 L5/3.7	02C12	G080	207013	A B	1 3	1 1	0 1	117C|434P1				F	N
CRD-LS-129/3431	2	LIQUID LEVEL 60CC ACCUM WATER LEAK	R 522 K2/3.7	02C12	G080	207013	A B	1 3	1 1	0 1	117C|434P1				F	N
CRD-LS-129/3435	2	LIQUID LEVEL 60CC ACCUM WATER LEAK	R 522 K2/3.7	02C12	G080	207013	A B	1 3	1 1	0 1	117C|434P1				F	N
CRD-LS-129/3439	2	LIQUID LEVEL 60CC ACCUM WATER LEAK	R 522 K2/3.7	02C12	G080	207013	A B	1 3	1 1	0 1	117C|434P1				F	N
CRD-LS-129/3443	2	LIQUID LEVEL 60CC ACCUM WATER LEAK	R 522 K2/3.7	02C12	G080	207013	A B	1 3	1 1	0 1	117C|434P1				F	N
CRD-LS-129/3447	2	LIQUID LEVEL 60CC ACCUM WATER LEAK	R 522 K2/3.7	02C12	G080	207013	A B	1 3	1 1	0 1	117C|434P1				F	N
CRD-LS-129/3451	2	LIQUID LEVEL 60CC ACCUM WATER LEAK	R 522 K2/3.7	02C12	G080	207013	A B	1 3	1 1	0 1	117C|434P1				F	N
CRD-LS-129/3455	2	LIQUID LEVEL 60CC ACCUM WATER LEAK	R 522 K2/3.7	02C12	G080	207013	A B	1 3	1 1	0 1	117C|434P1				F	N
CRD-LS-129/3459	2	LIQUID LEVEL 60CC ACCUM WATER LEAK	R 522 K2/3.7	02C12	G080	207013	A B	1 3	1 1	0 1	117C|434P1				F	N
CRD-LS-129/3803	2	LIQUID LEVEL 60CC ACCUM WATER LEAK	R 522 L5/3.7	02C12	G080	207013	A B	1 3	1 1	0 1	117C|434P1				F	N
CRD-LS-129/3807	2	LIQUID LEVEL 60CC ACCUM WATER LEAK	R 522 L5/3.7	02C12	G080	207013	A B	1 3	1 1	0 1	117C|434P1				F	N
CRD-LS-129/3811	2	LIQUID LEVEL 60CC ACCUM WATER LEAK	R 522 L5/3.7	02C12	G080	207013	A B	1 3	1 1	0 1	117C|434P1				F	N
CRD-LS-129/3815	2	LIQUID LEVEL 60CC ACCUM WATER LEAK	R 522 L5/3.7	02C12	G080	207013	A B	1 3	1 1	0 1	117C|434P1				F	N
CRD-LS-129/3819		LIQUID LEVEL 60CC ACCUM WATER LEAK		02C12		207013	A B	1 3	1 1	0 1					F	N

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<tr><th>EQUIPMENT NO.
LV</th><th>DESCRIPTION
PLANT LOCATION</th><th>CONTRACT
MFG</th><th>QID</th><th>QS</th><th>USE</th><th>TEST
MFG MODEL NO.</th><th>ANL</th><th>F/O</th><th>C</th><th>FREQ</th><th>TM</th><th>HL</th></tr>
<tr><td>2</td><td>R 522 L5/3.7</td><td>G080</td><td></td><td></td><td colspan="2">117C|434P1</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
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<tr><td>2</td><td>R 522 L5/3.7</td><td>G080</td><td></td><td></td><td colspan="2">117C|434P1</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>CRD-LS-129/3827</td><td>LIQUID LEVEL 60CC ACCUM WATER LEAK</td><td>02C12</td><td>207013</td><td>A B</td><td>1 3</td><td>1 1</td><td>0 1</td><td></td><td></td><td></td><td>F</td><td>N</td></tr>
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<tr><td>2</td><td>R 522 K2/3.7</td><td>G080</td><td></td><td></td><td colspan="2">117C|434P1</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
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<tr><td>CRD-LS-129/3839</td><td>LIQUID LEVEL 60CC ACCUM WATER LEAK</td><td>02C12</td><td>207013</td><td>A B</td><td>1 3</td><td>1 1</td><td>0 1</td><td></td><td></td><td></td><td>F</td><td>N</td></tr>
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<tr><td>CRD-LS-129/4203</td><td>LIQUID LEVEL 60CC ACCUM WATER LEAK</td><td>02C12</td><td>207013</td><td>A B</td><td>1 3</td><td>1 1</td><td>0 1</td><td></td><td></td><td></td><td>F</td><td>N</td></tr>
<tr><td>2</td><td>R 522 L5/3.7</td><td>G080</td><td></td><td></td><td colspan="2">117C|434P1</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>CRD-LS-129/4207</td><td>LIQUID LEVEL 60CC ACCUM WATER LEAK</td><td>02C12</td><td>207013</td><td>A B</td><td>1 3</td><td>1 1</td><td>0 1</td><td></td><td></td><td></td><td>F</td><td>N</td></tr>
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<tr><td>CRD-LS-129/4231</td><td>LIQUID LEVEL 60CC ACCUM WATER LEAK</td><td>02C12</td><td>207013</td><td>A B</td><td>1 3</td><td>1 1</td><td>0 1</td><td></td><td></td><td></td><td>F</td><td>N</td></tr>
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WNP-2

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
CRD-LS-129/4259	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/3.7	G080			117C|434P1							
CRD-LS-129/4607	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/3.7	G080			117C|434P1							
CRD-LS-129/4611	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/3.7	G080			117C|434P1							
CRD-LS-129/4615	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/3.7	G080			117C|434P1							
CRD-LS-129/4619	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/3.7	G080			117C|434P1							
CRD-LS-129/4623	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/3.7	G080			117C|434P1							
CRD-LS-129/4627	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/3.7	G080			117C|434P1							
CRD-LS-129/4631	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/3.7	G080			117C|434P1							
CRD-LS-129/4635	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/3.7	G080			117C|434P1							
CRD-LS-129/4639	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/3.7	G080			117C|434P1							
CRD-LS-129/4643	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/3.7	G080			117C|434P1							
CRD-LS-129/4647	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/3.7	G080			117C|434P1							
CRD-LS-129/4651	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/3.7	G080			117C|434P1							
CRD-LS-129/4655	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/3.7	G080			117C|434P1							
CRD-LS-129/5011	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/3.7	G080			117C|434P1							
CRD-LS-129/5015	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/3.7	G080			117C|434P1							
CRD-LS-129/5019	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/3.7	G080			117C|434P1							
CRD-LS-129/5023	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/3.7	G080			117C|434P1							
CRD-LS-129/5027	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/3.7	G080			117C|434P1							
CRD-LS-129/5031	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/3.7	G080			117C|434P1							
CRD-LS-129/5035	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/3.7	G080			117C|434P1							
CRD-LS-129/5039	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/3.7	G080			117C|434P1							
CRD-LS-129/5043	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/3.7	G080			117C|434P1							
CRD-LS-129/5047	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/3.7	G080			117C|434P1							
CRD-LS-129/5051	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 522 K2/3.7	G080			117C|434P1							
CRD-LS-129/5415	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/3.7	G080			117C|434P1							
CRD-LS-129/5419	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/3.7	G080			117C|434P1							
CRD-LS-129/5423	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/3.7	G080			117C|434P1							
CRD-LS-129/5427	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/3.7	G080			117C|434P1							
CRD-LS-129/5431	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/3.7	G080			117C|434P1							
CRD-LS-129/5435	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/3.7	G080			117C|434P1							
CRD-LS-129/5439	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/3.7	G080			117C|434P1							
CRD-LS-129/5443	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/3.7	G080			117C|434P1							
CRD-LS-129/5447	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/3.7	G080			117C|434P1							
CRD-LS-129/5819	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/3.7	G080			117C|434P1							
CRD-LS-129/5823	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/3.7	G080			117C|434P1							
CRD-LS-129/5827	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 L5/3.7	G080			117C|434P1							
CRD-LS-129/5831	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/3.7	G080			117C|434P1							
CRD-LS-129/5835	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/3.7	G080			117C|434P1							
CRD-LS-129/5839	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/3.7	G080			117C|434P1							
CRD-LS-129/5843	LIQUID LEVEL 60CC ACCUM WATER LEAK	02C12	207013	A B	1 3	1 1	0 1				F	N
2	R 522 K2/3.7	G080			117C|434P1							
CRD-LS-13A	CRD LEVEL - -	02C12	207007	T D	1 3	1 4	0 0			00	W	N
2	R 522 J2/6.9	M040			5.0-751-1X-MPG-S13HY							
CRD-LS-13B	CRD LEVEL - -	02C12	207007	T D	1 3	1 4	0 0			00	W	N
2	R 530 J2/6.9	M040			5.0-751-1X-MPG-S13HY							
CRD-LS-13C	CRD LEVEL - -	02C12	207005	T D	1 3	1 4	0 0			00	W	N
2	R 532 J.4/4.9	M040			5.0-751-1X-MPG-M13HY							
CRD-LS-13D	CRD LEVEL - -	02C12	207005	T D	1 3	1 4	0 0			00	W	N
2	R 532 J.4/4.9	M040			5.0-751-1X-MPG-M13HY							
CRD-LS-13E	CRD LEVEL - -	02C12	207004	T D	1 3	1 4	0 0			00	W	N
2	R 528 J.4/4.9	M040			5.0-751-2X-MPG-M14HY							
CRD-LS-13F	CRD LEVEL - -	02C12	207004	T D	1 3	1 4	0 0			00	W	N
2	R 525 J.4/4.9	M040			5.0-751-2X-MPG-M14HY							
CRD-M/A-9A	MAN/AUTO. STATION	02			2 1							
2	R											
CRD-M/A-9B	MAN/AUTO. STATION	02			2 1							
2	R											

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EQUIPMENT NO.	LV	DESCRIPTION	PLANT LOCATION	CONTRACT	MFG	QID	QS	USE	MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
CRD-PI-10	2	EXHAUST WATER HDR PRESS	R	02				2 1	613 B							
CRD-PI-12	2	CRD PRESSURE - -	R					2 1	613 B							
CRD-PI-16	2	CHARGING WATER HDR	R					2 1	613 B							
CRD-PI-17A	2	INLET TO CRD-ST-1A	R	02	R290	243004		2 0	613B							
CRD-PI-17B	2	INLET TO CRD-ST-1B	R	02	R290	243004		2 0	613B							
CRD-PI-6	2	CRD-FU-3A,B T CHARGING WATER HDR	R	02				2 1	613 B							
CRD-PI-7	2	CRD PRESSURE - -	R	02				2 1	613B							
CRD-PI-8	2	CRD-P-1,A,B DISCHARGE	R	02				2 0	613 B							
CRD-PS-1A	2	INLET TO CRD-ST-1A	R	02	S382	256050		2 3	6N-AA21X3VTT							
CRD-PS-1B	2	INLET TO CRD-ST-1B	R	02	S382	256050		2 3	6N-AA21-X3VTT							
CRD-PS-130/0219	2	ACCUM PRESS 970-940 PSIG DECREAS	R 522 L5/8.4	02C12		167001	A B	1 3		1 1	0 1				F	N
CRD-PS-130/0223	2	ACCUM PRESS 970-940 PSIG DECREAS	R 522 L5/8.4	02C12		167001	A B	1 3		1 1	0 1				F	N
CRD-PS-130/0227	2	ACCUM PRESS 970-940 PSIG DECREAS	R 522 L5/8.4	02C12		167001	A B	1 3		1 1	0 1				F	N
CRD-PS-130/0231	2	ACCUM PRESS 970-940 PSIG DECREAS	R 522 L5/8.4	02C12		167001	A B	1 3		1 1	0 1				F	N
CRD-PS-130/0235	2	ACCUM PRESS 970-940 PSIG DECREAS	R 522 K2/8.4	02C12		167001	A B	1 3		1 1	0 1				F	N
CRD-PS-130/0239	2	ACCUM PRESS 970-940 PSIG DECREAS	R 522 K2/8.4	02C12		167001	A B	1 3		1 1	0 1				F	N
CRD-PS-130/0243	2	ACCUM PRESS 970-940 PSIG DECREAS	R 522 K2/8.4	02C12		167001	A B	1 3		1 1	0 1				F	N
CRD-PS-130/0615	2	ACCUM PRESS 970-940 PSIG DECREAS	R 522 L5/8.4	02C12		167001	A B	1 3		1 1	0 1				F	N
CRD-PS-130/0619	2	ACCUM PRESS 970-940 PSIG DECREAS	R 522 L5/8.4	02C12		167001	A B	1 3		1 1	0 1				F	N
CRD-PS-130/0623	2	ACCUM PRESS 970-940 PSIG DECREAS	R 522 L5/8.4	02C12		167001	A B	1 3		1 1	0 1				F	N
CRD-PS-130/0627	2	ACCUM PRESS 970-940 PSIG DECREAS	R 522 L5/8.4	02C12		167001	A B	1 3		1 1	0 1				F	N
CRD-PS-130/0631	2	ACCUM PRESS 970-940 PSIG DECREAS	R 522 L5/8.4	02C12		167001	A B	1 3		1 1	0 1				F	N
CRD-PS-130/0635	2	ACCUM PRESS 970-940 PSIG DECREAS	R 522 K2/8.4	02C12		167001	A B	1 3		1 1	0 1				F	N
CRD-PS-130/0639	2	ACCUM PRESS 970-940 PSIG DECREAS	R 522 K2/8.4	02C12		167001	A B	1 3		1 1	0 1				F	N
CRD-PS-130/0643		ACCUM PRESS 970-940 PSIG DECREAS		02C12		167001	A B	1 3		1 1	0 1				F	N

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG	TEST / MODEL NO.	ANL	F/O	C	FREQ	TM	HL
2	R 522 K2/8.4											
CRD-PS-130/0647 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/8.4	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/1011 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/8.4	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/1015 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/8.4	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/1019 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/8.4	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/1023 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/8.4	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/1027 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/8.4	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/1031 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/8.4	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/1035 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/8.4	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/1039 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/8.4	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/1043 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/8.4	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/1047 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/8.4	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/1051 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/8.4	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/1407 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/8.4	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/1411 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/8.4	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/1415 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/8.4	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/1419 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/8.4	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/1423 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/8.4	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/1427 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/8.4	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/1431 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/8.4	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/1435 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/8.4	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/1439 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/8.4	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/1443 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/8.4	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/1447 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/8.4	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/1451 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/8.4	02C12	167001	A B	1 3	1 1	0 1				F	N

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG	TEST / MODEL NO.	ANL	F/O	C	FREQ	TM	HL
CRD-PS-130/1455 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/8.4	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/1803 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/8.4	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/1807 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/8.4	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/1811 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/8.4	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/1815 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/8.4	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/1819 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/8.4	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/1823 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/8.4	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/1827 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/8.4	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/1831 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/8.4	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/1835 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/8.4	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/1839 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/8.4	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/1843 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/8.4	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/1847 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/8.4	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/1851 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/8.4	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/1855 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/8.4	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/1859 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/8.4	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/2203 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/8.4	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/2207 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/8.4	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/2211 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/8.4	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/2215 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/8.4	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/2219 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/8.4	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/2223 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/8.4	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/2227 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/8.4	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/2231 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/8.4	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/2235	ACCUM PRESS 970-940 PSIG DECREAS	02C12	167001	A B	1 3	1 1	0 1				F	N

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 522 K2/8.4											
CRD-PS-130/2239	ACCUM PRESS 970-940 PSIG DECREAS	02C12	167001	A B	1 3	1 1	0 1				F	N
2	R 522 K2/8.4											
CRD-PS-130/2243	ACCUM PRESS 970-940 PSIG DECREAS	02C12	167001	A B	1 3	1 1	0 1				F	N
2	R 522 K2/8.4											
CRD-PS-130/2247	ACCUM PRESS 970-940 PSIG DECREAS	02C12	167001	A B	1 3	1 1	0 1				F	N
2	R 522 K2/8.4											
CRD-PS-130/2251	ACCUM PRESS 970-940 PSIG DECREAS	02C12	167001	A B	1 3	1 1	0 1				F	N
2	R 522 K2/8.4											
CRD-PS-130/2255	ACCUM PRESS 970-940 PSIG DECREAS	02C12	167001	A B	1 3	1 1	0 1				F	N
2	R 522 K2/8.4											
CRD-PS-130/2259	ACCUM PRESS 970-940 PSIG DECREAS	02C12	167001	A B	1 3	1 1	0 1				F	N
2	R 522 K2/8.4											
CRD-PS-130/2603	ACCUM PRESS 970-940 PSIG DECREAS	02C12	167001	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4											
CRD-PS-130/2607	ACCUM PRESS 970-940 PSIG DECREAS	02C12	167001	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4											
CRD-PS-130/2611	ACCUM PRESS 970-940 PSIG DECREAS	02C12	167001	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4											
CRD-PS-130/2615	ACCUM PRESS 970-940 PSIG DECREAS	02C12	167001	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4											
CRD-PS-130/2619	ACCUM PRESS 970-940 PSIG DECREAS	02C12	167001	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4											
CRD-PS-130/2623	ACCUM PRESS 970-940 PSIG DECREAS	02C12	167001	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4											
CRD-PS-130/2627	ACCUM PRESS 970-940 PSIG DECREAS	02C12	167001	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4											
CRD-PS-130/2631	ACCUM PRESS 970-940 PSIG DECREAS	02C12	167001	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4											
CRD-PS-130/2635	ACCUM PRESS 970-940 PSIG DECREAS	02C12	167001	A B	1 3	1 1	0 1				F	N
2	R 522 K2/8.4											
CRD-PS-130/2639	ACCUM PRESS 970-940 PSIG DECREAS	02C12	167001	A B	1 3	1 1	0 1				F	N
2	R 522 K2/8.4											
CRD-PS-130/2643	ACCUM PRESS 970-940 PSIG DECREAS	02C12	167001	A B	1 3	1 1	0 1				F	N
2	R 522 K2/8.4											
CRD-PS-130/2647	ACCUM PRESS 970-940 PSIG DECREAS	02C12	167001	A B	1 3	1 1	0 1				F	N
2	R 522 K2/8.4											
CRD-PS-130/2651	ACCUM PRESS 970-940 PSIG DECREAS	02C12	167001	A B	1 3	1 1	0 1				F	N
2	R 522 K2/8.4											
CRD-PS-130/2655	ACCUM PRESS 970-940 PSIG DECREAS	02C12	167001	A B	1 3	1 1	0 1				F	N
2	R 522 K2/8.4											
CRD-PS-130/2659	ACCUM PRESS 970-940 PSIG DECREAS	02C12	167001	A B	1 3	1 1	0 1				F	N
2	R 522 K2/8.4											
CRD-PS-130/3003	ACCUM PRESS 970-940 PSIG DECREAS	02C12	167001	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4											
CRD-PS-130/3007	ACCUM PRESS 970-940 PSIG DECREAS	02C12	167001	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4											
CRD-PS-130/3011	ACCUM PRESS 970-940 PSIG DECREAS	02C12	167001	A B	1 3	1 1	0 1				F	N
2	R 522 L5/8.4											

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EQUIPMENT NO. LV	DESCRIPTION PLANT LOCATION	CONTRACT MFG	QID	QS	USE MFG	TEST MODEL NO.	ANL	F/O	C	FREQ	TM	HL
CRD-PS-130/3015 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/8.4	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/3019 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/8.4	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/3023 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/8.4	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/3027 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/8.4	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/3031 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/3035 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/3039 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/3043 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/3047 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/3051 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/3055 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/3059 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/3403 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/3407 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/3411 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/3415 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/3419 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/3423 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/3427 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/3431 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/3435 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/3439 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/3443 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/3447 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/3451	ACCUM PRESS 970-940 PSIG DECREAS	02C12	167001	A B	1 3	1 1	0 1				F	N

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE	TEST / MFG MODEL NO.	ANL	F/O	C	FREQ	TM	HL
2	R 522 K2/3.7											
CRD-PS-130/3455 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/3459 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/3803 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/3807 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/3811 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/3815 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/3819 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/3823 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/3827 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/3831 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/3835 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/3839 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/3843 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/3847 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/3851 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/3855 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/3859 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/4203 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/4207 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/4211 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/4215 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/4219 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/4223 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/4227 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N

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EQUIPMENT NO. LV	DESCRIPTION PLANT LOCATION	CONTRACT MFG	QID	QS	USE	TEST MFG MODEL NO.	ANL	F/O	C	FREQ	TM	HL
CRD-PS-130/4231 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/4235 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/4239 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/4243 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/4247 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/4251 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/4255 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/4259 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/4607 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/4611 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/4615 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/4619 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/4623 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/4627 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/4631 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/4635 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/4639 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/4643 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/4647 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/4651 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/4655 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 K2/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/5011 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/5015 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/5019 2	ACCUM PRESS 970-940 PSIG DECREAS R 522 L5/3.7	02C12	167001	A B	1 3	1 1	0 1				F	N
CRD-PS-130/5023	ACCUM PRESS 970-940 PSIG DECREAS	02C12	167001	A B	1 3	1 1	0 1				F	N

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 522 L5/3.7											
CRD-PS-130/5027	ACCUM PRESS 970-940 PSIG DECREAS	02C12	167001	A B	1 3	1 1	0 1				F	N
2	R 522 L5/3.7											
CRD-PS-130/5031	ACCUM PRESS 970-940 PSIG DECREAS	02C12	167001	A B	1 3	1 1	0 1				F	N
2	R 522 K2/3.7											
CRD-PS-130/5035	ACCUM PRESS 970-940 PSIG DECREAS	02C12	167001	A B	1 3	1 1	0 1				F	N
2	R 522 K2/3.7											
CRD-PS-130/5039	ACCUM PRESS 970-940 PSIG DECREAS	02C12	167001	A B	1 3	1 1	0 1				F	N
2	R 522 K2/3.7											
CRD-PS-130/5043	ACCUM PRESS 970-940 PSIG DECREAS	02C12	167001	A B	1 3	1 1	0 1				F	N
2	R 522 K2/3.7											
CRD-PS-130/5047	ACCUM PRESS 970-940 PSIG DECREAS	02C12	167001	A B	1 3	1 1	0 1				F	N
2	R 522 K2/3.7											
CRD-PS-130/5051	ACCUM PRESS 970-940 PSIG DECREAS	02C12	167001	A B	1 3	1 1	0 1				F	N
2	R 522 K2/3.7											
CRD-PS-130/5415	ACCUM PRESS 970-940 PSIG DECREAS	02C12	167001	A B	1 3	1 1	0 1				F	N
2	R 522 L5/3.7											
CRD-PS-130/5419	ACCUM PRESS 970-940 PSIG DECREAS	02C12	167001	A B	1 3	1 1	0 1				F	N
2	R 522 L5/3.7											
CRD-PS-130/5423	ACCUM PRESS 970-940 PSIG DECREAS	02C12	167001	A B	1 3	1 1	0 1				F	N
2	R 522 L5/3.7											
CRD-PS-130/5427	ACCUM PRESS 970-940 PSIG DECREAS	02C12	167001	A B	1 3	1 1	0 1				F	N
2	R 522 L5/3.7											
CRD-PS-130/5431	ACCUM PRESS 970-940 PSIG DECREAS	02C12	167001	A B	1 3	1 1	0 1				F	N
2	R 522 K2/3.7											
CRD-PS-130/5435	ACCUM PRESS 970-940 PSIG DECREAS	02C12	167001	A B	1 3	1 1	0 1				F	N
2	R 522 K2/3.7											
CRD-PS-130/5439	ACCUM PRESS 970-940 PSIG DECREAS	02C12	167001	A B	1 3	1 1	0 1				F	N
2	R 522 K2/3.7											
CRD-PS-130/5443	ACCUM PRESS 970-940 PSIG DECREAS	02C12	167001	A B	1 3	1 1	0 1				F	N
2	R 522 K2/3.7											
CRD-PS-130/5447	ACCUM PRESS 970-940 PSIG DECREAS	02C12	167001	A B	1 3	1 1	0 1				F	N
2	R 522 K2/3.7											
CRD-PS-130/5819	ACCUM PRESS 970-940 PSIG DECREAS	02C12	167001	A B	1 3	1 1	0 1				F	N
2	R 522 L5/3.7											
CRD-PS-130/5823	ACCUM PRESS 970-940 PSIG DECREAS	02C12	167001	A B	1 3	1 1	0 1				F	N
2	R 522 L5/3.7											
CRD-PS-130/5827	ACCUM PRESS 970-940 PSIG DECREAS	02C12	167001	A B	1 3	1 1	0 1				F	N
2	R 522 L5/3.7											
CRD-PS-130/5831	ACCUM PRESS 970-940 PSIG DECREAS	02C12	167001	A B	1 3	1 1	0 1				F	N
2	R 522 K2/3.7											
CRD-PS-130/5835	ACCUM PRESS 970-940 PSIG DECREAS	02C12	167001	A B	1 3	1 1	0 1				F	N
2	R 522 K2/3.7											
CRD-PS-130/5839	ACCUM PRESS 970-940 PSIG DECREAS	02C12	167001	A B	1 3	1 1	0 1				F	N
2	R 522 K2/3.7											
CRD-PS-130/5843	ACCUM PRESS 970-940 PSIG DECREAS	02C12	167001	A B	1 3	1 1	0 1				F	N
2	R 522 K2/3.7											
CRD-PT-5	CRD-FU-3A,B TO CHARGING WATER HDR				2 1							
2	R											

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EQUIPMENT NO.	LV	DESCRIPTION	PLANT LOCATION	CONTRACT	MFG	QID	QS	USE	MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
CRD-PT-52	2	PRESSURE TRANSMITTER AIR SUP.	R					2 3								
CRD-V-110A	2	1.5" SOL. CAS-F-6 DISCH.	R 529 H.8/3.8	02C12	A499	361008		1 3	HT8316C37							
CRD-V-110B	2	1.5" SOL.CAS-F-6 DISCHARGE	R 528 H.8/3.8	02C12	A499	361008		1 3	HT8316C37							
CRD-V-9	2	1.5"SOLENOID CAS TO CRD-V-10	R 528 N.0/3.5	02C12	A499	361007	T O	1 3	HT832322		0 0					N
CSP-DPIS-4	2	PRIMARY SECONDARY CONTAIN.IR-63	R 501 L4/9.3	58	B080	086001	B N	2 3	288A	1 4	0 0			04		N
CSP-DPIS-5	2	ATMOS.SECONDARY CONTAIN. IR-64	R 501 N.0/5.1	58	B080	086001	B N	2 3	288A	1 4	0 0			04		N
CSP-DPIS-6	2	ATMOS.SECONDARY CONTAIN. IR-64	R 501 N.8/5.5	58	B080	086001	B N	2 3	288A	1 4	0 0			04		N
CSP-LMS-1	2	LMS FOR CSP-V-1	R 508 M.5/7.6	68	N015		B	3 3	D2400X							
CSP-LMS-2	2	LMS FOR CSP-V-2	R 508 M.5/7.4	M68	N015		B	3 3	D2400X							
CSP-LMS-3	2	LMS FOR CSP-V-3	R 481 M.6/7.6	68	N015		B	3 3	D2400X							
CSP-LMS-4	2	LMS FOR CSP-V-4	R 478 M.6/7.6	68	N015		B	3 3	D2400X							
CSP-LMS-5	2	LMS FOR CSP-V-5	R 475 M.7/8.3	68	N015		B	3 3	D2400X	1 4	0 0			35		N
CSP-LMS-6	2	LMS FOR CSP-V-6	R 480 M.5/7.7	68	N015		B	3 3	D2400X	1 4	0 0			35		N
CSP-LMS-9	2	LMS FOR CSP-V-9	R 490 M.9/5.1	68	N015		B	3 3	D2400X							
CSP-POS-10P1	2	POS FOR CSP-V-10					X	3 3								
CSP-POS-10P10	2	POS FOR CSP-V-10					X	3 3								
CSP-POS-10P11	2	POS FOR CSP-V-10			A415	248003	C	3 3	04-3869-002							
CSP-POS-10P12	2	POS FOR CSP-V-10			A415	248003	C	3 3	04-3869-002							
CSP-POS-10P13	2	POS FOR CSP-V-10			A415	248003	C	3 3	04-3869-002							
CSP-POS-10P2	2	POS FOR CSP-V-10					X	3 3								
CSP-POS-10P3	2	POS FOR CSP-V-10					X	3 3								
CSP-POS-10P4	2	POS FOR CSP-V-10		3			X	3 3								
CSP-POS-10P9	2	POS FOR CSP-V-10					X	3 3								
CSP-POS-7P1	2	POS FOR CSP-V-7			A415	248002	B	3 3	04-3869-001							
CSP-POS-7P10		POS FOR CSP-V-7				248003	X	3 3								

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2		A415		C	04-3869-002							
CSP-POS-7P11	POS FOR CSP-V-7		248003		3 3							
2		A415		C	04-3869-002							
CSP-POS-7P12	POS FOR CSP-V-7		248003		3 3							
2		A415		C	04-3869-002							
CSP-POS-7P13	POS FOR CSP-V-7		248003		3 3							
2		A415		C	04-3869-002							
CSP-POS-7P2	POS FOR CSP-V-7		248002		3 3							
2		A415		C	04-3869-001							
CSP-POS-7P3	POS FOR CSP-V-7				3 3							
2												
CSP-POS-7P4	POS FOR CSP-V-7				3 3							
2												
CSP-POS-7P9	POS FOR CSP-V-7		248003	C	3 3							
2		A415			04-3869-002							
CSP-POS-8P1	POS FOR CSP-V-8		248002	C	3 3							
2		A415			04-3869-001							
CSP-POS-8P10	POS FOR CSP-V-8		248003	C	3 3							
2		A415			04-3869-002							
CSP-POS-8P11	POS FOR CSP-V-8		248003	C	3 3							
2		A415			04-3869-002							
CSP-POS-8P12	POS FOR CSP-V-8		248003	C	3 3							
2		A415			04-3869-002							
CSP-POS-8P13	POS FOR CSP-V-8		248003	C	3 3							
2		A415			04-3869-002							
CSP-POS-8P2	POS FOR CSP-V-8		248002	C	3 3							
2		A415			04-3869-001							
CSP-POS-8P3	POS FOR CSP-V-8		248002	C	3 3							
2		A415			04-3869-001							
CSP-POS-8P4	POS FOR CSP-V-8		248002	C	3 3							
2		A415			04-3869-001							
CSP-POS-8P9	POS FOR CSP-V-8		248003	C	3 3							
2		A415			04-3869-002							
CSP-SPV-1	SOLENOID PILOT FOR CSP-V-1 IR-66	58	315004	A N	2 3	2 1	0 0			33+		N
2	R 501 N.0/5.1	A499			WJHT0316A76							
CSP-SPV-10A	SOLENOID PILOT(OPEN)CSP-V-10 IR-65	58	315004	B N	2 3	2 1	0 0			33+		N
2	R 471 N.0/3.9	A499			WJHT831654							
CSP-SPV-10B	SOL.PILOT (CLOSE) CSP-V-10 IR-65	58	315004	B N	2 3	2 1	0 0			33+		N
2	R 471 N.0/3.9	A499			WJHT831654							
CSP-SPV-2	SOLENOID PILOT FOR CSP-V-2 IR-63	58	315004	A N	2 3	2 1	0 0			33+		N
2	R 501 L.4/9.3	A499			WJHT8316A74							
CSP-SPV-3	SOLENOID PILOT FOR CSP-V-3 IR-65	58	315004	B N	2 3	2 1	0 0			33+		N
2	R 471 N.0/3.9	A499			WJHT8316A-76							
CSP-SPV-4	SOLENOID PILOT FOR CSP-V-4 - IR-64	58	315004	A N	2 3	2 1	0 0			33+		N
2	R 501 N.0/5.1	A499			CNWJHT8316A74							
CSP-SPV-5	SOLENOID PILOT FOR CSP-V-5 IR-64	58	315004	B N	2 3	2 1	0 0			33+		N
2	R 501 N.0/5.1	A499			CNWJHT831674							
CSP-SPV-6	SOLENOID PILOT FOR CSP-V-6 IR-63	58	315004	A N	2 3	2 1	0 0			33+		N
2	R 501 L.4/9.3	A499			WJHT8316A54							

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
CSP-SPV-7A	SOLENOID PILOT(CLOSE)CSP-V-7 IR-65	58	315004	B N	2 3	2 1	0 0			33+		N
2	R 471 N.0/3.9	A499			WJHT831654							
CSP-SPV-7B	SOLENOID PILOT(OPEN)CSP-V-7 IR-65	58	315004	B N	2 3	2 1	0 0			33+		N
2	P 471 N.0/3.9	A499			WJHT831654							
CSP-SPV-8A	SOL PILOT OPEN FOR CSP-V-8	58	315004	A N	2 3	2 1	0 0			33+		N
2	R 471 H.4/6.8	A499			WJHT831654							
CSP-SPV-8B	SOL PILOTCLOSE FOR CSP-V-8	58	315004	A N	2 3	2 1	0 0			33+		N
2	R 471 H.4/6.8	A499			WJHT831654							
CVB-SPV-1A1	SOL PILOT OUTBOARD CVB-V-1A	213	315012	D	3 0							
2	C 492 6 D AZ R35	A610			HT8321-A5							
CVB-SPV-1A2	SOL.PILOT OUTBOARD CVB-V-1A	213	315012	D	3 0							
2	C 492 6 D AZ R35	A610			HT8321-A5							
CVB-SPV-1B1	SOL PILOT INBOARD CVB-V-1B	213	315012	D	3 0							
2	C 492 6 D AZ R35	A610			HT8321-A5							
CVB-SPV-1B2	SOL PILOT INBOARD CVB-V-1B	213	315012	D	3 0							
2	C 492 6 D AZ R35	A610			HT8321-A5							
CVB-SPV-1C1	SOL PILOT OUTBOARD CVB-V-1C	213	315012	D	3 0							
2	C 492 27 D AZ R35	A610			HT8321-A5							
CVB-SPV-1C2	SOLENOID PILOT OUTBOARD CVB-V-1C	213	315012	D	3 0							
2	C 492 27 D AZ R35	A610			HT8321-A5							
CVB-SPV-1D1	SOL PILOT INBOARD CVB-V-1D	213	315012	D	3 0							
2	C 492 27 D AZ R35	A610			HT8321-A5							
CVB-SPV-1D2	SOL PILOT INBOARD CVB-V-1D	213	315012	D	3 0							
2	C 492 27 D AZ R35	A610			HT8321-A5							
CVB-SPV-1E1	SOL.PILOT OUTBOARD CVB-V-1E	213	315012	D	3 0							
2	C 492 90 D AZ R35	A610			HT8321-A5							
CVB-SPV-1E2	SOL.PILOT OUTBOARD CVB-V-1E	213	315012	D	3 0							
2	C 492 90 D AZ R35	A610			HT8321-A5							
CVB-SPV-1F1	SOL PILOT INBOARD CVB-V-1F	213	315012	D	3 0							
2	492 90 D AZ R35	A610			HT8321-A5							
CVB-SPV-1F2	SOL PILOT INBOARD CVB-B-1F	213	315012	D	3 0							
2	492 90 D AZ R35	A610			HT8321-A5							
CVB-SPV-1G1	SOL.PILOT OUTBOARD CVB-V-1G	213	315012	D	3 0							
2	492 153 D AZ R35	A610			HT8321-A5							
CVB-SPV-1G2	SOL PILOT OUTBOARD CVB-V-1G	213	315012	D	3 0							
2	492 153 D AZ R35	A610			HT8321-A5							
CVB-SPV-1H1	SOL PILOT INBOARD CVB-V-1H	213	315012	D	3 0							
2	492 153 D AZ R35	A610			HT8321-A5							
CVB-SPV-1H2	SOL.PILOT INBOARD CVB-V-1H	213	315012	D	3 0							
2	492 153 D AZ R35	A610			HT8321-A5							
CVB-SPV-1J1	SOL PILOT OUTBOARD CVB-V-1J	213	315012	D	3 0							
2	492 175 D AZ R35	A610			HT8321-A5							
CVB-SPV-1J2	SOL.PILOT INBOARD CVB-V-1J	213	315012	D	3 0							
2	492 175 D AZ R35	A610			HT8321-A5							
CVB-SPV-1K1	SOL PILOT INBOARD CVB-V-1K	213	315012	D	3 0							
2	492 175 D AZ R35	A610			HT8321-A5							
CVB-SPV-1K2	SOL PILOT INBOARD CVB-V-1K	213	315012	D	3 0							
2	492 175 D AZ R35	A610			HT8321-A5							
CVB-SPV-1L1	SOL PILOT OUTBOARD CVB-V-1L	213	315012	D	3 0							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	492 196 D AZ R35	A610			HT8321-A5							
CVB-SPV-1L2	SOL PILOT OUTBOARD CVB-V-1L	213	315012	D	3 0							
2	492 196 D AZ R35	A610			HT8321-A5							
CVB-SPV-1M1	SOL PILOT INBOARD CVB-V-1M	213	315012	D	3 0							
2	492 196 D AZ R35	A610			HT8321-A5							
CVB-SPV-1M2	SOL PILOT INBOARD CVB-V-1M	213	315012	D	3 0							
2	492 196 D AZ R35	A610			HT8321-A5							
CVB-SPV-1N1	SOL PILOT OUTBOARD CVB-V-1N	213		D	3 0							
2	C	A610			HT8321-A5							
CVB-SPV-1N2	SOL PILOT OUTBOARD CVB-V-1N	213	315012	D	3 0							
2	492 260 D AZ R35	A610			HT8321-A5							
CVB-SPV-1P1	SOL PILOT INBOARD CVB-V-1P	213	315012	D	3 0							
2	492 260 D AZ R35	A610			HT8321-A5							
CVB-SPV-1P2	SOL PILOT INBOARD CVB-V-1P	213	315012	D	3 0							
2	492 260 D AZ R35	A610			HT8321-A5							
CVB-SPV-1Q1	SOL PILOT OUTBOARD CVB-V-1Q	58	315012	D	3 0							
2	492 344 D AZ R35	A610			HT8321-A5							
CVB-SPV-1Q2	SOL.PILOT OUTBOARD CVB-V-1H	213		D	3 0							
2	C	A610			HT8321-A5							
CVB-SPV-1R1	SOL PILOT INBOARD CVB-V-1R	213	315012	D	3 0							
2	492 344 D AZ R35	A610			HT8321-A5							
CVB-SPV-1R2	SOL PILOT IBOARD CVB-V-1R	213	315012	D	3 0							
2	492 344 D AZ R35	A610			HT8321-A5							
CVB-SPV-1S1	SOL.PILOT INBOARD CVB-V-1S	213	315012	D	3 0							
2	C 492 281 D AZ R35	A610			HT8321-A5							
CVB-SPV-1S2	SOL.PILOT OUTBOARD CVB-V-1S	213	315012	D	3 0							
2	C 492 281 D AZ R35	A610			HT8321-A5							
CVB-SPV-1T1	SOL.PILOT INBOARD CVB-V-1T	213	315012	D	3 0							
2	C 492 281 D AZ R35	A610			HT8321-A5							
CVB-SPV-1T2	SOL.PILOT INBOARD CVB-V-1T	213	315012	D	3 0							
2	C 492 281 D AZ R35	A610			HT8321-A5							
DCW-H-1C	DG-1C JACKET WTR IMMERSION HTR			N	4 0							
2	D 443 P.8/5.2	S345			8538 SGG-11							
DCW-HC-1A1	DG1A1 JACKET WTR IMMERSION HTR	53	166001	N N	4 0						F	
2	D 441 P.1/6.0	S345			BCW42							
DCW-HC-1A2	DG1A2 JACKET WTR IMMERSION HTR	53	166001	N N	4 0						F	
2	D 441 P.8/6.0	S345			BCW42							
DCW-HC-1B1	DG1B1 JACKET WTR IMMERSION HTR	53	166001	N N	4 0						F	
2	D 441 P.8/8.0	S345			BCW42							
DCW-HC-1B2	DG1B2 JACKET WTR IMMERSION HTR	53	166001	N N	4 0						F	
2	D 441 R.8/8.0	S345			BCW42							
DCW-LS-10A1	DCW-TK-1A1 EXPAN TK LOW LEVEL ALRM	53	207018		4 0							
2	D 441 P.6/6.3	M498			EL150-KT-T							
DCW-LS-10A2	DCW-TK-1A2 EXPAN TK LOW LEVEL ALRM	53	207018		4 0							
2	D 441 R.6/6.3	M498			EL150-KT-T							
DCW-LS-10B1	DCW-TK-1B1 EXPAN TK LOW LEVEL ALRM	53	207018		4 0							
2	D 441 R.6/8.0	M498			EL150-KT-T							
DCW-LS-10B2	DCW-TK-1B2 EXPAN TK LOW LEVEL ALRM	53	207018		4 0							
2	D 441 R.6/8.0	M498			EL150-KT-T							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT	MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TH	HL
DCW-LS-15	DCW-TK-1C EXPAN TK LOW LEVEL ALRM	02				4 0							
2	D 450 P.8/5.1												
DCW-TS-11A1	DG-1A1 JACKET WTR TEMP HIGH	53		355011	N N	4 0						F	
2	D 445 P.3/6.2		S345			BCW42							
DCW-TS-11A2	DG-1A2 JACKET WTR TEMP HIGH	53		355011	N N	4 0						F	
2	D 445 R.5/.62		S345			BCW42							
DCW-TS-11B1	DG-1B1 JACKET WTR TEMP HIGH	53		355011	N N	4 0						F	
2	D 445 P.3/8.2		S345			BCW42							
DCW-TS-11B2	DG-1B2 JACKET WTR TEMP HIGH	53		355011	N N	4 0						F	
2	D 445 R.5/8.2		S345			BCW42							
DCW-TS-12A1	DG-1A1 JACKET WTR TEMP LOW	53		355011	N N	4 0						F	
2	D 445 P.3/6.2		S345			BCW43							
DCW-TS-12A2	DG-1A2 JACKET WTR TEMP LOW	53		355011	N N	4 0						F	
2	D 445 R.5/6.2		S345			BCW43							
DCW-TS-12B1	DG-1B1 JACKET WTR TEMP LOW	53		355011	N N	4 0						F	
2	D 445 P.3/8.2		S345			BCW43							
DCW-TS-12B2	DG-1B2 JACKET WTR TEMP LOW	53		355011	N N	4 0						F	
2	D 445 R.8/8.0		S345			BCW43							
DCW-TS-4	HPCS DIESEL COOLING TO DCW-TCV-2	02E22		355005	R D	4 0							
2	D 441 P4/5		F081			20800							
DCW-TS-43B1	DG-1B1 LOW JACKET WTR TEMP SW ALRM	53		355011		4 0							
2	D 441 Q/6.6		S345			9025-BCW-43							
DCW-TS-43B2	DG-1B2 LOW JACKET WTR TEMP SW ALRM			355011		4 0							
2	D 441 Q/8.4		S345			9025-BCW-43							
DCW-TS-5	HPCS DIESEL COOLING TO DCW-TCV-2	02E22		355005	R D	4 0							
2	D 441 P4/5		F081			20800							
DCW-TS-6	HPCS DIESEL COOLING TO DCW-TCV-2	02E22		355005	R D	4 0							
2	D 441 P4/5		F081			20800							
DCW-TS-8	HPCS DIESEL COOLING TO DCW-TCV-2	02E22		355011	R D	4 0							
2	D 441 P4/5		S345			9025BCW-29							
DCW-TS-8B1	DG-1B1 HI COOLANT TEMP SW-ALARM			355011		4 0							
2	D 441 Q/6.6		S345			9025-BCW-42							
DCW-TS-8B2	DG-1B2 HI COOLANT TEMP SW-ALARM			355011		4 0							
2	D 441 Q/8.4		S345			9025-BCW-42							
DEA-DPS-11	DIFF. PRESS. ACROSS DEA-FN-11	216		090003		4 3							
2	D 455 P.1/6.6		D295			1627-1							
DEA-DPS-12	DIFF. PRESS. ACROSS DEA-FN-12	216		090004		4 3							
2	D 448 P.8/7.3		S254			7PS11DW							
DEA-DPS-21	DIFF. PRESS ACROSS DEA-FN-21	216		090003		4 3							
2	D 455 P.1/8.4		D295			1627-1							
DEA-DPS-22	DIFF. PRESS. ACROSS DEA-FN-22	216				4 3							
2	D 446 Q.8/9.2		S254			7PS11DW							
DEA-DPS-31	DIFF. PRESS. ACROSS DEA-FN-31	216		090003		4 3							
2	D 455 P.1/3.8		D295			1627-1							
DEA-DPS-32	DIFF. PRESS. ACROSS DEA-FN-32	216		090004		4 3							
2	D 446 Q.5/4.1		S254			7PS11DW							
"	EXH. FAN COMPOSITE					4 3							
1													
DEA-M-11	50HP/66A MOTOR FOR DEA-FN-11	22A		213044	B B	4 3						F	

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EQUIPMENT NO.	LV	DESCRIPTION	PLANT LOCATION	CONTRACT	MFG	QID	QS	USE TEST	MFG MODEL NO.	ANL	F/O	C	FREQ	TM	HL
	2		D 455 P.3/7.0		J127				48-26-5-1170AP						
DEA-M-12	2	.50HP/1.0A MOTOR FOR DEA-FN-12	D 453 Q.6/7.3	28	W120	213061	B B	4 3	74D25005					F	
DEA-M-13	2	.50HP/1.1A MOTOR FOR DEA-FN-13	D 447 P.7/3.4	28	W120	213062	B B	4 3	74D25007					F	
DEA-M-21	2	50HP/66A MOTOR FOR DEA-FN-21	D 455 P.1/3.4	22A	J127	213044	B B	4 3	48-26-5-1170AP					F	
DEA-M-22	2	.50HP/1A MTR DRIV DEA-FN-22	D 453 Q.6/9.3	28	W120	213061	B B	4 3	74D25005					F	
DEA-M-23	2	.50HP/1.1A MOTOR FOR DEA-FN-23	D 447 Q.4/3.4	28	W120	213062	B B	4 3	74D25007					F	
DEA-M-31	2	50HP/66A MOTOR FOR DEA-FN-31	D 455 P.3/4.0	22A	J127	213044	B B	4 3	48-26-5-1170AP					F	
DEA-M-32	2	.50HP/1.0A MOTOR FOR DEA-FN-32	D 450 Q.8/3.9	28	W120	213060	B B	4 3	74B25006						
DEA-M-33	2	.50HP/1.1A MOTOR FOR DEA-FN-33	D 447 R.3/3.4	28	W120	213062	B B	4 3	74D25007					F	
DEA-M-51	2	1HP/2A MTR FOR DEA-FN-51	D 455 P.1/3.8	22A	W120	213059	B B	4 3	18-14-A50					F	
DEA-M-52	2	1HP/1.7A MOTOR FOR DEA-NF-52	D 467 M.0/9.8	22A	R165	213050	B B	4 3	3YF277146A2B					F	
DG-EXC-A	2	EXCITER FOR DIESEL GENERATOR A	D 441 Q.4/7.0	53	P292	127002	N N	4 0	72-04500-100					F	
DG-EXC-B	2	EXCITER FOR DIESEL GENERATOR B	D 441 Q.4/9.0	53	P292	127002	N N	4 0	72-04500-100					F	
DG-EXC-1C	2	EXCITER FOR DIESEL GENERATOR C	D 441 P.5/4.4		G080			4 0	357930NA15961						
DG-GEN-A	2	4160 DIESEL GEN FOR ENG. A1 & A2	D 441 Q.6/6.0	53	E299	162002	N N	4 0	L-1101					F	
DG-GEN-B	2	4160 DIESEL GEN FOR ENG B1 & B2	D 441 Q6/8	53	P292	162002	N N	4 0	L11011						
DG-GEN-1C	2	HPCS GEN 94A FLD/494A ARM/356 OKVA	D 441 Q.8/5.0	02E22	G080	162001	R D	4 0	P.O. A-990						
DG-PS-S22A1	2	HIGH CRANK CASE PRESS						4 0							
DG-PS-S22A2	2	HIGH CRANK CASE PRESS	D 441 Q.5/8.0	53	E147	256039	Z	4 0	8362040					F	
DG-PS-S221	2	HIGH CRANK CASE PRESS						4 0							
DG-PS-S222	2	HIGH CRANK CASE PRESS	D 441 Q.5/8.0	53	E147	256039	Z	4 0	8362040					F	
DG-PS-S47A1	2	LOW STARTING AIR PRESS						4 0							
DG-PS-S47A2	2	LOW STARTING AIR PRESS						4 0							
DG-PS-S471	2	LOW STARTING AIR PRESS						4 0							
DG-PS-S472	2	LOW STARTING AIR PRESS						4 0							

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
DG-PV-L02A2		53	264001	Z	4 0						F	
2	D 441 Q.1/9.0	A499			8321A2							
DG-SE-G3/DG1	GENERATOR SPEED SENSING	53			4 0							
2	D 441 P.2/7.0	E315			5A-1540							
DG-SE-G3/DG2	GENERATOR SPEED SENSING	53			4 0							
2	D 441 Q.1/9.0	E315			5A-1540							
DG-SPV-L01A1	SOL STARTER AIR PILOT VALVE	53			4 0							
2	D 441 Q.5/6.1	A499			8321A2							
DG-SPV-L01A2	SOL STARTER AIR PILOT VALVE DG1	53	315001	Z	4 0						F	
2	D 441 Q5/8	A499			8321A2							
DG-SPV-L011	SOL STARTER AIR PILOT VALVE	53			4 0							
2	D 441 Q.5/6.1	A499			8321A2							
DG-SPV-L012	SOL. STARTER AIR PILOT VALVE	53	315001	Z	4 0						F	
2	D 441 Q5/8	A499			8321A2							
DG-SPV-L02A1	SOL. VALVE	53	315001	Z	4 0						F	
2	D 441 P2/7	A499			8321A2							
DG-SPV-L02A2	SOL STARTER AIR PILOT VALVE	53			4 0							
2	D 441 Q.1/9.0	A499			8321A2							
DG-SPV-L021	SOL. STARTER AIR PILOT VALVE	53	315001	Z	4 0						F	
2	D 441 Q5/6.1	A499			8321A2							
DG-SPV-L022	SOL STARTER AIR PILOT VALVE	53	315001	Z	4 0						F	
2	D 441 Q5/8	A499			8321A2							
DG-SPV-L04A/DG2	RAW WATER HEAT EXCH SOL VALVE DG2				4 0							
2	D											
DG-SPV-L04A1	SOLENOID	53	315001	Z	4 0						F	
2	D 441 P2/7	A499			8321A4							
DG-SPV-L041	RAW WATER HX SOLENOID	53			4 0							
2	D 441 P2/7	A499			8321A4							
DG-SPV-L05A2	SHUTDOWN SOLENOID	53			4 0							
2	D 441 P2/7	A499			8321A4							
DG-SPV-L051	SHUTDOWN SOLENOID	53			4 0							
2	D 441 P2/7	A499			8321A4							
DG-SPV-L051A	SHUTDOWN SOLENOID	53			4 0							
2	D 441 P2/7	A499			8321A4							
DG-SPV-L052	SHUTDOWN SOLENOID	53			4 0							
2	D 441 P2/7	A499			8321A4							
DG-SV-L04A/DG2	RAW WATER HEAT EXCH	53			4 0							
2	D 441 Q.5/8.0	A499			8321A4							
DG-VI-CG11		59	371001	Z	4 0							
2	W 501 J/14.1	G080			163C1519P089							
DLO-LS-1A1	LUBE OIL SUMP 1A1 LOW LEVEL ALARM	53	207010	N N	0 0						F	
2	D 441 P.4/6.0	S407			EL-150-K1-T							
DLO-LS-1A2	LUBE OIL SUMP 1A2 LOW LEVEL ALARM	53	207010	N N	0 0						F	
2	D 441 R.8/6.0	S407			EL-150-K1-T							
DLO-LS-1B1	LUBE OIL SUMP 1B1 LOW LEVEL ALARM	53	207010	N N	0 0						F	
2	D 441 P.4/8.0	S407			EL-150-K1-T							
DLO-LS-1B2	LUBE OIL SUMP 1B2 LOW LEVEL ALARM	53	207010	N N	0 0						F	
2	D 441 R.8/8.0	S407			EL-150-K1-T							
DLO-LS-17	HPCS DG LUBE OIL SUMP LEVEL SWITCH				0 0							

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	D 441 Q.0/5.1											
DLO-LS-29A1	LUBE OIL LEVEL LOW ALARM	53			0 0							
2	D 441 Q.0/6.1	M498			EL150-K1-T							
DLO-LS-29A2	LUBE OIL LEVEL LOW ALARM	53			0 0							
2	D 441 R.0/8.1	M498			EL150-K1-T							
DLO-LS-291	LUBE OIL LEVEL LOW ALARM	53			0 0							
2	D 441 Q.0/6.1	M498			EL150-K1-T							
DLO-LS-292	LUBE OIL LEVEL LOW ALARM	53			0 0							
2	D 441 R.0/8.1	M498			EL150-K1-T							
DLO-M-2A1	0.75HP/6.1A MOTOR FOR DLO-P-2A1	53	213004	N N	4 0						F	
2	D 441 Q.0/6.3	G080			5BCC56K063A							
DLO-M-2A2	0.75HP/6.1A MOTOR FOR DLO-P-2A2	53	213004	N N	4 0						F	
2	D 441 R.2/6.3	G080			5BCC56K063A							
DLO-M-2B1	0.75HP/6.1A MOTOR FOR DLO-P-2B1	53	213004	N N	4 0						F	
2	D 441 Q.0/8.2	G080			5BCC56K063A							
DLO-M-2B2	0.75HP/6.1A MOTOR FOR DLO-P-2B2	53	213004	N N	4 0						F	
2	D 441 R.2/8.2	G080			5BCC56K063A							
DLO-M-3A1	1HP/2.32A MOTOR FOR DLO-P-3A1	53	213003	N N	4 0						F	
2	D 441 Q.0/6.3	D092			T5717-A							
DLO-M-3A2	1HP/2.32A MOTOR FOR DLO-P-3A2	53	213003	N N	4 0						F	
2	D 441 R.2/6.2	D092			T5717-A							
DLO-M-3B1	1HP/2.32A MOTOR FOR DLO-P-3B1	53	213003	N N	4 0						F	
2	D 441 Q.0/6.2	D092			T5717-A							
DLO-M-3B2	1HP/2.32A MOTOR FOR DLO-P-3B2	53	213003	N N	4 0						F	
2	D 441 R.2/8.2	D092			T5717-A							
DLO-M-6	?HP/?A MOTOR DRIVER DLO-P-6	02E22	213002	R D	4 0							
2	D 441 Q2/5	D092			T2724-Y1/145T							
DLO-M-7	MOTOR DRIVER DLO-P-7	53		N N	4 0							
2												
DLO-M-8	MOTOR DRIVER DLO-P-8	53		N N	4 0							
2												
DLO-M-9	MOTOR DRIVER DLO-P-9	53		N N	4 0							
2												
DLO-PS-1A1	CRANKING MOTOR DISCONNECT	53	256016	N N	4 0						F	
2	D 445 P.3/6.2	S345			ACW21							
DLO-PS-1A2	CRANKING MOTOR DISCONNECT	53	256016	N N	4 0						F	
2	D 445 R.8/6.2	S345			ACW21							
DLO-PS-1B1	CRANKING MOTOR DISCONNECT	53	256016	N N	4 0						F	
2	D 445 P.3/8.2	S345			ACW21							
DLO-PS-1B2	CRANKING MOTOR DISCONNECT	53	256016	N N	4 0						F	
2	D 445 R.5/8.0	S345			ACW21							
DLO-PS-19A1	LOW OIL PRESSURE SHUTDOWN-17PSI	53			4 0							
2	D 441 Q.0/6.1	S345			9012-ACW-2							
DLO-PS-19A2	LOW OIL PRESSURE SHUTDOWN-17PSI	53			4 0							
2	D 441 R.0/8.1	S345			9012-ACW-2							
DLO-PS-191	LOW OIL PRESSURE SHUTDOWN-17PSI	53			4 0							
2	D	S345			9012-ACW-21							
DLO-PS-192	LOW OIL PRESSURE SHUTDOWN-17PSI	53			4 0							
2	D 441 R.0/8.1	S345			9012-ACW-21							

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EQUIPMENT NO.	LV	DESCRIPTION	PLANT LOCATION	CONTRACT	MFG	QID	QS	USE	MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
DLO-PS-2A1	2	DLO-F-3A1 OUTLET LOW OIL PRESS ALM	D 445 P.3/6.2	53	S345	256016	N N	4 0	ACW21						F	
DLO-PS-2A2	2	DLO-F-3A2 OUTLET LOW OIL PRESS ALM	D 445 R.5/6.2	53	S345	256016	N N	4 0	ACW21						F	
DLO-PS-2B1	2	DLO-F-3B1 OUTLET LOW OIL PRESS ALM	D 445 P.3/8.2	53	S345	256016	N N	4 0	ACN21						F	
DLO-PS-2B2	2	DLO-F-3B2 OUTLET LOW OIL PRESS ALM	D 445 R.5/8.0	53	S345	256016	N N	4 0	ACW21						F	
DLO-PS-20	2	INLET HPCS TURBOCHARGER	D 441 P4/5	02E22	B069	256005	R D	4 0	E1HM15V							
DLO-PS-22	2	DLO-P-8 DISCHARGE	D 441 P4/5	02E22	B069	256019	R D	4 0	E1HM90V							
DLO-PS-24	2	DLO-P-8 DISCHARGE	D 441 P4/5	02E22	B069	256019	R D	4 0	E1HM90V							
DLO-PS-3A1	2	DLO-F-3A1 LOW OIL PRESS SHUTDOWN	D 445 P.3/6.2	53	S345	256016	N N	4 0	ACW21						F	
DLO-PS-3A2	2	DLO-F-3A2 LOW OIL PRESS SHUTDOWN	D 445 R.5/6.2	53	S345	256016	N N	4 0	ACW21						F	
DLO-PS-3B1	2	DLO-F-3B1 LOW OIL PRESS SHUTDOWN	D 445 P.3/8.2	53	S345	256016	N N	4 0	ACW21						F	
DLO-PS-3B2	2	DLO-F-3B2 LOW OIL PRESS SHUTDOWN	D 445 R.5/8.0	53	S345	256016	N N	4 0	ACW21						F	
DLO-PS-30	2	DLO-P-8 DISCHARGE	D 441 P4/5	02E22	B069	256006	R D	4 0	E1HM90							
DLO-PS-4A1	2	DLO-F-3A1 CIRC PUMP SHUTOFF	D 445 P.3/6.2	53	S345	256016	N N	4 0	ACW21						F	
DLO-PS-4A2	2	DLO-F-3A2 CIRC PUMP SHUTOFF	D 445 R.5/6.2	53	S345	256016	N N	4 0	ACW21						F	
DLO-PS-4B1	2	DLO-F-3B1 CIRC PUMP SHUTOFF	D 445 P.3/8.2	53	S345	256016	N N	4 0	ACW21						F	
DLO-PS-4B2	2	DLO-F-3B2 CIRC PUMP SHUTOFF	D 445 R.5/8.0	53	S345	256016	N N	4 0.	ACW21						F	
DLO-PS-45A1	2	CONTROL OF DLO-P-3A2	D 441 R.0/6.1	53	S345			4 0	9012-ACW-21							
DLO-PS-45A2	2	CONTROL OF DLO-P-3B2						4 0								
DLO-PS-451	2	CONTROL OF PUMP DLO-P-3A1	D 441 Q.0/6.1	53	S345			4 0	9012-ACW-21							
DLO-PS-452	2	CONTROL OF PUMP DLO-P-3B1	D 441 Q.0/8.1	53	S345			4 0	9012-ACW-21							
DLO-PS-56A1	2	PUMP FAIL ALARM FOR DLO-P-2A2/3A2	D 441 R.0/8.1	53	S345			4 0	9012-ACW-21							
DLO-PS-56A2	2	PUMP FAIL ALARM FOR DLO-P-2B2/3B2	D 441 R.0/8.1	53	S345			4 0	9012-ACW-21							
DLO-PS-56B1	2	PUMP FAIL ALARM FOR DLO-P-2A1/3A1	D 441 0/6.6	53	S345	256016		4 0	9012-ACW-21							
DLO-PS-56B2	2	PUMP FAIL ALARM FOR DLC-P-2B1/3B1	D 441 0/6.6	53	S345	256016		4 0	9012-ACW-21							
DLO-TS-26A1		LOW OIL TEMP ALARM-115F		53				4 0								

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	D 441 Q.0/6.1	S345			9025-BCW-43							
DLO-TS-26A2	LOW OIL TEMP ALARM-115F	53			4 0							
2	D 441 R.0/8.1	S345			9025-BCW-43							
DLO-TS-261	LOW OIL TEMP ALARM-115F	53			4 0							
2	D 441 Q.0/6.1	S345			9025-BCW-43							
DLO-TS-262	LOW OIL TEMP ALARM-115F	53			4 0							
2	D 441 R.0/8.1	S345			9025-BCW-43							
DLO-TS-35A1	DLO-HX-2A1 INLET OIL TEMP	53			4 0							
2	D 447 P.5/6.2	S345			9025-BCW-45							
DLO-TS-35A2	DLO-HX-2A2 INLET OIL TEMP	53	355011		4 0						F	
2	D 447 R.8/6.0	S345			BCW45							
DLO-TS-35B1	DLO-HX-2B2 INLET OIL TEMP	53			4 0							
2	D 447 P.5/8.0	S345			9025-BCW-45							
DLO-TS-35B2	DLO-HX-2B2 INLET OIL TEMP	53			4 0							
2	R 447 R.8/7.8	S345			9025-BCW-45							
DLO-TS-7A1	HIGH OIL TEMP ALARM-240F	53			4 0							
2	D 441 P.0/6.1	S345			9025-BCW-45							
DLO-TS-7A2	HIGH OIL TEMP ALARM-240F	53			4 0							
2	D 441 R.0/8.1	S345			9025-BCW-45							
DLO-TS-71	HIGH OIL TEMP ALARM-240F	53			4 0							
2	D 441 Q.0/6.1	S345			9025-BLW-45							
DLO-TS-72	HIGH OIL TEMP ALARM-240F	53			4 0							
2	D 441 R.0/8.1	S345			9025-BLW-45							
DMA-DPS-11	DIFF. PRESS. ACROSS DMA-FN-11	216	090003		4 3							
2	D 441 R.0/7.0	D295			1627-1							
DMA-DPS-12	DIFF. PRESS. ACROSS DMA-FN-12	216	090003		4 3							
2	D 441 P.0/7.0	D295			1627-1							
DMA-DPS-21	DIFF. PRESS. ACROSS DMA-FN-21	216	090003		4 3							
2	D 441 Q.1/8.4	D295			1627-1							
DMA-DPS-22	DIFF. PRESS ACROSS DMA-FN-22	216	090003		4 3							
2	D 441 P.0/9.0	D295			1627-1							
DMA-DPS-31	DIFF. PRESS. ACROSS DMA-FN-31	216	090003		4 3							
2	D 441 Q.1/4.6	D295			1627-1							
DMA-DPS-32	DIFF. PRESS. ACROSS DMA-FN-32	216	090003		4 3							
2	D 441 P.0/4.1	D295			1627-1							
DMA-DPS-52	DIFF. PRESS. ACROSS DMA-FN-51	216	090005	R D	4 3						F	
2	D 446 R.4/9.4	D295			CN3002C							
DMA-EHC-12	HEAT.COIL DISCH.DMA-FN-12 35K.W.	216	109002	B D	4 3	2 1	0 0			33	F	N
2	D 455 P.5/7.0	B392			S097452327							
DMA-EHC-22	HEAT.COIL DISCH.DMA-FN-22 35KW	216	109002	B D	4 3	2 1	0 0			33	F	N
2	D 460 P.9/8.4	B392			S097452327							
DMA-EHC-32	HEAT.COIL DISCH.DMA-FN-32 35KW	216	109002	B D	4 3	2 1	0 0			33	F	N
2	D 455 P.8/4.2	B392			S097452327							
DMA-EHC-51	HEAT.COIL INTAKE DMA-AH-51 30KW	216	109003	R D	4 3						F	
2	D 441 R.1/9.4	B392			X5977321261							
DMA-M-11	30HP/39A MOTOR FOR DMA-FN-11	67	213053	A B	4 3						F	
2	D 455 Q.5/7.0	W120			TBFC							
DMA-M-12	15HP/20A MOTOR FOR DMA-FN-12	67	213058	A B	4 3						F	
2	D 455 P.5/7.0	W120			TEFC							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
DMA-M-21	30HP/39A MOTOR FOR DMA-FN-21	67	213053	B B	4 3						F	
2	D 455 Q.5/9.0	W120			TBFC							
DMA-M-22	15HP/20A MOTOR FOR DMA-FN-22	67	213058	B B	4 3						F	
2	D 455 P.5/9.0	W120			TEFC							
DMA-M-31	30HP/?A MTR DRIVER DMA-FN-31	67	213053	B B	4 3						F	
2	D 455 Q.5/4.2	W120			TBFC							
DMA-M-32	15HP/20A MOTOR FOR DMA-FN-32	67	213058	B B	4 3						F	
2	D 455 P.5/4.2	W120			TEFC							
DMA-M-51	5HP/?A MTR DRIVER DMA-FN-51	67	213025	B B	4 3						F	
2	D 441 R.1/9.4	W120			SBFC							
DMA-MO-11/1	MOTOR OPERATOR DMA-AD-11/1	67	221003	B N	4 3						F	
2	D 455 Q.5/7.0	H260			M445A1000							
DMA-MO-11/2	MOTOR OPER FOR DMA-AD-11/2	67	221068	B N	4 3						F	
2	D 455 Q.5/7.0	P129			U80JCA-2							
DMA-MO-12/1	MOTOR OPERATOR DMA-AD-12/1	67	221003	B N	4 3						F	
2	D 455 P.5/7.0	H260			M445A1000							
DMA-MO-12/2	MOTOR OPER FOR DMA-AD-12/2	67	221068	B N	4 3						F	
2	D 455 P.5/7.0	P129			Y80JCA-2							
DMA-MO-21/1	MOTOR OPERATOR DMA-AD-21/1	67	221003	B N							F	
2	D 455 Q.5/9.0	H260			M445A1000							
DMA-MO-21/2	MOTOR OPER FOR DMA-AD-21/2	67	221068	B N	4 3						F	
2	D 455 Q.5/9.0	P129			Y80JCA-2							
DMA-MO-22/1	MOTOR OPERATOR DMA-AD-22/1	67	221003	B N	4 3						F	
2	D 455 P.5/9.0	H260			M445A1000							
DMA-MO-22/2	MOTOR OPER FOR DMA-AD-22/2	67	221068	B N	4 3						D	
2	D 455 P.5/9.0	P129			U80JCA-2							
DMA-MO-31/1	MOTOR OPERATOR DMA-AD-31/1	67	221003	B N	4 3						D	
2	D 455 Q.6/4.0	H260			M445A100D							
DMA-MO-31/2	MOTOR OPER FOR CMA-AD-31/2	67	221068	B N	4 3						D	
2	D 455 Q.6/3.9	P129			U80JCA-2							
DMA-MO-32/1	MOTOR OPERATOR DMA-AD-32/1	67	221003	B N	4 3						D	
2	D 455 P.5/4.2	H260			M445A1000							
DMA-MO-32/2	MOTOR OPER FOR DMA-AD-32/2	67	221068	B N	4 3						D	
2	D 455 P.5/4.2	P129			U80JCA-2							
DMA-MO-51	MOTOR OPERATOR DMA-AD-51	67	221068	B N	4 3						D	
2	D 441 R.1/9.5	P135			U80JCA-2							
DMA-MO-53	MOTOR OPERATOR DMA-AD-53	216	221001	R D	4 3						D	
2	D 465 K.1/9.5	B066			MA418							
DMA-TE-11/1	TEMP.ELEMENT INTAKE DMA-AH-11	216	339007	R D	4 3						D	
2	D 465 Q.6/7.3	W108			601-1D-A-6-C-8-2-1							
DMA-TE-11/2	TEMP.ELEMENT DISCH. DMA-AH-11	216	339007	R D	4 3						D	
2	D 465 Q.6/6.8	W108			601-1D-A-6-C-8-2-1							
DMA-TE-12/1	TEMP.ELEMENT INTAKE DMA-AH-12	216	339007	R D	4 3						D	
2	D 462 P.7/7.3	W108			601-1D-A-6-C-8-2-1							
DMA-TE-12/2	TEMP.ELEMENT DISCH. DMA-AH-12	216	339007	R D	4 3						D	
2	D 460 P.6/6.8	W108			601-1D-A-6-C-8-2-1							
DMA-TE-21/1	TEMP.ELEMENT INTAKE DMA-AH-21	216	339007	R D	4 3						D	
2	D 462 Q.6/9.3	W108			601-1D-A-6-C-8-2-1							
DMA-TE-21/2	TEMP.ELEMENT DISCH. DMA-AH-21	216	339007	R D	4 3						D	

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE	TEST	ANL	F/O	C	FREQ	TM	HL	MFG MODEL NO.
2	D 460 Q.6/8.6	W108											601-1D-A-6-C-8-2-1
DMA-TE-22/1	TEMP.ELEMENT INTAKE DMA-AH-22	216	339007	R D	4	3					D		
2	D 462 P.7/9.3	W108											601-1D-A-6-C-8-2-1
DMA-TE-22/2	TEMP.ELEMENT DISCH. DMA-AH-22	216	339007	R D	4	3					D		
2	D 460 P.6/8.6	W108											601-1D-A-6-C-8-2-1
DMA-TE-31/1	TEMP.ELEMENT INTAKE DMA-AH-31	216	339007	R D	4	3					D		
2	D 469 Q.5/4.0	W108											601-1D-A-6-C-8-2-1
DMA-TE-31/2	TEMP.ELEMENT DISCH. DMA-AH-31	216	339007	R D	4	3					D		
2	D 460 Q.6/4.4	W108											601-1D-A-6-C-8-2-1
DMA-TE-32/1	TEMP.ELEMENT INTAKE DMA-AH-32	216	339007	R D	4	3					D		
2	D 469 P.5/3.9	W108											601-1D-A-6-C-8-2-1
DMA-TE-32/2	DMA-FN-32 DISCH. TO DMA-EHC-32 LOC	216	339007	R D	4	3					D		
2	D 460 P.5/4.4	W108											601-1D-A-6-C-8-2-1
DO-DPS-34A1		53			4	0							
2	D 441 Q.1/7.1	S345											9012-AEW-2
DO-DPS-34A2	DIFF.FUEL PRESS	53			4	0							
2	D 441 Q.0/9.0	S345											9012-AEW-2
DO-DPS-341	DIFF.FUEL PRESS	53			4	0							
2	D 441 P.1/7.1	S345											9012-AEW-2
DO-DPS-342	DIFF.FUEL PRESS	53			4	0							
2	D 441 Q.0/9.0	S345											9012-AEW-2
DO-M-1A	1.5HP/2.1A MOTOR FOR DO-P-1A	35A	213063	D D	4	0					F		
2	D 437 P.3/3.6	W120											7504078.5
DO-M-1B	1.5HP/2.1A MOTOR FOR DO-P-1B	35A	213063	D	4	0					F		
2	D 437 Q.2/3.6	W120											7504078.5
DO-M-2	1.5HP/2.1A MOTOR FOR DO-P-2	02	213063	D	4	0					F		
2	D 437 R.0/3.6	W120											75040785
DO-M-3A1	?HP/?A MOTOR DRIVER DO-P-3A1	53	213001	N N	4	0							
2	D 448 Q.0/6.3	G102											6-213S14-01
DO-M-3A2	?HP/?A MOTOR DRIVER DO-P-3A2	53	213001	N N	4	0							
2	D 448 R.2/6.3	G102											6-213S14-01
DO-M-3B1	?HP/?A MOTOR DRIVER DO-P-3B1	53	213001	N N	4	0							
2	D 448 Q.0/8.2	G102											6-213514-01
DO-M-3B2	?HP/?A MOTOR DRIVER DO-P-3B2	53	213001	N N	4	0							
2	D 448 R.2/8.2	G102											6-213514-01
DO-M-6	?HP/?A MOTOR DRIVER DO-P-6	02E22	213019	R D	4	0							
2	D 441 P6/5	R165											502674-GX/456H
DO-P-1A+	DIESEL OIL TRANSFER PUMP 1A				4	0							
1													
DO-P-1B+	DIESEL OIL TRANSFER PUMP 1B				4	0							
1													
DO-P-2+	DIESEL OIL TRANSFER PUMP 2				4	0							
1													
DO-PS-1	DIESEL OIL PUMP DO-P-6 DISCH. LOC-	02E22	256005	R D	0	0							
2	D 441 P6/5	B069											E1HM15V
DO-PS-2	DIESEL OIL PUMP DO-P-5 DISCH. LOC-	02E22	256005	R D	0	0							
2	D 441 P6/5	B069											E1HM15V
DO-PS-3	DIESEL OIL TO HPCS DIESEL GEN. ENG	02E22	256005	R D	0	0							
2	D 441 P6/5	B069											E1HM15V

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
DO-PS-4A1	DUPLEX FILTER DO-F-1A1 OUTLET PRES	53	256016		4 0						F	
2	D 441 P4/6	S345			9012ACW-21							
DO-PS-4A2	DUPLEX FILTER DO-F-1A2	53	256016	N N	0 0						F	
2	D 444 R.8/6.0	S345			ACW21							
DO-PS-4B1	DUPLEX FILTER DO-F-1B1 OUTLET PRES	53	256016		4 0						F	
2	D 441 P4/8	S345			9012ACW-21							
DO-PS-4B2	DUPLEX FILTER DO-F-1B2 OUTLET PRES	53	256016	N N	4 0						F	
2	D 445 R.5/8.2	S345			ACW21							
DO-PS-6A1	LOW OIL PRESSURE	53			0 0							
2	D 441 Q.1/7.1	S345			9012-ACW-2							
DO-PS-6A2	LOW OIL PRESS	53			0 0							
2	D 441 Q.0/9.0	S345			9012-ACW-2							
DO-PS-61	LOW OIL PRESSURE	53			0 0							
2	D 441 Q.1/7.1	S345			9012-ACW-2							
DO-PS-62	LOW OIL PRESS	53			0 0							
2	D 441 Q.0/9.0	S345			9012-ACW-2							
DOA-MO-52	MOTOR OPERATOR FOR DOA-AO-52	216	221001	R D	4 3						D	
2	D 460 R.4/9.5	B066			MA-418							
DOA-TS-51	OUTSIDE AIR TO DMA-AH-51	216	355008	R D	4 3						D	
2	D 460 R.4/9.5	P129			A19EAE-2							
DSA-B3-BT/DG1		53			4 0							
2	D 441 P.0/7.0				2XH19							
DSA-B3-BT/DG2		53			4 0							
2	D 441 Q.0/9.1				2XH19							
DSA-M-1A1	15HP/21A MOTOR FOR DSA-C-1A1	53	213006	N N	4 0							
2	D 444 M512 E6	G080			5K254AL205							
DSA-M-1A2	15HP/?A MOTOR FOR DSA-C-1A2	53	213006	N N	4 0							
2	D 441 P.3/7.0	G080			5K254AL205							
DSA-M-1B1	?HP/?A MOTOR FOR DSA-1B1	53	213006	N N	4 0							
2	D 441 P.6/9.2	G080			5K254AL205							
DSA-M-1B2	?HP/?A MOTOR FOR DSA-C-1B2	53	213006	N N	4 0							
2	D 441 P.6/9.0	G082			5K254AL205							
DSA-M-1C	MOTOR DRIVER FOR DSA-C-1C	02E22	213014	R D	4 0							
2	D 441 P3/4	L205			GTEFC/184T							
DSA-PS-1A	BACK-UP ACCUM AIR PRESS	53	256042	N N	4 0						F	
2	D 444 P.5/7.0	S345			ACW29							
DSA-PS-1B	BACK-UP ACCUM AIR PRESS	53	256042	N N	4 0						F	
2	D 442 P.4/9.0	S345			ACW29							
DSA-PS-19	PRESS SWITCH AIR RECEIVER BYPASS				4 0							
2	D 441											
DSA-PS-2A	AIR RECEIVERS DSA-TK-5A & 6A PRESS	53	256041	N N	4 0						F	
2	D 444 P.3/7.0	S345			ACW22							
DSA-PS-2B	DIESEL STARTING AIR TANK PRESS	53	256041	N N	4 0						F	
2	D 444 P.4/9.0	S345			ACW22							
DSA-PS-3A	DSA-TK-7A & 8A AIR RECEIVERS PRESS	53	256042	N N	4 0						F	
2	D 444 P.4/7.0	S345			ACW29							
DSA-PS-3B	DIESEL STARTING AIR TANK PRESS	53	256042	N N	4 0						F	
2	D 444 P.4/8.8	S345			ACW29							
DSA-PS-34	DSA-C-1C	02E22	256020	R B	4 0						F	

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	D 441 P.2/4.0	B069			FIH-H250							
DSA-PS-35	DSA-C-2C	02E22	256038	R B	4 0						F	
2	D 441 P.6/4.0	B609			9013-AH6-3							
DSA-PS-4A	AIR REVEIVERS DSA-TK-7A & 8A PRESS	53	256041	N N	4 0						F	
2	D 444 P.3/7.0	S345			ACW22							
DSA-PS-4B	DIESEL STARTING AIR TANK PRESS	53	256041	N N	4 0						F	
2	D 444 P.4/9.0	S345			ACW22							
E-BD-P601+	REACTOR CORE COOLING BENCHBOARD	2		A A	4 0	2 1	0 3				F	N
1	W 501 L/13	G080			H13P601							
E-BD-P602+	RWCU BENCHBOARD	2		A A	4 0	2 1	0 3				F	N
1	W 501 L/13.5	G080			H13P602							
E-BD-P603+	REACTOR CONTROL BENCHBOARD	2		A A	4 3	2 1	0 3				F	N
1	W 501 K9/14.1	G080			H13P603							
E-BD-P800+	CONTR RM PNL C	59		A A	4 3	2 1	0 3				F	N
1	W 501 J/14.1	G080			H13P800							
E-BD-P820+	CONTROL RM PNL B	59		A A	4 3	2 1	0 3				F	N
1	W 501 J7/14.1	G080			H13P820							
E-BD-P840+	CONTROL RM PNL A	59		A A		2 1	0 3				F	N
1	W 501 K6/14.1	G080			H13P840							
E-B0-1A	24V BATTERY 1A	51A	030001	B	4 0						F	
2	W 467 H4/12.2	E355			3CC-7							
E-B0-1B	24V BATTERY 1B	51A	030001	B	4 0						F	
2	W 467 H4/12.2	E355			3CC-7							
E-B0-2A	24V BATTERY 2A	51A	030001	B	4 0						F	
2	W 467 L6/10.8	E355			3CC-7							
E-B0-2B	24V BATTERY 2B	51A	030001	B	4 0						F	
2	W 467 L6/10.8	E355			3CC-7							
E-B1-HPCS	HPCS 125V BATTERY	02E22	031001	R D	4 0						F	
2	D 441 R1/4.3	C173			3-DCU9							
E-B1-1	125V STATION BATTERY B1-1	51A	031002	B D	4 3	2 1	0 0			14	F	N
2	W 467 H6/12	E355			76193							
E-B1-2	125V STATION BATTERY B1-2	51A	031002	B D	4 3	2 1	0 0			14	F	N
2	W 467 L6/12	E355			76193							
E-B2-1	250V BATTERY 1	51A	032001	B D	4 3	2 1	0 0			14	F	N
2	W 467 H4/12	E355			76199							
E-CB-B/7		47A	035003	A B	4 3	1 5	0 2				F	N
2	W 467 H8/13.6	W120			50DHP350							
E-CB-B/8		47A	035003	A B	4 3	1 5	0 2				F	N
2	W 467 K7/14.2	W120			50DHP350							
E-CB-CB1IN3		75			4 3						F	
2	W 467 J.1/10.7	S345			JK42006300/UUA101L							
E-CB-CRA/FN1B1		49	035026	A	3 3						F	
2	R 526 N/3.8	I202			5641-DACAB							
E-CB-CRA/FN1B2		49	035026	A	3 3						F	
2	R 526 N/3.8	I202			5641-DACAB							
E-CB-CRA/FN4B		49	035026	A	3 3						F	
2	R 526 N/3.8	I202			5641-DACAB							
E-CB-CRD1A	4160V BRKR TO CRD-P-1A	47A	035003	A B	4 3	1 5	0 2				F	N
2	W 467 H8/13.6	W120			50DHP350							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
E-CB-CRD1B 2	4160V BRKR TO CRD-P-1B W 467 K7/14.2	47A W120	035003	A B	4 3 50 DHP350 0 0	1 5	0 2				F F	N
E-CB-DG1/7 2	EMER SUPPLY 4.16KV CKT BRK D 441 Q.7/7.0	47A W120	035003	A B	4 0 50-DH-P-250	1 5	0 0			07	F	N
E-CB-DG2/8 2	DG2 EMERG 4.16KV CIRCUIT BREAKER D 441 Q.7/9.0	47A W120	035003	A B	4 0 50-DH-P-250	1 5	0 0			07	F	N
E-CB-HPCS 2	4160V HPCS-P-1 BRKR D 441 Q.5/4.4	02E22 G080		X B	4 0						F	
E-CB-LPCSP1 2	4160V LPCS-P-1 BRKR W 467 H8/13.6	47A W120	035003	A B	4 0 50 DHP350	1 5	0 2				F	N
E-CB-MC7A 2	MC-7A 480V CIRCUIT BREAKER W 467 J8/13.8	48 W120	035007	A	4 3 DS416	1 4					F	N
E-CB-MC7B 2	MC-7B 480V CIRCUIT BREAKER W 467 H6/13.4	48 W120	035007	A	4 3 DS416	1 4					F	N
E-CB-MC7C 2	MC-7C 480V CIRCUIT BREAKER W 467 H6/13.4	48 W120	035007	A	4 3 DS416	1 4					F	N
E-CB-MC7E 2	MC-7E 480V CIRCUIT BREAKER W 467 J8/13.1	48 W120	035007	A	4 3 DS416	1 4					F	N
E-CB-MC7F 2	MC-7F 480V CIRCUIT BREAKER W 467 J8/13.8	48 W120	035007	A	4 3 DS416	1 4					F	N
E-CB-MC8A 2	MC-8E 480V CIRCUIT BREAKER W 467 L6/14.5	48 W120	035007	A	4 3 DS416	1 4					F	N
E-CB-MC8B 2	SL-81 480V CIRCUIT BREAKER W 467 L7/14.0	48 W120	035007	A	4 3 DS416	1 4					F	N
E-CB-MC8C 2	MC-8C 480V CIRCUIT BREAKER W 467 L7/14.0	48 W120	035007	A	4 3 DS416	1 4					F	N
E-CB-MC8E 2	MC-8E 480V CIRCUIT BREAKER W 467 L6/14.5	48 W120	035007	A	4 3 DS416	1 4					F	N
E-CB-MC8F 2	MC-8F 480V CIRCUIT BREAKER W 467 L6/14.5	48 W120	035007	A	4 3 DS416	1 4					F	N
E-CB-RCCP1A 2	RCC-M-1A 480V CIRCUIT BREAKER W 467 H6/13.4	48 W120	035007	A	4 0 DS416	1 4					F	N
E-CB-RCCP1B 2	RCC-P-1B 480V CIRCUIT BREAKER W 467 L7/14.0	48 W120	035007	A	4 0 DS416	1 4					F	N
E-CB-RCCP1C 2	RCC-M-1C 480V CIRCUIT BREAKER W 467 L7/14.0	48 W120	035007	A	4 0 DS416	1 4					F	N
E-CB-REAFN1A 2	W 467 H6/13.4	48 W120	035007	A	4 0 DS416						F	N
E-CB-REAFN1B 2	W 467 L6/14.5	48 W120	035007	A	4 0 DS416						F	N
E-CB-RHR2A 2	4160V BRKR TO RHR-P-2A W 467 H8/13.6	47A W120	035003	A B	4 3 50 DHP350	1 5	0 2				F	N
E-CB-RHR2B 2	4160V BRKR TO RHR-P-2B W 467 K7/14.2	47A W120	035003	A B	4 3 50 DHP350	1 5	0 2				F	N
E-CB-RHR2C 2	4160V BRKR TO RHR-P-2C W 467 K7/14.2	47A W120	035003	A B	4 3 50 DHP350	1 5	0 2				F	N
E-CB-RCAFN1A		48	035007	A	4 0						F	N

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EQUIPMENT NO.	LV	DESCRIPTION	PLANT LOCATION	CONTRACT	MFG	QID	QS	USE	MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
	2		W 467 J8/13.1		W120				24Y9836B11							
E-CB-RCAFN1B	2		W 467 L6/14.5	48	W120	035007	A	4 0	24Y9836B11						F	N
E-CB-RPT3A	2	DISCONNECT RRC-P-1A	R 475 L.9/9.3	47A	W120		D N	2 0	24Y9836B11						F	
E-CB-RPT3B	2	DISCONNECT RRC-P-1B	R 475 K.3/9.0	47A	W120		D N	2 0	24Y9836B11						F	N
E-CB-RPT4A	2	DISCONNECT RRC-P-1A	R 522	47A	W120		D N	2 0	24Y9836B11						F	N
E-CB-RPT4B	2	DISCONNECT RRC-P-1B	R 527 M.7/6.8	47A	W120		D N	2 0							F	N
E-CB-SGTEHC1B1	2		R 578 M.4/5.7	49	I202	035026	A	1 0	5641D E50312/67						F	
E-CB-SGTEHC1B2	2		R 572 N.7/8.2	49	I202	035026	A	1 0	5641D E50312/E7						F	
E-CB-SGTESH1A	2		R 522	49	I202	035026	A	3 0	5641D						F	
E-CB-SGTESH1B	2	CB-FOR SGTESH 1B	R 526 N.0/3.8	49	I202	035026	A	3 0	5641-DA-94						F	
E-CB-SGTESH2A	2		R 522	49	I202	035026	A	3 0	5641D						F	
E-CB-SGTESH2B	2	CB-FOR SGTESH 2B	R 522	49	I202	035026	A	3 0	5641D						F	
E-CB-SL71SP	2	SPARE CIRCUIT BREAKER 480V	467 H.6/13.6	48	W120		A	0 0	24Y9836B17	1 4					F	N
E-CB-SM7SP	2	SPARE CIRCUIT BREAKER 4.16KV	467 H.8/13.6	47A	W120		A	0 0	50-DHP-350						F	
E-CB-SM8SP	2	SPARE CIRCUIT BREAKER 4.16KV	467 K.7/14.2	47A	W120		A	0 0	50-DHP-350						F	
E-CB-SS	2		W 467 L7/14.0	48	W120		A	0 0	24Y9836B3	1 4					F	N
E-CB-SW1A	2	4160V BRKR TO SW-P-1A	W 467 H8/13.6	47A	W120	035003	A B	4 3	50DHP350	1 5	0 2				F	N
E-CB-SW1B	2	SW-M-1B 4.16KV CIRCUIT BREAKER	W 467 K7/14.2	47A	W120	035003	A B	4 3	50DHP350	1 5	0 2				F	N
E-CB-1C01A	2		W 467 J.5/11.1		W120			0 0	QC015						F	
E-CB-1C01B	2		W 467 K.0/11.3		W120			0 0	QC015						F	
E-CB-1C02A	2		W 467 L5/12.0		W120	035028		0 0	QC2015						F	
E-CB-1C02B	2		W 467 L5/12.0	51B	W120			0 0	QC2015						F	
E-CB-1C11	2		W 467 J2/11.5	51B	W120			0 0	EHB3090						F	
E-CB-1C12	2		W 467 L7/11.4	51B	W120			0 0	EHB3090						F	
E-CB-1C21	2		W 467 J7/11.2	51B	W120			0 0	LA3350							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
E-CB-1IN2		73			4 3						F	
2	W 467 K5/10.9				JK426300/UVA101L/ASA							
E-CB-2C01A		518			0 0						F	
2	W 467 J5/11.1	W120			E82040							
E-CB-2C02A		518			0 0						F	
2	W 467	N120			E82040							
E-CB-2C02B		518			0 0							
2	W 467 L5/12.0	W120			E82040							
E-CB-2C11		518			0 0						F	
2	W 467 J2/11.5	W120			DA-2300							
E-CB-2C12		518			0 0						F	
2	W 467 L7/11.4	W120			DA-2300							
E-CB-2C21		518			0 0						F	
2	W 467 J7/11.2	W120			MA-2600							
E-CB-4/DG3		02E22		X B	4 0						F	
2	D 441 Q.5/4.4	G080										
E-CB-4/2	4160V BRKR TO SM-2	02E22		X B	4 3						F	
2	D 441 Q.5/4.4	G080										
E-CB-4/41	4160V TR-4/41 XFMR FOR BRKR	02E22		X D	4 3						F	
2	D 441 Q.5/4.4	G080										
E-CB-6ASPARE			035026		0 0						F	
2	576 M.4/5.7	I202			5641-DACAB							
E-CB-6BSPARE			035026		0 0						F	
2	578 M.4/6.7	I202			5641-R-DACAB							
E-CB-7/DG1		47A	035003	A B	4 0	1 5	0 2				F	N
2	W 467 H8/13.6 SM-7	W120			50DHP350/25Y79138							
E-CB-7/1	4160V BRKR TO SM-1	47A	035003	A B	4 3	1 5	0 2				F	N
2	W 467 H8/13.6	W120			50DHP350							
E-CB-7/71	4160V TR-7/71 XFMR BRKR	47A	035003	A B	4 3	1 5	0 2				F	N
2	W 467 H8/13.6	W120			50DHP350							
E-CB-7/73	4160V TR-7/73 XFMR BRKR	47A	035003	A B	4 3	1 5	0 2				F	N
2	W 467 H8/13.6	W120			50DHP350							
E-CB-7/75	4160V BRKR TO SM-75	47A	035003	A B	4 3	1 5	0 2				F	N
2	W 467 H8/13.6	W120			50DHP350							
E-CB-7A/ELPSSA		49		A	0 0	2 5	0 0				F	N
2	W 467 K/10	I005			56410							
E-CB-7A/ELP7AB		49	035022	A	4 0	2 5	0 0				F	N
2	W 467 K/10	I005			5641-D-DC							
E-CB-7A/IN1		49		A	4 3						F	N
2	W 467 K/10	I005			5641-D-DC							
E-CB-7A/MC7AA		49	035015	D	4 3	2 5	0 0				F	N
2	W 467 K/10	I005			HM3-B600							
E-CB-7A/MTCRA6A		49	035016	A	4 0	2 5	0 0				F	N
2	W 467 K/10	I005			AKF-SA60-9							
E-CB-7A/PP7A		49	035017	A	4 3	2 5	0 0				F	N
2	W 467 K/10	I005			5641D-DD							
E-CB-7A/PP7AB		49	035017	A	4 3	2 5	0 0				F	N
2	W 467 K/10	I005			5641D-DD							
E-CB-7A/PWRRCPT		49		A	4 0	2 5	0 0				F	N

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	W 467 K/10	I005			OB-130/94							
E-CB-7A/RPSBUS/		49		A	4 3						F	
2	W 467 K/10	I005										
E-CB-7A/TR7AC		49	035016	A	4 3	2 5	0 0				F	N
2	W 467 K/10	I005			AKF-SA60-9							
E-CB-7A/4BL/SPA		49		A	0 0	2 5	0 0				F	N
2	W 467 K/10	I005			5641D-DA-94							
E-CB-7AA/DMAEHC		49	035018	A	4 0	2 5	0 0				F	N
2	D 441 Q3/6.8	I005			AKE-SA100-3							
E-CB-7AA/DRAEUH		49	035019	A	4 0	2 5	0 0				F	N
2	D 441 Q3/6.8	I005			AKE-SA30-4							
E-CB-7AA/ELP7AA		49	035016	A	0 0	2 5	0 0				F	N
2	D 441 Q3/6.8	I005			AKF-SA60-9							
E-CB-7AA/PP7AAA		49	035016	A	4 3	2 5	0 0				F	N
2	D 441 Q3/6.8	I005			AKF-SA60-9							
E-CB-7AA/PRAEUA		49	035019	A	4 3	2 5	0 0				F	N
2	D 441 Q3/6.8	I005			AKF-SA30-4							
E-CB-7AA/PRAEUH		49	035019	A	4 3	2 5	0 0				F	N
2	D 441 Q3/6.8	I005			AKF-SA30-4							
E-CB-7AA/PWRRCP		49	035016	A	4 0	2 5	0 0				F	N
2	D 441 Q3/6.8	I005			AKF-SA60-9							
E-CB-7AA/5ARSPA		49		A	0 0	2 5	0 0				F	N
2	D 441 Q3/6.8	I005			5641D-DA-94							
E-CB-7AA/6ARSPA	SPARE BRKR	49	035016	A	0 0	2 5	0 0				F	N
2	D 441 Q3/6.8	I005			AKF-SA60-9							
E-CB-7A6A	E-MC-7AA FOR 480V CIRCUIT BREAKER	49	035025	D 8	4 3	2 5	0 0				F	N
2	W 467 J8/10.2	I202			HM3F800							
E-CB-7B/CIAC1A	CB FOR CIA-C-1A	49		A	3 0						F	
2	R 527 H.5/8.3	I005			5641D-DADAB							
E-CB-7B/CRAAD1A		49	035016	A	1 3	2 5	0 0				F	N
2	R 522 H4/8.1	I005			AKF-SA60-3							
E-CB-7B/ELP7BB		49	035016	A	0 0	2 5	0 0				F	N
2	R 522 H4/8.1	I005			AKF-SA60-3							
E-CB-7B/MC7BA		49	035015	D	1 3	2 5	0 0				F	N
2	R 522 H4/8.1	I005			C-19							
E-CB-7B/MC7BB		49	035019	D	1 3	2 5	0 0				F	N
2	R 527 H3/8.3	I202			C-19							
E-CB-7B/SGTESH1		49	035019	A	1 0	2 5	0 0				F	N
2	R 522 H4/8.1	I005			AKF-SA30-9							
E-CB-7B/SGTESH2		49	035019	A	1 0	2 5	0 0				F	N
2	R 522 H4/8.1	I005			AKF-SA30-9							
E-CB-7BB/CACEHC		49	035020	A	1 0	2 5	0 0				F	N
2	R 572 H7/6.0	I005			AKF-SA400-8							
E-CB-7BB/CACHR1		49	035016	A	1 0	2 5	0 0				F	N
2	R 572 H7/6.0	I005			AKF-SA60-9							
E-CB-7BB/ELP7BA		49	035016	A	0 0	2 5	0 0				F	N
2	R 572 H7/6.0	I005			AKF-SA60-9							
E-CB-7BB/FPCP1A	CIRCUIT BKR FOR FPC-P-1A	49		A	4 3						F	
2	R 572 H.4/5.8				5641D							

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EQUIPMENT NO.	LV	DESCRIPTION	PLANT LOCATION	CONTRACT	MFG	QID	QS	USE	TEST	MFG MODEL NO.	ANL	F/O	C	FREQ	TM	HL
E-CB-7B8/SGTEHC	2		R 572 H7/6.0	49	I005	035016	A	1 0	2 5	AKF-SA60-9	0 0				F	N
E-CB-7B8/2EL/CN	2		R 572 H7/6.0	49	I005		A	3 3	2 5	56410-DB-94	0 0				F	N
E-CB-7B8/2ERSPA	2		R 572 H7/6.0	49	I005		A	0 0	2 5	56410-DB-94	0 0				F	N
E-CB-7B1D	2		R 522 H5/8.3	49	I202		A N	1 3	2 5		0 0				F	N
E-CB-7B3C	2		R 522 H5/8.3	49	I202		A N	1 3	2 5		0 0				F	N
E-CB-7F/IN1	2		W 525 H4/11.0	49	I005	035022	A	4 3	2 5	AKF-SA100-3	0 0				F	N
E-CB-7F/PP7FA	2		W 525 H4/11.0	49	I005	035022	A	4 3	2 5	AKE-SA100-3	0 0				F	N
E-CB-7F/WMAEHC5	2		W 525 H4/11.0	49	I005	035022	A	4 3	2 5	AKF-SA100-3	0 0				F	N
E-CB-7F/WMAHU55	2		W 525 H4/11.0	49	I005	035023	A	4 3	2 5	8-15	0 0				F	N
E-CB-7F/WOAEHC5	2		W 525 H4/11.0	49	I005	035019	A	4 3	2 5	AKF-SA30-6	0 0				F	N
E-CB-7F/WRAAC51	2		W 525 H4/11.0	49	I005	035019	A	4 3	2 5	AKF-SA30-4	0 0				F	N
E-CB-7F/WRAEHC5	2		W 525 H4/11.0	49	I005	035019	A	4 3	2 5	AKF-SA30-4	0 0				F	N
E-CB-7F/4ASPARE	2		W 525 H4/11.0	49	I005	035022	A	0 0	2 5	AKF-SA100-3	0 0				F	N
E-CB-71/7B	2		W 467 H5/12.7	48	W120	035027	B	4 3	1 4	DS-416/24Y9836B5					F	N
E-CB-73/7A	2	480V FDR BRKR TO MC-7A	W 467 J.6/12.7	48	W120	035027	A B	4 3	1 4	DS-416					F	N
E-CB-73/7F	2	480V FDR BRKR TO MC-7F	W 467 J.6/12.7	48	W120	035027	A B	4 3	1 4	DS-416					F	N
E-CB-8/DG2	2	4160V BRKR TO DG2	W 467 K7/14.2	47A	W120	035003	A B	4 0	1 5	50DHP350	0 2				F	N
E-CB-8/3	2	4160V BRKR TO SM-3	W 467 K7/14.2	47A	W120	035003	A B	4 3	1 5	50DHP350	0 2				F	N
E-CB-8/81	2	4160V BRKR TO TR-8-81	W 467 K7/14.2	47A	W120	035003	A B	4 3	1 5	50DHP350	0 2				F	N
E-CB-8/83	2	4160V BRKR	W 467 K7/14.2	47A	W120	035003	A B	4 3	1 5	50DHP350	0 2				F	N
E-CB-8/85	2	4160KV BRKR TO SM-85	W 467 K7/14.2	47A	W120	035003	A B	4 3	1 5	50DHP350	0 2					N
E-CB-8A/CASDY1A	2		W 467 L9/10	49	I005	035022	A	4 0	2 5	AKF-SA100-3	0 0					N
E-CB-8A/C12	2		W 467 L9/10.0	49	I005	035022	A	4 3	2 5	AKF-SA100-10	0 0				F	N
E-CB-8A/ELP8AB	2		W 467 L9/10.0	49	I005	035016	A	0 0	2 5	AKF-SA60-9	0 0				F	N
E-CB-8A/MC8AA				49		035015	0	4 3	2 5		0 0				F	N

EQUIPMENT NO.	LV	DESCRIPTION	PLANT LOCATION	CONTRACT	MFG	QID	QS	USE	MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
	2		W 467 L9/10		I005				C-19							
E-CB-8A/MC8A2C	2		W 467 L9/10	49	I005	035024	D	4 3	B-11	2 5	0 0				F	N
E-CB-8A/METTWR	2		W 467 L9/10	49	I005	035016	A	4 3	AKF-SA60-9	2 5	0 0				F	N
E-CB-8A/MTCRA	2		W 467 L9/10	49	I005	035022	A	4 0	AKF-SA100-3	2 5	0 0				F	N
E-CB-8A/PP8AB	2		W 467 L9/10.0	49	I005	035017	A	4 0	AKF-SA200.10	2 5	0 0				F	N
E-CB-8A/RPSBUSB	2		W 467 L9/10.0	49	I005	035016	A	4 0	AKF-SA60-9	2 5	0 0				F	N
E-CB-8A/TR8A	2		W 467 L9/10	49	I005	035017	A	4 3	AKF-SA200-10	2 5	0 0				F	N
E-CB-8A/6BLSPAR	2		W 467 L9/10	49	I005		A	0 0	56410-DB-94	2 5	0 0				F	N
E-CB-8A/6BRELPS	2		W 467 L9/10	49	I005		A	4 3	56410	2 5	0 0				F	N
E-CB-8AA/DHAEHC	2		D 441 Q3/6.8	49	I00K	035016	A	4 3	AKF-SA60-9	2 5	0 0				F	N
E-CB-8AA/DRAEUH	2		D 441 Q3/6.8	49	I005	035019	A	4 3	AKF-SA30-4	2 5	0 0				F	N
E-CB-8AA/ELP8AA	2		D 441 Q3/6.8	49	I005	035019	A	0 0	AKF-SA30-4	2 5	0 0				F	N
E-CB-8AA/PRAEUH	2		D 441 Q3/6.8	49	I005	035016	A	4 3	AKF-SA60-9	2 5	0 0				F	N
E-CB-8AA/PWRRCP	2		D 441 Q3/6.8	49	I005	035016	A	4 3	AKF-SA60-9	2 5	0 0				F	N
E-CB-8AA/RP8AAA	2		D 441 Q3/6.8	49	I005	035016	A	4 3	AKF-SA60-9	2 5	0 0				F	N
E-CB-8AA/TRB/CO	2		D 441 Q3/6.8	49	I005		A	4 3		2 5	0 0				F	N
E-CB-8A5A	2		W 467 K9/10	49	I202	035025	A 8	4 3	H43F800	2 5	0 0				F	N
E-CB-8B/CIAC1B	2	CB FOR CIA-C-1B	R 528 N/3.8	49			A	3 0		2 5	0 0				F	N
E-CB-8B/CRAADLB	2		R 522 N0/3.8	49	I005		A	3 0	56410-DB-94	2 5	0 0				F	N
E-CB-8B/ELP8BB	2		R 526 N/3.8	49	I005	035016	A	3 0	AKF-SA60-3	2 5	0 0				F	N
E-CB-8B/MC8BA	2		R 522 N0/3.8	49	I005	035015	D	1 3	C-19	2 5	0 0				F	N
E-CB-8B/MC8BB	2		R 522 N0/3.8	49	I005	035015	D	1 3	HJ3-B300	2 5	0 0				F	N
E-CB-8B/SGTESH2	2		R 522 N0/3.8	49	I005	035019	A	1 0	AKF-SA30-4	2 5	0 0				F	N
E-CB-8B/SGTFSH1	2		R 522 N0/3.8	49	I005	035019	A	1 0	AKF-SA30-4	2 5	0 0				F	N
E-CB-8B/IODSPAR	2		R 52[illegible] N/3.8	49	I005		A	3 0	56410-08-94	2 5	0 0				F	N

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QIO	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
E-CB-8BB/CACEHC		49	035022	A	1 0	2 5	0 0				F	N
2	R 572 M5/8.2	I005			AKF-SA100-3							
E-CB-8BB/ELP8BA		49	035016	A	3 0	2 5	0 0				F	N
2	R 572 M5/8.2	I005			AKF-SA60-9							
E-CB-8BB/FPCP1B	CIRCUIT BKR FOR FPC-P-1B	49		A	4 3	2 5	0 0				F	N
2	R 572 N.7/8.2				5641D							
E-CB-8BB/SGTEHC		49	035016	A	1 0	2 5	0 0				F	N
2	R 572 M5/8.2	I005			AKF-SA60-9							
E-CB-8BB/SGTV1A		49	035016	A	1 0	2 5	0 0				F	N
2	R 572 M5/8.2	I005			AKF-SA60-9							
E-CB-8BB/1CR/HR		49	035016	A	1 3	2 5	0 0				F	N
2	R 572 M5/8.2	I005			AKF-SA60-9							
E-CB-8B1C		49		A N	1 3	2 5	0 0				F	N
2	R 522 N/3.5	I202										
E-CB-8B2D		49		A N	1 3	2 5	0 0				F	N
2	R 522 N/3.5	I202										
E-CB-8CG2	SM-8 EMERG 4.16KV CIRCUIT BREAKER	49	035003	A	4 3	2 5	0 0				F	N
2	W	W120			50DHP350							
E-CB-8F/PP8FA		49	035022	A	4 3	2 5	0 0				F	N
2	W 525 K2/11.3	I005			AKF-SA100-3							
E-CB-8F/WMAEHC5		49	035019	A	4 3	2 5	0 0				F	N
2	W 525 K2/11.3	I005			AKF-SA30-6							
E-CB-8F/WOAFH35		49	035016	A	4 3	2 5	0 0				F	N
2	W 525 K2/11.3	I005			AKF-SA60-6							
E-CB-8F/WRAAC52		49	035019	A	4 0	2 5	0 0					N
2	W 525 K2/11.3	I005			AKF-SA30-6							
E-CB-8F/2ASPARE		49	035017	A	0 0	2 5	0 0				F	N
2	W 525 K2/11.3	I00K			AKF-SA200-10							
E-CB-8F/2BSPARE		49	035024	A	0 0	2 5	0 0				F	
2	W 525 K2/11.3	I005			B-11							
E-CB-8F/3CL/WMA		49	035016	A	4 3	2 5	0 0				F	N
2	W 525 K2/11.3	I005			AKF-SA60-9							
E-CB-8F/3D/WMAH		49	035023	A	4 3	2 5	0 0				F	N
2	W 525 K2/11.3	I005			B-15							
E-CB-8F/3FLSPAR		49	035016	A	0 0	2 5	0 0				F	N
2	W 525 K2/11.3	I005			AKF-SA60-3							
E-CB-8FPWRRCPT		49	035016	A	0 0	2 5	0 0				F	N
2	W 525 K2/11.3	I005			AKF-SA60-9							
E-CB-81/8B	480V FOR BRKR TO MC-8B	48	035027	A B	4 3	1 4					F	N
2	W 467 L4/13.8	W120			DS416							
E-CB-83/8A	480V FOR BRKR TO MC-8A	48	035027	A B	4 3	1 4					F	N
2	W 467 L4/14.5	W120			DS416							
E-CB-83/8F	480V FOR BRKR TO MC-8F	48	035027	A B	4 3	1 4					F	N
2	W 467 L4/14.5	W120			DS416							
E-CP-CCHV1+	CONTR RM CRIT SWGR RM HVAC PNL 1	216		B D	4 3					33	F	N
1	W 525 K/12.3	P321										
E-CP-CCHV2+	CONTR RM CRIT SWGR RM H C PNL 2	216		B D	4 3					33	F	N
1	W 525 K2/12.3	P321										
E-CP-CCHV3+	CONTR RM CRIT SWGR RM HVAC PNL 3	216		B D	4 3					33	F	N

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TH	HL
1	W 525 K/12.5	P321										
E-CP-CCHV4+	CONTR RM CRIT SWGR RM HVAC PNL 4	216		B 0	4 3					33	F	N
1	W 525 K2/12.5	P321										
E-CP-DG/CP1+	DIESEL ENG CONTROL PNL	53		A N	4 0	2 1	0 0			99+	F	N
1	D 441 Q2/7	S407										
E-CP-DG/CP2+	DIESEL ENG CONTROL PNL DG-2	53		A N	4 0	2 1	0 0			99+	F	N
1	D 441 Q2/8.9	S407										
E-CP-DG/EP1+	DIESEL GENERATOR & CONTROL PNL	53		A N	4 0	2 1	0 0			99+	F	N
1	D 441 Q.1/7.0	S407										
E-CP-DG/EP2+	DIESEL GEN2 CONTROL PNL	53		A N	4 0	2 1	0 0			99+	F	N
1	D 441 Q1/8.9	S407										
E-CP-DG/REP1+	DIESEL GEN1 CONTROL PNL	53		A N	4 0	2 1	0 0			99+	F	
1	D 441 Q5/7.1	S407										
E-CP-DG/REP2+	DIESEL GEN2 CONTROL PNL	53		A N	4 0	2 1	0 0			99+	F	
1	D 441 Q4/9	S407										
E-CP-DG/RR1+	DIESEL GEN1 CONTROL PNL			F N	4 0						F	
1	D 441 Q4/7	S407										
E-CP-DG/RR2+		53			4 0						F	
1	D 441 Q4/9	S407										
E-CP-DGHV/I+		216	F	B 0	4 3					33	F	N
1	D 444 Q.7/6.6	P321										
E-CP-DGHV/II+		216	F	B 0	4 3					33	F	N
1	D 444 Q.7/8.6	P321										
E-CP-DGHV/III+		216		B 0	4 3					33	F	N
1	D 455 P1/4.5	P321										
E-CP-DGHV/4+	DIESEL GEN CABLE COOL SYSTEM PNL	216		R 0	4 0						F	
1	D 444 P.0/9.9											
E-CP-P001+		2		A A	4 0	2 1	0 3				F	N
1	W 461 J6/14.5	G080			C61-P001							
E-CP-P606+		2	050102	A A	4 3	2 1	0 3				F	N
1	W 501 J4/11.7	G080			H13-P606							
E-CP-P608+		2	050102	A A	4 0	2 1	0 3				F	N
1	W 501 K9/11.4	G080			H13-P606							
E-CP-P609+		2	050103	A A	4 0	2 1	0 3				F	N
1	W 501 J/11.7	G080			H13-P609							
E-CP-P611+		2	050103	A A	4 0	2 1	0 3				F	N
1	W 501 L2/11.7	G080			H13-P611							
E-CP-P612+		2	050104	A A	4 3	2 1	0 3				F	N
1	W 501 J1/12.3	G080			H13-P612							
E-CP-P613+		2	050105	A A	4 3	2 1	0 3				F	N
1	W 501 K9/12	G080			H13-P613							
E-CP-P618+		2	050106	A A	4 3	2 1	0 3				F	N
1	W 501 L1/12	G080			H13-P618							
E-CP-P621+		2	050107	A A	4 2	2 1	0 3				F	N
1	W 501 J3/12	G080			H13-P621							
E-CP-P622+		2	050107	A A	4 3	2 1	0 3				F	N
1	W 501 K8/12	G080			H13-P622							
E-CP-P623+		2	050107	A A	4 3	2 1	0 3				F	N
1	W 501 J4/12	G080			H13-P623							

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
E-CP-P625+		2	050108	A A	4 0	2 1	0 3				F	N
1	W 501 L2/12.4	G080			H13-P625							
E-CP-P626+		2	050109	A A	4 3	2 1	0 3				F	N
1	W 501 J5/11.8	G080			H13-P626							
E-CP-P627+		2	050110	A A	4 3	2 1	0 3				F	N
1	W 501 K3/11.8	G080			H13-P627							
E-CP-P628+		2	050111	A A	4 0	2 1	0 3				F	N
1	W 501 J2/12	G080			H13-P628							
E-CP-P629+		2	050108	A A	4 3	2 1	0 3				F	N
1	W 501 J/12	G080			H13-P629							
E-CP-P631+		2	050112	A A	4 0	2 1	0 3				F	N
1	W 501 L/12	G080			H13-P631							
E-CP-P632+		2	050113	A A	4 0	2 1	0 3				F	N
1	W 501 J6/12	G080			H13-P632							
E-CP-P633+		2	050102	A A	4 3	2 1	0 3				F	N
1	W 501 K9/11.7	G080			H13-P633							
E-CP-P642+		2	050112	A A	4 0	2 1	0 3				F	N
1	W 501 K6/12	G080			H13-P642							
E-CP-P650+		2	050114	A A	4 1	2 1	0 3				F	N
1	W 501 J4/12.4	G080			H13-P650							
E-CP-P659+		2	050115	A A	4 1	2 1	0 3				F	N
1	W 501 J4/11.4	G080			H13-P659							
E-CP-P679+		2	050116	A A	4 1	2 1	0 3				F	N
1	W 501 L6/13.5	G080			H13-P679							
E-CP-P680+		2	050117	A A	4 3	2 1	0 3				F	N
1	W 501 L6/12.8	G080			H13-P680							
E-CP-P681+		2	050118	A A	4 3	2 1	0 3				F	N
1	W 501 L6/12.8	G080			H13-P681							
E-CP-P682+		2	050119	A A	4 3	2 1	0 3				F	N
1	W 501 H6/12.3	G080			H13-P682							
E-CP-P683+		2	050120	A A	4 3	2 1	0 3				F	N
1	W 501 L6/12	G080			H13-P683							
E-CP-P685+		2	050122	A A	4 3	2 1	0 3				F	N
1	W 501 L6/11.8	G080			H13-P685							
E-CP-P686+		2	050123	A A	4 3	2 1	0 3				F	N
1	W 501 H6/11.8	G080			H13-P686							
E-CP-P687+		2	050124	A A	4 3	2 1	0 3				F	N
1	W 501 L6/11.4	G080			H13-P687							
E-CP-P688+	CONTR RM PNL D	2	050125	A A	4 3	2 1	0 3				F	N
1	W 501 H6/11.4	G080			H13-P688							
E-CP-P689+		2	050126	A A	4 3	2 1	0 3				F	N
1	W 501 L6/11	G080			H13-P689							
E-CP-P690+		2	050127	A A	4 3	2 1	0 3				F	N
1	W 501 H6/11	G080			H13-P690							
E-CP-P811+	CONTR RM PNL KII	59		A A	4 0	2 1	0 3				F	N
1	W 501 K6/10.6	G080			H13 P 811							
E-CP-P812/RI+	CONTR RM PNL RI	59		A A	4 3	2 1	0 3				F	N
1	W 501 K7/10.6	G080			H13 P 812							
E-CP-P812/RII+	CONTR RM PNL RII	59		A A	4 3	2 1	0 3				F	N

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
1	W 501 K8/10.6	G080			H13 P 812							
E-CP-P813/HI+	CONTR RM PNL HII	59		A A	4 3	2 1	0 3				F	N
1	W 501 K9/10.6	G080			H13 P 813							
E-CP-P813/HII+	CONTR RM PNL HII	59		A A	4 3	2 1	0 3				F	N
1	W 501 L/10.6	G080			H13 P 813							
E-CP-P814/JI+	CONTR RM PNL JI	59		A A	4 3	2 1	0 3				F	N
1	W 501 L1/10.6	G080			H13 P 814							
E-CP-P814/JII+	CONTR RM PNL JII	59		A A	4 3	2 1	0 3				F	N
1	W 501 L2/10.6	G080			H13 P 814							
E-CP-P821+	MSLC CONTR PNL W	59		A A	4 0	2 1	0 3				F	N
1	W 501 H9/10.6											
E-CP-P825+	CONTR RM PNL N	59		A A	4 0	2 1	0 3				F	N
1	W 501 J3/10.6	G080			H13 P825							
E-CP-P826+	CONTR RM PNL F	59		A A	4 3	2 1	0 3				F	N
1	W 501 J5/10.6	G080			H13 P826							
E-CP-P826/PII+	CONTR RM PNL	59		A A.	4 3	2 1	0 3				F	N
1	W 501 J6/10.6	G080			H13 P826							
E-CP-P827+	CONTR RM PNL KI	59		A A	4 0	2 1	0 3				F	N
1	W 501 J7/10.6	G080			H13 P827							
E-CP-P833+	CONTR RM PNL GII	59		A A	4 3	2 1	0 3				F	N
1	W 501 L2/10.3	G080			H13 P833							
E-CP-P841+	CONTR RM PNL GI	59		A A	4 3	2 1	0 3				F	N
1	W 501 H9/10.3	G080			H13 P841							
E-CP-P842+	CONTR RM PNL E	59		A A	4 0	2 1	0 3				F	N
1	W 501 J1/10.1	G080			H13 P842							
E-CP-P851/S+		59		A A	4 3	2 1	0 3				F	N
1	W 501 J6/12.5	G080			H13-P851							
E-CP-P890/L+	CONTR RM PNL L	59		A A	4 0	2 1	0 3				F	N
1	W 501 H6/11.0	G080			H13 P890							
E-CP-RAD/22+	CONTAINMENT RAD MONITOR DIV I	92B		B	4 3						F	
1	W 501 H4/10	K020										
E-CP-RAD/23+	CONTAINMENT RAD MONITOR DIV 2	92B		B	4 3						F	
1	W 501 L2/10	K020										
E-CP-RC/A+		218		B B	4 3	2 1	0 C				F	N
1	W 501 H.4/10.6	S243										
E-CP-RC/B+	RELAY CABINET, CONTROL ROOM	218	050128	B B	4 3	2 1	0 0				F	N
1	W 501 L8/10.6	S423			ARC-B							
E-CP-RC/1+	RELAY CABINET, CONTROL ROOM	218	050128	B B	4 3	2 1	0 0				F	N
1	W 501 H4/10.9	S423			ARC-B							
E-CP-RC/2+	RELAY CABINET, CONTROL ROOM	218	050128	B B	4 3	2 1	0 0				F	N
1	W 501 L8/11	S423			ARC-B							
E-CP-RS+	REMOTE SHTDN PNL	59		A A	4 0	2 1	0 3				F	N
1	W 467 J6/14.5	G080			H22-P100							
E-CP-VB/1A+	VAC BRKR RLY PNL	218			1 1						F	
1	R 471 H7/8.3											
E-CP-9684+		2	050121	A A	4 3	2 1	0 3				F	N
1	W 501 H6/12	G080			H13-P684							
E-CO-1A+	24V BATTERY CHARGER 1A	51B		A D	0 0						F	
1	W 467 K/11.3	P319			SC-24-25							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
E-CO-1B+	24V BATTERY CHARGER 1B	51B		A D	0 0						F	
1	W 467 K/11.3	P319			SC-24-25							
E-CO-2A+	24V BATTERY CHARGER 2A	51B		A D	0 0						F	
1	W 467 L3/11.7	P319			SC-24-25							
E-CO-2B+	24V BATTERY CHARGER 2B	51B		A D	0 0						F	
1	W 467 L3/11.7	P319			SC-24-25							
E-C1-HPCS+	125V BATTERY CHARGER	02E22		A D	0 0						F	
1	D 441 Q8/4	C173			ARR130H/K50							
E-C1-1+	125V BATTERY CHARGER 1	51B		A D	0 0						F	
1	W 467 H6/11.2	P319			3SC-130-200							
E-C1-2+	125V BATTERY CHARGER 2	51B		A D	0 0						F	
1	W 467 L8/11.3	P319			3SC-130-200							
E-C2-1+	250V BATTERY CHARGER 1	51B		A D	0 0						F	
1	W 467 L6/11.1	P319			3SC-260-400							
E-DP-HPCS+		E22	080001	R B	4 0						F	
1	W 447 P8/4.4	G080			SWBD							
E-DP-SCA+		218	080002	A B	4 3	2 1	0 0			10	E	N
1	W 501 H3/11.4	S345			QM-02653-21X1							
E-DP-SOB+		218	080002	A B	4 3	2 1	0 0			10	F	N
1	W 501 L5/11.0	S345			QM-02653-21X2							
E-DP-S1/1+		218	080003	A D	4 3	2 1	0 0			10	F	N
1	W 467 H9/11.0	S345			QW-02653-22Y3							
E-DP-S1/1A+		218	080003	A D	4 3	2 1	0 0			10	F	N
1	W 467 H9/11.0	S345			QW-02653-22Y3							
E-DP-S1/1D+		218	080002	A D	4 3	2 1	0 0			10	F	N
1	W 467 H3/11.9	S345			QM-02653-21X4							
E-DP-S1/1E+		218	080002	A D	4 0	2 1	0 0			10	F	N
1	D 447 Q.6/7.4	S343			QM-02653-21X5							
E-DP-S1/2+		218	080003	A D	4 3	2 1	0 0			10	F	N
1	W 467 L9/11.3	S345			QW-02653-228-X							
E-DP-S1/2A+		218	080002	A D	4 3	2 1	0 0			10	F	N
1	W 501 L.9/12.0	S345			QM-02653-21X3							
E-DP-S1/2D+		218	080002	A D	4 3	2 1	0 0			10	F	N
1	W 467 J.3/14.7	S345			QM-02653-21X4							
E-DP-S1/2E+		218	080002	A D	4 3	2 1	0 0			10		N
1	D 441 Q.6/9.4	S345			QM-02653-27X5							
E-DP-S1/3+		218	080002	A D	4 3	2 1	0 0			10	F	N
1	W 525 H3/13	S345			QM-02653-1652							
E-DP-S2/1+		218	080002	A D	4 3	2 1	0 0			10	F	N
1	W 467 H9/10.8	S345			QM-02653-22Y2							
E-ELC-X100A/01		55		A	1 3						F	
2	C 508 98 DEG AZ	R098			#10496-75OHM TRIAX							
E-ELC-X100A/02		55		A	1 3						F	
2	C 508	R098			#10495-135OHM TRIAX							
E-ELC-X100A/03		55		A	1 3						F	
2	C 508 98 DEG AZ				SILICONE RUBBER INSU							
E-ELC-X102A/01		55		A	1 3						F	
2	C 534 183 DEG AZ				TSP, CU CONSTAN,SHLD							
E-ELC-X103A/01		55		A	1 3						F	

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	C 534 208 DEG AZ	D040		A	EPR INSUL OKOLENE JA							
E-ELC-X103A/02		55			2 3						F	
2	C 534 208 DEG AZ	D040		A	EPR INSUL NEOPR JACK							
E-ELC-X104A/01		55			2 3						F	
2	C 511 139 DEG AZ	D040		A	EPR INSUL NEOPR JACK							
E-ELC-X105A/01		55			2 3						F	
2	C 507 100 DEG AZ	D040		A	EPR INSUL NEOPR JACK							
E-ELC-X107A/01		55			2 3						F	
2	C 475 52 DEG AZ	D040			EPR INSUL NEOPR JACK							
E-ELP-8BA	ELP-8B-A EMERG LTG PNL	218			0 0						F	
1	R 606 N0/8.9	S345			NQ08-02653-304							
E-ELP-8BB	ELP-8B-B EMERG LIGHTING PNL	49			0 0						F	
1	R 471 N8/8.3	S345			NQ08-02653-4E4							
E-EPP-7AAA+	PP-7A-A-A EMERGENCY	218	119001	A N	4 3	2 1	0 0			33	F	N
1	D 441 Q5/7.4	NQ08			-02653-29FF							
E-EPP-8AAA+		218	119001	A N	4 3	2 1	0 0			33	F	N
1	D 441 Q.5/9.4	NQ08			-02653-29FF							
E-IN-2+	INVERTER	73	184003	B B	4 3						F	
1	W 467 K6/10.7	E209			TM203-1-101							
E-IN-3+	INVERTER-3	73	184003	B B	4 3							
1	W 467 K6/10.6	E209			TM203-1-101							
E-IR-P001+		2		A A	1 0	2 1	0 3				F	N
1	R 471 K/4.2	G082										
E-IR-P002+		2		A A	2 3	2 1	0 3				F	N
1	R 522 N7/5.0	G082										
E-IR-P004+		2		A A	1 3	2 1	0 3				F	N
1	R 522 J5/7.2	G082										
E-IR-P005+		2		A A	1 3	2 1	0 3				F	N
1	R 522 N.7/5.6	G082										
E-IR-P006+		2		A A	2 3	2 1	0 3				F	N
1	R 471 L5/4.1	G082										
E-IR-P008+		2		A A	1 3	2 1	0 3				F	N
1	R 522 N7/9.3	G082										
E-IR-P009+		2		A A	2 2	2 1	0 3				F	N
1	R 471 J7/8.0	G082										
E-IR-P010+		2		A A	2 2	2 1	0 3				F	N
2	R 471 M5/4.5	G082										
E-IR-P011+		2		A A	2 3	2 1	0 3				F	N
1	R 568 M8/4.3	G082										
E-IR-P015+		2		A A	1 3	2 1	0 3				F	N
1	R 501 H7/7.3	G082			368X270TCG1							
E-IR-P017+		2		A A	2 2	2 1	0 3				F	N
1	R 471 L/8	G082										
E-IR-P018+	RHR-INST RACK DIV 1	2		A A	1 3	2 1	0 3				F	N
1	R 501 J.5/3.8	G080										
E-IR-P021+		2		A A	1 3	2 1	0 3				F	N
1	R 591 H9/9.3	G082										
E-IR-P022+		2		A A	2 3	2 1	0 3				F	N
1	R 471 M5/7.9	G082										

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EQUIPMENT NO.	LV	DESCRIPTION	PLANT LOCATION	CONTRACT	MFG	QID	QS	USE	MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
E-IR-P025+	1		R 501 L9/3.7	2	G082		A A	1 3		2 1	0 3				F	N
E-IR-P026+	1		R 522 J8/4.6	2	G082		A A	1 3		2 1	0 3				F	N
E-IR-P027+	1		R 522 H8/6.6	2	G082		A A	1 3		2 1	0 3				F	N
E-IR-P028+	1		D 447 Q1/4	2	G080		A A	4 0	H22-P028	2 1	0 3				F	N
E-IR-P029+	1		R 471 K9/3.8	2	G082		A A	1 0		2 1	0 3				F	N
E-IR-P030+	1		R 501 L6/3.5	2	G082		A A	1 3		2 1	0 3				F	N
E-IR-P031+	1		R 501 H4/7.7	2	G082		A A	7 3		2 1	0 3				F	N
E-IR-P032+	1		R 507 L5/3.5	2	G082		A A	1 3		2 1	0 3				F	N
E-IR-P033+	1		R 501 H8/8.3	2	G083		A A	1 3		2 1	0 3				F	N
E-IR-P039+	1		R 522 M7/7	2	G082		A A	1 0		2 1	0 3				F	N
E-IR-P040+	1		R 522 N2/4.2	2	G082		A A	1 0		2 1	0 3				F	N
E-IR-SR/13+	1	SAMPLE RACK 13 H202 CONTAINMENT MO	R 548 M6/4.5	92B				3 0							F	
E-IR-SR/14+	1	SAMPLE RACK 14 H202 CONT MONIT	R 548 M6/4.6	92B				3 0							F	
E-IR-SR/15+	1	SAMPLE RACK 15 CL IN AIR MONIT	R 548 M6/4.8	92B				2 0							F	
E-IR-SR/16+	1	SAMPLE RACK 16 CL IN AIR MONIT	W 525 K2/12.1	92B				4 0							F	
E-IR-SR/18+	1	INTAKE AIR RAD MONITOR	W 525	92B				4 3							F	
E-IR-SR/19+	1	INTAKE AIR RAD MONITOR	W 525	92B				4 3								
E-IR-SR/20+	1	CONTAINMENT RAD MONITOR	R 548 M2/4.6	92B				1 0							F	
E-IR-SR/21+	1	CONTAINMENT RAD MONITOR	R 548 M2/4.8	92B				1 0							F	
E-IR-21+	1	SPRAY POND A IR	A 441 C9/2.6	58	J035	185099	A A	4 0	IR-21	2 1	0 1			33	F	N
E-IR-22+	1	SPRAY POND B IR	B 441 C1/2.7	58	J035	185099	A A	4 0	IR-22	2 1	0 1			33	F	N
E-IR-24+	1	HPLS SW INSTR RACK DIV III	A 441 B/2.7	58	J035	185099	A A	4 0	IR-24	2 1	0 1			33	F	N
E-IR-25+	1	SPRAY POND B SW IR	B 441 C1/1.8	58		185099	A A	4 0		2 1	0 1			33	F	N
E-IR-26+	1	SPRAY POND A SW IR	A 441 C1/1.2	58		185099	A A	4 0		2 1	0 1			33	F	N
E-IR-61+		R BLDG INSTRU RACK DIV II		58		185099	A A	1 0		2 1	0 1			33	F	N

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EQUIPMENT NO.	LV	DESCRIPTION	PLANT LOCATION	CONTRACT	MFG	QID	QS	USE	MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
	1		R 422 N1/3.5													
E-IR-62+	1	IR BLDG INSTRU RACK DIV I	R 471 H4/6.8	58		185099	A A	1 0		2 1	0 1			33	F	N
E-IR-63+	1	R BLDG INSTRU RACK DIV II	R 501 L.2/9.3	58	J035	185099	A A	1 0	757-E-599	2 1	0 1			33	F	N
E-IR-64+	1	R BLDG INSTRU RACK DIV II	R 501 N/4.8	58		185099	A A	1 0		2 1	0 1			33	F	N
E-IR-65+	1	R BLDG INSTRU RACK DIV I	R 471 N/4	58		185099	A A	1 0		2 1	0 1			33	F	N
E-IR-66+	1	R BLDG INSTRU RACK DIV I	R 501 N8/5.3	58		185099	A A	1 0		2 1	0 1			33	F	N
E-IR-67+	1	R BLDG INSTRU RACK DIV I	R 548 N8/5.7	58		185099	A A	1 3		2 1	0 1			33	F	N
E-IR-68+	1	R BLDG INSTRU RACK DIV II	R 548 H7/8.1	58		185099	A A	1 0		2 1	0 1			33	F	N
E-IR-69+	1	R BLDG INSTRU RACK DIV II	R 522 N/8.1	58		185099	A A	1 0		2 1	0 1			33	F	N
E-IR-70+	1	RCC INSTRU RACK DIV II	R 522 J/4	58		185099	A A	2 3		2 1	0 1			33	F	N
E-IR-71+	1	R BLDG INSTRU RACK DIV I	R 522 J/6.7	58		185099	A A	2 3		2 1	0 1			33	F	N
E-IR-72+	1	CONT INSTRU AIR INSTRU RACK	R 522 J7/8.3	58		185099	A A	2 3		2 1	0 1			33	F	N
E-IR-73+	1	MSIV LEAKAGE CONTROL IR	R 522 H4/4.2	58		185099	A A	1 0		2 1	0 1			33	F	N
E-IR-74+	1	MSIV LEAKAGE CONTROL IR	R 522 H4/7	58		185099	A A	1 0		2 1	0 1			33	F	N
E-MC-S1/1D+	1	MOTOR CONTROL CENTER S1-1D	W 467 H.9110.5	49	I202	216004	A B	4 3	5640V4C-111SPL-C1090	2 5	0 0			08	F	N
E-MC-S1/2D+	1	MOTOR CONTROL CENTER S1-2S	W 467 H.9110.5	49	I202	216004	A B	4 3	5640V4C-111SPL-C1090	2 5	0 0			08	F	N
E-MC-S2/1A+	1	MOTOR CONTROL CENTER S2-1A	R 471 H.7/7.8	49	I202	216004	A B	1 3	5640V4C-111SPL-C1090	2 5	0 0			08	F	N
E-MC-S2/1AA+	1	DC MOTOR CONTROL CENTER S2/1AA	R 471 H.3/8.3	49	I202		A	1 3	84.5028						F	
E-MC-S2/1AB+	1	DC MOTOR CONTROL CENTER S2/AB	R 471 H.6/7.9	49	I202		A	1 3	84.5028						F	
E-MC-4A+	1	HPCS MOTOR CONTROL CENTER 4A	D 441 Q2/4.1	E22	I147	216002	R B	4 3	C-1007-01						F	
E-MC-7A+	1	MOTOR CONTROL CENTER 7A	W 467 J.8/10.2	49	I202	216003	A B	4 3	5640VB-111C108-C1090	2 5	0 0			08	F	N
E-MC-7AA+	1		D 441 Q.4/6.3	49	I202	216003	A B	4 3	5640VB-111C108-C1090	2 5	0 0			08	F	N
E-MC-7B+	1	MOTOR CONTROL CENTER 7B	R 522 H.5/8.3	49	I202	216003	A B	2 3	5640VB-111C108-C1090	2 5	0 0			08	F	N
E-MC-7BA+	1		W 467 J.8/10.2	49	I202	216003	A B	2 3	5640VB-111C108-C1090	2 5	0 0			08	F	N
E-MC-7BB+	1		R 572 M.4/5.8	49	I202	216003	A B	2 3	5640VB-111C108-C1090	2 5	0 0			08	F	N

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
E-MC-7F+	MOTOR CONTROL CENTER 7F	49	216003	A B	4 3	2 5	0 0			08	F	N
1	W 525 H.4/10.9	I202			5640VB-111C108-C1090							
E-MC-8A+	MOTOR CONTROL CENTER 8A	49	216004	A B	4 3	2 5	0 0			08	F	N
1	W 467 K.9/10.3	I202			5640VB-111SPL-C1090							
E-MC-8AA+		49	216004	A B	4 3	2 5	0 0			08	F	N
1	D 441 Q.218.6	I202			5640VA-111SPL-C1090							
E-MC-8B+	MOTOR CONTROL CENTER 8B	49	216004	A B	2 3	2 5	0 0			08	F	N
1	R 522 N.0/3.5	I202			5640VA-111SPL-C1090							
E-MC-8BA+		49	216004	A B	2 3	2 5	0 0			08	F	N
1	R 522 N.0/3.9	I202			5640VC-111SPL-C1090							
E-MC-8BB+		49	216004	A B	2 3	2 5	0 0			08	F	N
1	R 572 N.78.2	I202			5640VC-111SPL-C1090							
E-MC-8C+	MOTOR CONTROL CENTER 8C	49	216005		2 3						F	N
1	R 501 K.7/3.5	I204			5640-V4C-111C07							
E-MC-8F+	MOTOR CONTROL CENTER 8F	49	216004	A B	4 3	2 5	0 0			08	F	N
1	W 525 K3/11.8	I202			5640V4C-111SPL-C1090							
E-PP-4A+	PP-4A HPCS DG RM PWR PNL	218	252004	A D	4 0	2 1	0 0			10		N
1	D 441 Q4/3.8	S345			QN-02653-28EE1							
E-PP-7A+	PP-7ACRITICAL POWER PANEL	218	252008	A B	4 3	2 1	0 0			10		N
1	W 467 H4/10.2	S345			QNB-02653-1802							
E-PP-7AA+	PP-7A-A	218	252006	A N	4 3	2 1	0 0			10		N
1	W 501 H3/11.3	S345			QN-02653-28EE2							
E-PP-7AB+		218	252011	A D	4 0	2 5	0 0			35		N
1	A 446 C9/3	S345			HCN0936-1MN							
E-PP-7AE+		218	252012	A D	1 3	2 1	0 0			10		N
1	R 474 N2/9.3	S345			QN-02653-28EE6							
E-PP-7AF+		218	252007	A B	4 0	2 1	0 0			10		N
1	W 467 J3/14	S345			QN-02653-28EE7							
E-PP-7AG+		218	252009	A D	4 0							
1	A 441 C.5/3	S345			12-05577-2							
E-PP-8A+	PP-8A CRITICAL POWER PANEL	218	252003	A B	4 3	2 1	0 0			10		N
1	W 467 L1/10.5	S345			QN-02653-1801							
E-PP-8AA+		218	252002	A N	4 0	2 1	0 0			10		N
1	W 501 L9/11.8	S345			QN-02653-EE8							
E-PP-8AB+		218		A	4 0	2 5	0 0			35		N
1	B 446 C.9/2.9	S345			HCN-0936-1HH							
E-PP-8AE+		218	252012	A D	1 3	2 1	0 0			10		N
1	R 474 8.5/N	S345			QN-02653-28EE6							
E-PP-8AF+		218		A D	4 0							
1	W 465 J3/14.7	S345			QN-2653-28EE7							
E-SH-10+		47A	305001	D N	2 3						F	N
1	R 471 L2/9.0	W120			75-DHP-500							
E-SH-11+		47A	305001	D N	2 3						F	N
1	M 522	W120			75-DHP-500							
E-SH-12+		47A	305001	D N	2 3						F	N
1	R 522	W120			75-DHP-500							
E-SH-9+		47A	305001	D N	2 3						F	N
1	R 471 K3/9.0	W120			75-DHP-500							
E-SL-71+		48	308001	A B	4 3	1 4				15	F	N

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
1	W 467 H5/12.7	W120			24Y9836							
E-SL-73+		48	308001	A B	4 3	1 4				06	F	N
1	W 467 N1/12.7	W120			24Y9836							
E-SL-81+		48	308001	A B	4 3	1 4	0 0			15	F	N
1	W 467 L4/13.8	W120			24Y9836							
E-SL-83+		48	308001	A B	4 3	1 4	0 0			15	F	N
1	W 467 L4/14.5	W120			24Y9836							
E-SM-4+		02E22	309001	R B	4 0						F	
1	D 441 Q5/4.4	G080			205AE411							
E-SM-7+		47A	309002	A B	4 3	1 5	0 2			07	F	N
1	W 467 H8/13.6	W120			25Y7913							
E-SM-8+		47A	309002	A B	4 3	1 5	0 2			07	F	N
1	W 467 K7/14.2	W120			25Y7913							
E-TR-ELP8AB		218	350011									
2	T 471 D9/5.5	S245			30T3HF DRG							
E-TR-HPCS4A		02E22	350002	R B								
2	D 441 P.5/4.4	G080			9T25Y3499							
E-TR-T8IN2	15KVA REG XFMR	73			4 3						F	
2	W 467 K5/10.9	S245			850-313-33							
E-TR-T8IN3	15KVA REG XFMR	73			4 3						F	
2	W 467 J.0/10.7	S245			850-313-33							
E-TR-4A	ELP-4A HPCS DG RM POWER PNL TRANS	218	350006	B D	4 0	2 1	0 0			76	F	N
2	D 441 P.1/4.4	S345			123143-14							
E-TR-4AA	HPCS DG RM POWER PNL PP-4A TRANSFE	02E22	350004	R B	4 0						F	
2	D 441 Q.2/4.1	S240			S01F7.5							
E-TR-7/71	4160-480V STA SER TRANSFORMER	48	350012	A B	3 0		0 0				F	N
2	W 467 H.5/13	W120			4845A84							
E-TR-7/73	4160-480V STA SER TRANSFORMER	48	350012	A B	4 3		0 0				F	N
2	W 467 J4/13	W120			4845A84							
E-TR-7A	PP-7A CRIT DIST PNL TRANSFORMER	218	350009	B D	4 3	2 1	0 0			76	F	N
2	W 467 J/10.5	S258			126386-1							
E-TR-7AA	ELP-7A-A TRANSFORMER	218	350006	B D	4 3	2 1	0 0			76	F	N
2	D 441 Q.6/7.3	S345			123143-17							
E-TR-7AAA	POWER PNL PP-7A-A-A TRANSFORMER	218	350008	B D	4 3	2 1	0 0			76	F	N
2	D 441 Q.5/7.3	S345			126382-5							
E-TR-7AB	ELP-7A-B TRANSFORMER	218			4 3						F	
2	T 471											
E-TR-7AF	S W P H 1A DISTR TRANS	218	350016	B D	4 3	2 1	0 0			76	F	N
2	A 441 L.9/2.9	S258			CAT. 15T68F-SPL							
E-TR-7BA	ELP-7B-A TRANSFORMER	218	350005	B D	2 3	2 1	0 0			76	F	N
2	R 606 J.6/3.7	S250			122091-3							
E-TR-7BB	ELP-7B-B TRANSFORMER	218	350017	B D	2 3	2 1	0 0			76	F	N
2	R 478 H.4/3.8	S258			124176-12							
E-TR-8/81	4160V-480V STATION SERVICE TRANSFO	48	350012	A B	4 3		0 0				F	N
2	W 467 L7/13.7	W081			4845A84							
E-TR-8/83	4160V-480V STATION SERVICE TRANSF	48	350012	A B	4 3		0 0				F	N
2	W 467 L7/14.1	W081			4845A84							
E-TR-8A	PP-8A CRIT DIST PNL TRANSFORMER	218	350018	B D	4 3	2 1	0 0			76	F	N
2	W 467 L1/10.5	S258			126386-2							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
E-TR-8AA	ELP-8A-A LTG PNL TRANSFORMER	218	350006	B D	4 3	2 1	0 0			76	F	N
2	D 441 Q.4/9.4	S345			123143-6							
E-TR-8AAA	PP-8A-A-A EMER PWR PNL TRANSFORMER	218	350006	B D	4 3	2 1	0 0			76	F	N
2	D 441 Q.5/9.4	S345			126382-1							
E-TR-8AB	ELP-8A-B EMER PWR PNL TRANSFORMER	218			4 3						F	
2	T 471											
E-TR-8AF	STDBY SERV WTR PMPHSE 1B DISTR TRA	218	350019	B D	4 0	2 1	0 0			76	F	N
2	B 443 C.7.5/2.8	S258			134885-2							
E-TR-8A2C	PP-8A-2CA PWR PNL TRANSFORMER	218	350011	B D	4 3	2 1	0 0			76	F	N
2	W 467 N4/13.3	S258			30T3HF							
E-TR-8BA	ELP-8B-A EMER LTG PNL TRANSFORMER	218	350011	B D	3	2 1	0 0			76	F	N
2	R 616 N.0/9.2	S250			3073HF							
E-TR-8BB	ELP-8B-B EMER LTG PNL TRANSFORMER	218	350007	B D	3	2 1	0 0			76	F	N
2	R 473 N.0/8.4	S258			124176-17							
EDR-LMS-V19	LMS FOR EDR-V-19				1 0							
2	R 468 M.8/4.5											
EDR-LMS-V20	LMS FOR EDR-V-20				1 0							
2	R 468 M.8/4.5											
EDR-LS-1A	LEVEL SWITCH FOR EDR-RO-1A	218		D	3 0							
2	R 525 K.2/9.1	W055			3E187							
EDR-LS-1B	LEVEL SWITCH FOR EDR-RO-1B	218		D	3 0							
2	R 525 L.8/3.4	W055			3E187							
EDR-LS-2A	LEVEL SWITCH FOR EDR-RO-2A	218		D	3 0							
2	R 504 K.2/9.4	W055			3E187							
EDR-LS-2B	LEVEL SWITCH FOR EDR-RO-2B	218		D	3 0							
2	R 503 L.8/3.5	W055			3E187							
EDR-LS-3A	LEVEL SWITCH FOR EDR-RO-3A	218		D	3 0							
2	R 447 M.1/8.0	W055			3E187							
EDR-LS-3B	LEVEL SWITCH FOR EDR-RO-3B	218		D	3 0							
2	R 447 L.8/3.5	W055			3E187							
EDR-SPV-19	PILOT VALVE FOR CONT ISO VLV V-19	58	315004	A N	1 0	2 1	0 0			33+		N
2	R 426 N1/3.6	A499			WJHT831654							
EDR-SPV-20	PILOT VALVE FOR CONT ISO VLV V-20	58	315004	B N	1 0	2 1	0 0			33+		N
2	R 471 N.0/3.9	A499			WJHT831654							
FDR-LMS-3	LMS FOR FDR-V-3	41			2 0							
2	R 467 M.0/4.1	N007			SAI-133							
FDR-LMS-4	LMS FOR FDR-V-4	41			2 0							
2	R 467 M.0/4.1	N007			SAI-133							
FDR-LS-10A	RX BLDG 606 EL DRAIN HDR	218		D	3 0							
2	R 575 N.7/8.3	W055			3E187							
FDR-LS-10B	RX BLDG 606 EL DRAIN HEADER	218		D	3 0							
2	R 576 H.3/7.7	W055			3E187							
FDR-LS-10C	RX BLDG 606 EL HEADER	218		D	3 0							
2	R 576 H.3/4.3	W055			3E187							
FDR-LS-10D	RX BLDG 606 EL DRAIN HEADER	218		D	3 0							
2	R 576 M.0/3.4	W055			3E187							
FDR-LS-11A	RX BLDG 572 EL DRAIN HEADER	218		D	3 0							
2	R 557 N.7/8.0	W055			3E187							
FDR-LS-11B	RX BLDG 572 EL DRAIN HEADER	218		D	3 0							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 557 H.3/3.7	W055			3E187							
FDR-LS-11C	RX BLDG 572 EL DRAIN HEADER	218		D	3 0							
2	R 551 H.3/4.3	W055			3E187							
FDR-LS-11D	RX BLDG 572 EL DRAIN HEADER	218		D	3 0							
2	R 551 H.0/3.4	W055			3E187							
FDR-LS-12A	RX BLDG 548 EL DRAIN HEADER	218		D	3 0							
2	R 525 H.4/9.3	W055			3E187							
FDR-LS-12B	RX BLDG 548 EL DRAIN HEADER	218		D	3 0							
2	R 531 H.3/7.7	W055			3E187							
FDR-LS-12C	RX BLDG 548 EL DRAIN HEADER	218		D	3 0							
2	R 531 H.3/4.3	W055			3E187							
FDR-LS-12D	RX BLDG 548 EL DRAIN HEADER	218		D	3 0							
2	R 531 H.0/3.4	W055			3E187							
FDR-LS-13A	RX BLDG 522 EL DRAIN HEADER	218		D	3 0							
2	R 505 H.0/9.4	W055			3E187							
FDR-LS-13B	RX BLDG 522 EL DRAIN HEADER	218		D	3 0							
2	R 505 J.0/9.4	W055			3E187							
FDR-LS-13C	REACTOR BLDG. FLOOR DRAIN SERVICE	218		D	3 0							
2	R 505 H.3/4.3	W055			3E187							
FDR-LS-13D	RX BLDG 522 EL DRAIN HEADER	218		D	3 0							
2	R 505 H.0/3.4	W055			3E187							
FDR-LS-14A	RX BLDG 501 EL DRAIN HEADER	218		D	3 0							
2	R 476 H.0/9.4	W055			3E187							
FDR-LS-14B	REACTOR BLDG. FLOOR DRAIN SERVICE	218		D	3 0							
2	R 476 J.0/9.4	W055			3E187							
FDR-LS-14C	RX BLDG 501 EL DRAIN HEADER	218		D	3 0							
2	R 476 H.3/4.3	W055			3E187							
FDR-LS-14D	RX BLDG 501 EL DRAIN HEADER	218		D	3 0							
2	R 476 H.0/3.4	W055			3E187							
FDR-LS-15A	RX BLDG 471 EL DRAIN HEADER	218		D	3 0							
2	R 445 H.0/9.4	W055			3E187							
FDR-LS-15B	RX BLDG 471 EL DRAIN HEADER	218		D	3 0							
2	R 445 H.0/9.4	W055			3E187							
FDR-LS-15C	RX BLDG 471 EL DRAIN HEADER	218		D	3 0							
2	R 445 H.3/4.3	W055			3E187							
FDR-LS-15D	RX BLDG 471 EL DRAIN HEADER	218		D	3 0							
2	R 445 H.0/3.4	W055			3E187							
FDR-SPV-3	CONTAINMENT FDR ISOLATION VALVE (X	58	315004	A N	1 0	2 1	0 0			33+		N
2	R 426 N1/3.6	A499			WJHT8344A72							
FDR-SPV-4	SOLENOID PILOT FOR EDR-V-4 IR-65	58	315004	B N	1 0	2 1	0 0			33+		N
2	R 471 N.0/3.9	A499			WJHT831654							
FDR-SPV-601	REACTOR BLDG. AREA DRAINS TO SUMP	58		A N	2 0	2 1	0 0			33+	R	N
2	R 476 H.4/6.8	A499			WJHT831654							
FDR-SPV-602	SOLENOID PILOT FOR FDR-V-602 IR-62	58		A N	2 0	2 1	0 0			33+	R	N
2	R 476 H.4/6.8	A499			WJHT831654							
FDR-SPV-603	SOLENOID PILOT FOR FDR-V-603 IR-61	58		A	2 0							
2	R 427 N.1/3.4	A499			WJHT831654							
FDR-SPV-604	SOLENOID PILOT FOR FDR-V-604 IR-62	58		A N	2 0	2 1	0 0			33+	R	N
2	R 476 H.4/6.8	A499			WJHT8316A76							

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EQUIPMENT NO.	LV	DESCRIPTION	PLANT LOCATION	CONTRACT	MFG	QID	QS	USE	MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
FPC-DPIS-11	2	F/DM BYPASS FLOW CONTROL DP						1 3								
FPC-DPIS-12	2	F/DM BYPASS FLOW CONTROL DP						1 3								
FPC-LIS-1A	2	FPC-TK-1A HIGH-HIGH LEVEL	K.0/6.8	215	M040	198007	B	2 3	S1MD4	2 1	0 0			33+		Y
FPC-LIS-1B	2	FPC-TK-1B HIGH-HIGH LEVEL	M.0/6.8	215	M040	198007	B	2 3	S1MD4	2 1	0 0			33+		Y
FPC-LIS-2A	2	FPC-TK-1A LEVEL CONTROL HIGH SIDE	K.0/6.8	215	M040	198007	B	2 3	S1MD4	2 1	0 0			33+		Y
FPC-LIS-2B	2	FPC-TK-1B LEVEL CONTROL HIGH SIDE	M.0/6.8	215	M040	198007	B	2 3	S1MD4	2 1	0 0			33+		Y
FPC-LIS-3A1	2	FPC-TK-1A LEVEL CONTROL LOW SIDE	K.0/6.9	215	M040	198007	B D	2 3	S1MD4							
FPC-LIS-3A2	2	FPC-TK-1A LOW-LOW LEVEL	K.C/6.9	215	M040	198007	B D	2 3	S1MD4							
FPC-LIS-3B1	2	FPC-TK-1B LEVEL CONTROL LOW SIDE	M.0/6.9	215	M040	198007	B D	2 3	S1MD4							
FPC-LIS-3B2	2	FPC-TK-1B LOW-LOW LEVEL	M.0/6.9	220	M040	198007	B	2 3	S1MD4	2 1	0 0			17		Y
FPC-LS-4	2	FUEL POOL LEVEL						2 3								
FPC-LS-5	2	FUEL POOL LEVEL SWITCH						2 3								
FPC-M-1A	2	50HP/58A MOTOR FOR FPC-P-1A	R 550 M.2/3.5	215	W120	213028	R D	2 3	TADP/326TS							
FPC-M-1B	2	50HP/58A MOTOR FOR FPC-P-1B	R 550 M.2/3.6	215	W120	213028	R D	2 3	TADP/326TS							
FPC-MO-153	2	MO FOR FPC-V-153	R 452 K/7.9	21A	L200	221026		2 3	SMB-000-5							
FPC-MO-154	2	MO FOR FPC-V-154	R 452 J9/8	41A	L200	221026		2 3	SMB-000-5							
FPC-MO-156	2	MO FOR FPC-V-156	R 468 K2/8.2	41A	L200	221007		2 3	SMB-00							
FPC-MO-172	2	MO FOR FPC-V-172	R 471 K9/9	41				2 3								
FPC-MO-173	2	MO FOR FPV-V-173	R 471 K/9.4	41				2 3								
FPC-MO-175	2	MO FOR FPC-V-175	R 548	41	V085			2 3								
FPC-MO-181A	2	MO FOR FPC-V-181A	R 548	41				2 3								
FPC-MO-181B	2	MO FOR FPC-V-181B	R 548	41				2 3								
FPC-MO-184	2	MO FOR FPC-V-184	R 471 L.0/9.4	41				2 3								
FPC-PS-6A	2	PUMP SUCTION PRESSURE P-1A	R 552 J/6.9	58	B070	256035		2 3	D2T-M150SS							
FPC-PS-6B		PUMP SUCTION PRESSURE P-1B		58		256035		2 3								

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 552 N/8.1	B070			02T-M150SS							
FPC-SPV-1	FPC-V-1 F/DM BYPASS				2 3							
2												
FPC-SPV-113	FPC CLEANUP BYPASS SOLENOID OPER.	215	315010	A N	2 3	2 1	0 0			33+	R	N
2	R 525 M.0/8.0	A499			WTHT831654							
FPC-TE-6	MEASURES TEMP OF RECIRC. LINE				2 3							
2												
FPC-TE-7	MEASURES TEMP INSIDE FUEL POOL	215			2 3							
2	R 572											
FPC-TE-8	MEASURES TEMP INSIDE FUEL POOL	215			2 3							
2	R 572											
HPCS-E/S-600	POWER SUPPLY	02E22	105001	R B	4 0						F	
2	W 501 L2/12.4	D110			C-24-53 P/P159C4560							
HPCS-EXC-1C	EXCITER FOR HPCS GENERATOR	02E22	127001	R D	4 0							
2	D 441 P.5/4.4	G080			357930NA159G1							
HPCS-LMS-5	LMS FOR HPCS-V-5 CONT ISOL	69	200007	R D	2 0							
2	C 549 247 D AZ R17	N007			84836-0577							
HPCS-LS-2A	POOL LEVEL HPCS VALVE CNTL	02E22	207004	A D	1 0	1 4	0 0					N
2	R 465 J.5/4.1	M040			3.5-751-1X-MPS-M148Y							
HPCS-LS-2B	POOL LEVEL HPCS VALVE CNTL	02E22	207002	A D	1 0	1 4	0 0					N
2	R 471 M/8.0	M040			159C4294P002							
HPCS-M-1	3000HP/373A MOTOR DRIVER HPCS-P-1	02E22	213013	B N	1 0		0 1					Y
2	R 430 M.0/4.0	G080			SMB-000-25/P128							
HPCS-M-2	60HP/7A MOTOR FOR HPCS-P-2	02E22	213009	R N	4 0							
2	A 441 B3/2.1	G080			5K6257XH672A							
HPCS-M-3	15HP/18A MOTOR FOR HPCS-P-3	35A	213064	R N	1 0							
2	R 430 L.5/3.5	W120			7504786							
HPCS-MO-1	1.6HP 3.4A MOTOR OPER. HPCS-V-1	02E22	221060	B B	1 0	1 4	0 0			33+		N
2	R 435 M.0/4.0	L200			358628B							
HPCS-MO-10	26.0HP MOTOR OPERATOR HPCS-V-10	02E22	221055	N B	2 0	1 4	0 0			33		Y
2	R 451 M/3.8	L200			360044B							
HPCS-MO-11	9.75HP MOTOR OPERATOR HPCS-V-11	02E22	221055	B B	2 0	1 4	0 0			33+		N
2	R 451 M/3.8	L200			360044B							
HPCS-MO-12	5HP 8.4A MOTOR OPER. HPCS-V-12	02E22	221060	B B	1 0	1 4	0 0			33+		N
2	R 430 M/3.4	L200			SMB-2-40/C184Y							
HPCS-MO-15	MOTOR OPERATOR HPCS-V-15	02E22	221060	B B	1 0	1 4	0 0			33+		N
2	R 455 L.4/3.6	L200			SMB-2-60/C184Y							
HPCS-MO-23	9.75HP MOTOR OPERATOR HPCS-V-23	02E22	221055	B B	2 0	1 4	0 0			33+		N
2	R 451 L.6/3.9	L200			SMB-4-150/C215Y							
HPCS-MO-4	26HP 35A MOTOR OPERATOR HPCS-V-4	02E22	221054	B B	1 0	1 4	0 0			33+	P	N
2	R 547 M.3/7.3	L200			SMB-4-200/3264R4							
HPCS-PS-1/DG		02			4 0							
2	D 441 P.9/4.5	B069			E1H-M15V							
HPCS-PS-11/DG		02			4 0							
2	D 441 P.9/4.5	B069			E1H-M250V							
HPCS-PS-12	HPCS-P-1 DISCH H22-P024	02E22	256046	A N	1 0	1 4	0 0			33+		N
2	R 471 L.2/3.9	S382			SN-AA3-X105TT							
HPCS-PS-12/DG		02			4 0							
2	D 441 P.9/4.5	B069			E1H-M250V							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT	MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
HPCS-PS-15/DG		02				4 0							
2	D 441 P.9/4.5		B069			E1H-M250V							
HPCS-PS-16/DG		02				4 0							
2	D 441 P.9/4.5		B069			E1H-M250V							
HPCS-PS-2/DG		02				4 0							
2	D 441 P.9/4.5		B069			E1H-M15V							
HPCS-PS-20/DG		02				4 0							
2	D 441 P.9/4.5		B069			E1H-M15V							
HPCS-PS-22/DG		02				4 0							
2	D 441 P.9/4.5		B069			E1H-M90V							
HPCS-PS-24/DG		02				4 0							
2	D 441 P.9/4.5		B069			E1H-M90V							
HPCS-PS-26/DG	SET AT 1" H20 RISING	02				4 0							
2	D 441 P.9/4.5		E231										
HPCS-PS-27/DG		02				4 0							
2	D 441 P.9/4.5		B069			E1H-M90V							
HPCS-PS-3	HPCS-P-1 SUCTION H22-P024	02E22		256015	R D	1 0							
2	R 471 L.2/3.9		R240			SP-222-C							
HPCS-PS-3/DG		02				4 0							
2	D 441 P.9/4.5		B069			E1H-M90V							
HPCS-PS-30/DG		02				4 0							
2	D 441 P.9/4.5		B069			E1H-M90V							
HPCS-PS-34/DG		02				4 0							
2	D 441 P.9/4.5		B069			E1H-M500V							
HPCS-PS-35/DG		02				4 0							
2	D 441 P.9/4.5		B069			E1H-M500V							
HPCS-PS-36/DG		02				4 0							
2	D 441 P.9/4.5		B069			E1H-M90V							
HPCS-PS-37/DG		02				4 0							
2	D 441 P.9/4.5		B069			E1H-M90V							
HPCS-PS-7/DG		02				4 0							
2	D 441 P.9/4.5		B069			E1H-M15V							
HPCS-PS-8/DG		02				4 0							
2	D 441 P.9/4.5		B069			E1H-M15V							
HPCS-SE-SS1/DGP	MAGNETIC PICK UP					4 0							
2	D 441 P9/4.5												
HPCS-SPV-5	SOLENOID PILOT HPCS-V-5	58			A	3 0	1 4	0.0			33+		N
2	R 506 L.2/4.1		A499			W5NP831654							
HPCS-TE-DG/A		02				4 0							
2	D 441 P.9/4.5		R335			TM-490							
HPCS-TE-DG/B		02				4 0							
2	D 441 P.9/4.5		R335			TM-490							
HPCS-TE-DG/C		02				4 0							
2	D 441 P.9/4.5		R335			TM-490							
HPCS-XE-PYROMTR	PYROMETER	02				0 0							
2	D 441 P.9/4.5		A197			FND							
HPCS-XE-2/15/DG	SYNCHROSCOPE					0 0							
2	D 441 P9/4.5												
HY-M-HP3A1	MOTOR FOR HY-PUMP 1A					3 3							

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EQUIPMENT NO.	DESCRIPTION	CONTRACT	QID	QS	USE	TEST	ANL	F/O	C	FREQ	TM	HL
LV	PLANT LOCATION	MFG			MFG MODEL NO.							
2												
HY-M-HP3A2	MOTOR FOR HY-PUMP 2A				3 3							
2												
HY-M-HP3B1	MOTOR FOR HY-PUMP 1B				3 3							
2												
HY-M-HP3B2	MOTOR FOR HY-PUMP 2B				3 3							
2												
HY-SPV-17A	0.75"PILOT VLVE HY-V-18B				3 3							
2	R 523 M/4.5											
HY-SPV-17B					3 3							
2	R 523 J.8/7.3											
HY-SPV-18A	0.75"PILOT VLVE HY-V-18A				3 3							
2	R 523 M/4.5											
HY-SPV-18B					3 3							
2	R 523 J.8/7.3											
HY-SPV-19A	0.75"PILOT VLVE HY-V-19A				3 3							
2	R 523 M/4.5											
HY-SPV-19B	0.75"PILOT VLVE HY-V-19B				3 3							
2	R 523 J.8/7.3											
HY-SPV-20A	0.75"PILOT VLVE HY-V-20A				3 3							
2	R 523 M/4.5											
IRM-DET-2A	INTER RGE DET IRM DETECT	02C51	067001	B D	1 3	1 4	0 0			04		N
2	C IN RPV	G080			112C3144G8							
IRM-DET-2B	INTER RGE DET IRM DETECT	02C51	067001	B D	1 3	1 4	0 0			04		N
2	C IN RPV	G080			112C3144G8							
IRM-DET-2C	INTER RGE DET IRM DETECT	02C51	067001	B D	1 3	1 4	0 0			04		N
2	C IN RPV	G080			112C3144G8							
IRM-DET-2D	INTER RGE DET IRM DETECT	02C51	067001	B D	1 3	1 4	0 0			04		N
2	C IN RPV	G080			112C3144G8							
IRM-DET-2E	INTER RGE DET IRM DETECT	02C51	067001	B D	1 3	1 4	0 0			04		N
2	C IN RPV	G080			112C3144G8							
IRM-DET-2F	INTER RGE DET IRM DETECT	02C51	067001	B D	1 3	1 4	0 0			04		N
2	C IN RPV	G080			112C3144G8							
IRM-DET-2G	INTER RGE DET IRM DETECT	02C51	067001	B D	1 3	1 4	0 0			04		N
2	C IN RPV	G080			112C3144G8							
IRM-DET-2H	INTER RGE DET IRM DETECT	02C51	067001	B D	1 3	1 4	0 0			04		N
2	C IN RPV	G080			112C3144G8							
LD-DFS-635A	LD RWCU SYS ISOL SIGNAL	02E31	068001	A B	4 0	1 4	0 0			33+		N
2	W 501 J6/12	G080			745							
LD-DFS-605B	LD RWCU SYS ISOL SIGNAL	02E31	068001	A B	4 0	1 4	0 0			33+		N
2	W 501 K6/12	G080			745							
LD-DTRS-611	EQPT AREA DIFF TEMP RECORD (P632)	02			4 0							
2	W 501 H9/12.2	L130										
LD-E/S-600	LD POWER SUPPLY (RWCU) ON H13-P632	02E31	105002	A B	4 0	2 1	0 0			33+	F	N
2	W 501 J6/12	G080			9T66Y987G031							
LD-SPV-1					4 0							
2	W 501 J6/12											
LD-SPV-5A	3/4" SOL VALVE MS-V-22A				3 0							
2	C 508 10	M095			282023							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
LD-SPV-5AA	3/4" SOL VALVE RWCU-V-102				3 0							
2	C 501 60	M095			282023							
LD-SPV-5B	3/4" SOL VALVE MS-V-22B				3 0							
2	C 508 50	M095			282023							
LD-SPV-5BB	3/4" SOL VALVE RWCU-V-106				3 0							
2	C 501 30	M095			282023							
LD-SPV-5C	3/4" SOL VALVE MS-V-22C				3 0							
2	C 509 340	M095			282023							
LD-SPV-5CC	3/4" SOL VALVE LPCS-V-6				3 0							
2	C 547 0	M095			282023							
LD-SPV-5D	3/4" SOL VALVE MS-V22D				3 0							
2	C 509 350	M095			282023							
LD-SPV-5DD	3/4" SOL VALVE RCIC-V-66				3 0							
2	C 579	M095			282023							
LD-SPV-5E	3/4" SOL VALVE RRC-V-23A				3 0							
2	C 504	M095			282023							
LD-SPV-5EE	3/4" SOL VALVE MS-V-16				3 0							
2	C 503 25	M095			282023							
LD-SPV-5F	3/4" SOL VALVE RRC-V-23B				3 0							
2	C 505 315	M095			282023							
LD-SPV-5FF	3/4" SOL VALVE				3 0							
2	C 501 360											
LD-SPV-5G	3/4" SOL VALVE RRC-V-60A				3 0							
2	C 507 120	M095			282023							
LD-SPV-5H	3/4" SOL VALVE RRC-V-60B				3 0							
2	C 504 290	M095			282023							
LD-SPV-5L	3/4" SOL VALVE RRC-V-67A				3 0							
2	C 507 90	M095			282023							
LD-SPV-5M	3/4" SOL VALVE RRC-V-67B				3 0							
2	C 507 280	M095			282023							
LD-SPV-5N	3/4" SOL VALVE RHR-V-9				3 0							
2	C 508 180	M095			282023							
LD-SPV-5Q	3/4" SOL VALVE RHR-V-41A				3 0							
2	C 557 20	M095			282023							
LD-SPV-5R	3/4" SOL VALVE RHR-V-41B				3 0							
2	C 562 170	M095			282023							
LD-SPV-5S	3/4" SOL VALVE RHR-V-41C				3 0							
2	C 557 330	M095			282023							
LD-SPV-5T	3/4" SOL VALVE RHR-V-50A				3 0							
2	C 509 90	M095			282023							
LD-SPV-5U					3 0							
2	506	M095			282023							
LD-SPV-5V	3/4" SOL VALVE HPCS-V-5				3 0							
2	C 547 270	M095			282023							
LD-SPV-5W	3/4" SOL VALVE RCIC-V-63				3 0							
2	C 548 100	M095			282023							
LD-SPV-5X	3/4" SOL VALVE RWCU-V-1				3 0							
2	C 540 160	M095			282023							
LD-SPV-5Y	3/4" SOL VALVE RWCU-V-100				3 0							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	C 5?1 160	M095			292023							
LD-SPV-5Z	3/4" SOL VALVE RWCU-V-101			B B	3 0							
2	C 515 60	M095			282023							
LD-TE-1A	LD TE RWCU PMP RM 1 INLET VENT	02E31	339012	B B	3 0		0 1			99+	W	N
2	R 532 M.9/4.8	M225			5641-R-DACAB							
LD-TE-1B	LD TE RWCU PMP RM 1 INLET VENT	02E31	339012	B B	3 0		0 1			99+	W	N
2	R 532 M.6/4.2	M225			5641-R-DACAB							
LD-TE-1C	LD TE RWCU PMP RM 2 INLET VENT	02E31	339012	B B	3 0		0 1			99+	W	N
2	R 532 M.5/5.0	M225			5641-R-DACAB							
LD-TE-1D	LD TE RWCU PMP RM 2 INLET VENT	02E31	339012	B B	3 0		0 1			99+	W	N
2	R 532 M.2/5.4	M225			5641-R-DACAB							
LD-TE-1E	LD TE RWCU HEAT EXCH RM INLET VENT	02E31	339005	B B	3 0		0 1			99+		N
2	R 554 3.4/K.1	P427			N145C3224P1							
LD-TE-1F	LD TE RWCU HEAT EXCH RM INLET VENT	02E31	339005	B B	3 0		0 1			99+		N
2	R 554 3.4/K.1	P427			N145C3224P1							
LD-TE-16A1	MS-V-22A LEAK OFF	215		B	3 0						P	
2	C 506 78 D AZ R16	H329			A-10402							
LD-TE-16A2	MS-V-22B LEAK OFF	215	339008	B	3 0						P	
2	C 506 78 D AZ R16	H329			A-10402							
LD-TE-16A3	MS-V-22C LEAK OFF	215	339008	B	3 0						P	
2	C 507 337 D AZ R21	H329			A-10402							
LD-TE-16A4	MS-V-22D LEAK OFF	215	339008	B	3 0						P	
2	C 507 337 D AZ R21	H329			A-10402							
LD-TE-16A5	MS-V-16 LEAK OFF	215	339008	B	3 0						P	
2	C 507 337 D AZ R21	H329			A-10402							
LD-TE-16B1	RRC-V-23A LEAK OFF	215	339008	B	3 0						P	
2	C 503 160 D AZ R22	H329			A-10402							
LD-TE-16B2	RCC-V-23B LEAK OFF	215	339008	B	3 0						P	
2	C 505 307 D AZ R16	H329			A-10402							
LD-TE-16B3	RCC-V-60A LEAK OFF	215	339008	B	3 0						P	
2	R	H329			A-10402							
LD-TE-16B4	RCC-V-60B LEAK OFF	215		B	3 0						P	
2	R	H329			A-10402							
LD-TE-16B7	RRC-V-67A LEAK OFF	215		B	3 0						P	
2	C 505 100 D AZ R16	H329			A-10402							
LD-TE-16B8	RRC-V-67B LEAK OFF	215		B	3 0						P	
2	C 505 291 D AZ R18	H329			A-10402							
LD-TE-16C1	RHR-V-9 LEAK OFF	215	339008	B	2 0						P	
2	C 507 159 D AZ R25	H329			A-10402							
LD-TE-16C2		215		B	2 0							
2		H329										
LD-TE-16C4	RHR-V-41B LEAK OFF	215	339008	B	2 0							
2	C	H329			A-10402							
LD-TE-16C5	RHR-V-41C LEAK OFF	215	339008	B	2 0						P	
2	C 55C 338 D AZ R18	H329			A-10402							
LD-TE-16C6	RHR-V-50A LEAK OFF	215	339008	B	2 0						P	
2	C 506 78 D AZ R20	H329			A-10402							
LD-TE-16C7	RHR-V-50B LEAK OFF	215	339008	B	2 0						P	
2	C 503 280 D AZ R20	H329			A-10402							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE TEST / MFG MODEL NO.	ANL	F/O	C	FREQ	TM	HL
LD-TE-16D1	HPCS-V-5 LEAK OFF	215		B	2 0					P	
2	C 546 247 D AZ R16	H329			A-10402						
LD-TE-16E1	RCIC-V-63 LEAK OFF	215		B	2 0					P	
2	C 545 158 D AZ R18	H329			A-10402						
LD-TE-16E2	RCIC-V-66 LEAK OFF	215		B	2 0					P	
2	C 578 150 D AZ R14	H329			A-10402						
LD-TE-16F1	RWCV-V-100 LEAK OFF	215		B	2 0					P	
2	C	H329			A-10402						
LD-TE-16F2	RWCV-V-1 LEAK OFF	215		B	3 0					P	
2	C 502 78 D AZ R16	H329			A-10402						
LD-TE-16F3	RWCV-V-101 LEAK OFF	215		B	3 0					P	
2	C 506 80 D AZ R16	H329			A-10402						
LD-TE-16F4	RWCV-V-102 LEAK OFF	215		B	3 0					P	
2	C 502 78 D AZ R16	H329			A-10402						
LD-TE-16F5	RWCV-V-106 LEAK OFF	215		B	3 0					P	
2	C 502 65 D AZ R16	H329			A-10402						
LD-TE-16G1	LPCS-V-6 LEAK OFF	215		B	2 0					P	
2	C 545 160 D AZ R16	H329			A-10402						
LD-TE-18A	LD TE RHR EQUIP AREA AMB TEMP	02E31	339016	B B	2 0	0 1			99+		N
2	R 468 M.7/9.0	P427			282-N1A72						
LD-TE-18B	LD TE RHR EQUIP AREA AMB TEMP	02E31	339016	B B	2 0	0 1			99+		N
2	R 465 K.0/9.0	P427			P427282-N1A72						
LD-TE-18C	LD TE RHR EQUIP AREA AMB TEMP	02E31	339016	B B	2 0	0 1			99+		N
2	R 468 M.7/9.0	P427			282-N1A72						
LD-TE-18D	LD TE RHR EQUIP AREA AMB TEMP	02E31	339016	B B	2 0	0 1			99+		N
2	R 465 K.0/9.0	P427			282-N1A72						
LD-TE-2A	LD TE RWCU PMP RM 1 OUTLET VENT	02E31	339017	B B	2 0	0 1			99+	W	N
2	R 532 M.4/4.7	P427			102						
LD-TE-2B	LD TE RWCU PMP RM 1 OUTLET VENT	02E31	339017	B B	3 0	0 1			99+	W	N
2	R 532 M.4/4.7	P427			102						
LD-TE-2C	LD TE RWCU PMP RM 2 OUTLET VENT	02E31	339017	B B	3 0	0 1			99+	W	N
2	R 532 M.8/5.4	P427			102						
LD-TE-2D	LD TE RWCU PMP RM 2 OUTLET VENT	02E31	339017	B B	3 0	0 1			99+	W	N
2	R 532 M.8/5.4	P427			102						
LD-TE-2E	LD TE RWCU HEAT EXCH RM OUTLET VEN	02E31	339015	B B	3 0	0 1			99+		N
2	R 570 4.4/L.9	P427			288F9T34						
LD-TE-2F	LD TE RWCU HEAT EXCH RM OUTLET VEN	02E31	339015	B B	3 0	0 1			99+		N
2	R 570 4.4/L.9	P427			288F9T34						
LD-TE-24A	LD TE RCIC PIPE ROUTING AREA AMB	02E31	339005	B B	3 0	0 1			99+		N
2	R 467	N070			N145C3224P1						
LD-TE-24B	LD TE RCIC PIPE ROUTING AREA AMB	02E31	339005	B B	3 0	0 1			99+		N
2	R 467	N070			N145C3224P1						
LD-TE-25A	LD TE RCIC PIPE ROUTE INLET VENT	02E31	339005	B B	3 0	0 1			99+		N
2	R 436	N070			N145C3224P1						
LD-TE-25B	LD TE RCIC PIPE ROUTE INLET VENT	02E31	339005	B B	3 0	0 1			99+		N
2	R 436	N070			N145C3224P1						
LD-TE-26A	LD TE RCIC PIPE ROUTE OUTLET VENT	02E31	339005	B B	3 0	0 1			99+		N
2	R 467	N070			N145C3224P1						
LD-TE-26B	LD TE RCIC PIPE ROUTE OUTLET VENT	02E31	339005	B B	3 0	0 1			99+		N

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 467	N070			N145C3224P1							
LD-TE-27A	LD TE RHR EQUIP AREA INLET VENT	02E31	339005	B B	2 0		0 1			99+		N
2	R 432 L5/9.4	N070			N145C3224P1							
LD-TE-27B	LD TE RHR EQUIP AREA INLET VENT	02E31	339005	B B	2 0		0 1			99+		N
2	R 432 K9/9.4	N070			N145C3224P1							
LD-TE-27C	LD TE RHR EQUIP AREA INLET VENT	02E31	339005	B B	2 0		0 1			99+		N
2	R 432 L5/9.4	N070			N145C3224P1							
LD-TE-27D	LD TE RHR EQUIP AREA INLET VENT	02E31	339005	B B	2 0		0 1			99+		N
2	R 432 K9/9.4	N070			N145C3224P1							
LD-TE-28A	LD TE RHR EQUIP AREA OUTLET VENT	02E31	339014	B B	2 0		0 1			99+		N
2	R 461 L3/9.3	P427			282F9T37							
LD-TE-28B	LD TE RHR EQUIP AREA OUTLET VENT	02E31	339017	B B	2 0		0 1			99+		N
2	R 465 K.9/9.3	P427			102-9038-08-0042							
LD-TE-28C	LD TE RHR EQUIP AREA OUTLET VENT	02E31	339014	B B	2 0		0 1			99+		N
2	R 461 L3/9.3	P427			282F9T37							
LD-TE-28D	LD TE RHR EQUIP AREA OUTLET VENT	02E31	339017	B B	2 0		0 1			99+		N
2	R 465 K.9/9.3	P427			102-9037-08-00427							
LD-TE-29A	LD TE MN STM LINE TUNNEL INLET VEN	02E31	339005	B B	3 0		0 1			99+		N
2	R 515 H3/5.6	N070			N145C3224P1							
LD-TE-29B	LD TE MN STM LINE TUNNEL INLET VEN	02E31	339005	B B	3 0		0 1			99+		N
2	R 515 H3/5.9	N070			N145C3224P1							
LD-TE-29C	LD TE MN STM LINE TUNNEL INLET VEN	02E31	339005	B B	3 0		0 1			99+		N
2	R 515 H3/6	N070			N145C3224P1							
LD-TE-29D	LD TE MN STM LINE TUNNEL INLET VEN	02E31	339005	B B	3 0		0 1			99+		N
2	R 515 H3/6.5	N070			N145C3224P1							
LD-TE-3A	LD TE RWCU PMP RM 1	02E31	339017	B B	3 0		0 1			99+		N
2	R 532 M.3/4.6	P427			102							
LD-TE-3B	LD TE RWCU PMP RM 1	02E31	339017	B B	3 0		0 1			99+	W	N
2	R 532 M.3/4.6	P427			102							
LD-TE-3C	LD TE RWCU PMP RM 2	02E31	339017	B B	3 0		0 1			99+	W	N
2	R 532 M.9/5.6	P427			102							
LD-TE-3D	LD TE RWCU PMP RM 2	02E31	339017	B B	3 0		0 1			99+	W	N
2	R 532 P.9/5.6	P427			102							
LD-TE-3E	LD TE RWCU HEAT EXCH RM	02E31	339015	B B	3 0		0 1			99+		N
2	R 570 4/L	P427			288F9T34							
LD-TE-3F	LD TE RWCU HEAT EXCH RM	02E31	339015	B B	3 0		0 1			99+		N
2	R 570 4.0/L.0	R427			288F9T34							
LD-TE-30A	LD TE MN STM LINE TUNNEL OUTLET V	02E31	339013	B B	3 0		0 1			99+	W	N
2	R 528 J.0/6.0	P427			GE-282-N1A02							
LD-TE-30B	LD TE MN STM LINE TUNNEL OUTLET V	02E31	339013	B B	3 0		0 1			99+	W	N
2	R 528 J.0/6.0	P427			GE-282-N1A02							
LD-TE-30C	LD TE MN STM LINE TUNNEL OUTLET V	02E31	339013	B B	3 0		0 1			99+	W	N
2	R 528 J.0/6.0	P427			GE-282-N1A02							
LD-TE-30D	LD TE MN STM LINE TUNNEL OUTLET V	02E31	339013	B B	3 0		0 1			99+	W	N
2	R 528 J.0/6.0	P427			GE-282-N1A02							
LD-TE-31A	LD TE MN STM LINE TUNNEL AMB TEMP	02E31	339004	B B	3 0		0 1			99+		N
2	R 515 H4/5.5	N070			N145C3224P001							
LD-TE-31B	LD TE MN STM LINE TUNNEL AMB TEMP	02E31	339004	B B	3 0		0 1			99+		N
2	R 515 H4/5.6	N070			N145C3224P001							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
LD-TE-31C	LD TE MN STM LINE TUNNEL AMB TEMP	02E31	339004	B B	3 0		0 1			99+		N
2	R 515 H4/6.4	N070			N145C3224P001							
LD-TE-31D	LD TE MN STM LINE TUNNEL AMB TEMP	02E31	339004	B B	3 0		0 1			99+		N
2	R 515 H4/6.1	N070			N145C3224P001							
LD-TE-4A	LD TE RCIC EQUIP AREA	02E31	339016	B B	3 0		0 1			99+		N
2	R 460 J.0/7.5	P427			282-N1A72							
LD-TE-4B	LD TE RCIC EQUIP AREA	02E31	339016	B B	3 0		0 1			99+		N
2	R 460 J.0/7.5	P427			282-N1A72							
LD-TE-5A	LD TE RCIC EQUIP AREA INLET VENT	02E31	339005	B B	3 0		0 1			99+		N
2	R 436	N070			N145C3224P1							
LD-TE-5B	LD TE RCIC EQUIP AREA INLET VENT	02E31	339005	B B	3 0		0 1			99+		N
2	R 436	N070			N145C3224P1							
LD-TE-6A	LD-TE RCIC EQUIP AREA OUTLET VENT	02E31		B B	2 0		0 1			99+		N
2	R 460 H.4/7.5	P427			282-N1A72							
LD-TE-6B	LD-TE RCIC EQUIP AREA OUTLET VENT	02E31	339016	B B	2 0		0 1			99+		N
2	R 460 H.4/7.5	P427			282-N1A72							
LD-XE-E31A/Z4A	TEMP INDICATOR/METER MODULE	02E31	383001		4 0							
2	W 501 J6/12	S054			MODEL 86							
LD-XE-E31A/Z4B	TEMP IND/METER MODULE	02E31			4 0							
2	W 501 K.6/1.2	S054			86							
LPCS-LPS-5	LIMIT SWITCH		200009		2 0							
2	C 554 110 D AZ R16	N007			D2400X-2							
LPCS-LPS-6	LIMIT SWITCH	69	200003	P D	2 0							
2	C 547 124 D AZ R16	N007										
LPCS-M-1	1500HP/192A MOTOR DIRVER LPCS-P-1	02E21	213023	B N	1 0		0 1					Y
2	R 429 K.4/3.8	G082			SK437X665A							
LPCS-M-2	15HP/20A MTR FOR LPCS-P-2 WATERLEG	02E21	213064	R D	1 0							
2	R 421 J.7/3.6	W120			75040786							
LPCS-MC-1	1.62HP MOTOR OPERATOR LPCS-V-1	41A	221051	A B	1 0	1 4	0 0			35		Y
2	R 460 K/4.1	L200			SMB-0-40/T56							
LPCS-MC-11	MOTOR OPERATOR LPCS-FCV-11	02E21	221066	R B	1 0							
2	R 425 K.2/3.5	L200			SMB-000-3/K48							
LPCS-MC-12	3.89HP MOTOR OPERATOR LPCS-V-12	41B	221051	A B	1 0	1 4	0 0			37		Y
2	R 460 K/4.1	L200			SMB-3-60/184R							
LPCS-MC-5	9.75HP MOTOR OPERATOR LPCS-V-5	41A	221062	A B	1 0	1 4	0 0			37		Y
2	R 530 L.8/4.3	L200			SMB-3-100/254UR3							
LPCS-PS-1	LPCS-P-T DISCHARGE		256007	A	1 0	1 4	0 0			33+		N
2	P 471 K.0/4.2	R290										
LPCS-PS-5	LPCS-P-1 DISCHARGE H22-P001	02H22	256015	A N	1 0	1 4	0 0			33+		N
2	P 471 K/4.2	R290			SP-222-C							
LPCS-PS-9	LPCS PUMP DISCHARGE PS TO ADS	02E21	256007	A N	1 0	1 4	0 0			33+		N
2	R 471 K/4.2	B069			PIH-M600SS-V							
LPCS-SPV-6	SOLENOID PILOT LPCS-V-6 IR-66	2			4 0							
2	R 501	B045			766000AAAA/WAN							
LPRM-DET-1	PWR RGE DET ASSM	02B13	067002	R D	3 0							
2	C IN RPV	G080			163C1154G1							
LPRM-DET-10	PWR RGE DET ASSM	02B13	067002	R D	3 0							
2	C IN RPV	G080			163C1154G1							
LPRM-DET-11	PWR RGE DET ASSM	02B13	067002	R D	3 0							

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WASHINGTON PUBLIC POWER SUPPLY SYSTEM
CLASS 1E EQUIPMENT LIST FOR NRC-SQRT

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION		CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	C	IN RPV	G080			163C1154G1							
LPRM-DET-12	PWR RGE DET ASSM		02B13	067002	R D	3 0							
2	C	IN RPV	G080			163C1154G1							
LPRM-DET-13	PWR RGE DET ASSM		02B13	067002	R D	3 0							
2	C	IN RPV	G080			163C1154G1							
LPRM-DET-14	PWR RGE DET ASSM		02B13	067002	R D	3 0							
2	C	IN RPV	G080			163C1154G1							
LPRM-DET-15	PWR RGE DET ASSM		02B13	067002	R D	3 0							
2	C	IN RPV	G080			163C1154G1							
LPRM-DET-16	PWR RGE DET ASSM		02B13	067002	R D	3 0							
2	C	IN RPV	G080			163C1154G1							
LPRM-DET-17	PWR RGE DET ASSM		02B13	067002	R D	3 0							
2	C	IN RPV	G080			163C1154G1							
LPRM-DET-18	PWR RGE DET ASSM		02B13	067002	R D	3 0							
2	C	IN RPV	G080			163C1154G1							
LPRM-DET-19	PWR RGE DET ASSM		02B13	067002	R D	3 0							
2	C	IN RPV	G080			163C1154G1							
LPRM-DET-2	PWR RGE DET ASSM		02B13	067002	R D	3 0							
2	C	IN RPV	G080			163C1154G1							
LPRM-DET-20	PWR RGE DET ASSM		02B13	067002	R D	3 0							
2	C	IN RPV	G080			163C1154G1							
LPRM-DET-21	PWR RGE DET ASSM		02B13	067002	R D	3 0							
2	C	IN RPV	G080			163C1154G1							
LPRM-DET-22	PWR RGE DET ASSM		02B13	067002	R D	3 0							
2	C	IN RPV	G080			163C1154G1							
LPRM-DET-23	PWR RGE DET ASSM		02B13	067002	R D	3 0							
2	C	IN RPV	G080			163C1154G1							
LPRM-DET-24	PWR RGE DET ASSM		02B13	067002	R D	3 0							
2	C	IN RPV	G080			163C1154G1							
LPRM-DET-25	PWR RGE DET ASSM		02B13	067002	R D	3 0							
2	C	IN RPV	G080			163C1154G1							
LPRM-DET-26	PWR RGE DET ASSM		02B13	067002	R D	3 0							
2	C	IN RPV	G080			163C1154G1							
LPRM-DET-27	PWR RGE DET ASSM		02B13	067002	R D	3 0							
2	C	IN RPV	G080			163C1154G1							
LPRM-DET-28	PWR RGE DET ASSM		02B13	067002	R D	3 0							
2	C	IN RPV	G080			163C1154G1							
LPRM-DET-29	PWR RGE DET ASSM		02B13	067002	R D	3 0							
2	C	IN RPV	G080			163C1154G1							
LPRM-DET-3	PWR RGE DET ASSM		02B13	067002	R D	3 0							
2	C	IN RPV	G080			163C1154G1							
LPRM-DET-30	PWR RGE DET ASSM		02B13	067002	R D	3 0							
2	C	IN RPV	G080			163C1154G1							
LPRM-DET-31	PWR RGE DET ASSM		02B13	067002	R D	3 0							
2	C	IN RPV	G080			163C1154G1							
LPRM-DET-32	PWR RGE DET ASSM		02B13	067002	R D	3 0							
2	C	IN RPV	G080			163C1154G1							
LPRM-DET-33	PWR RGE DET ASSM		02B13	067002	R D	3 0							
2	C	IN RPV	G080			163C1154G1							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MEG	QID	QS	USE / MEG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
LPRM-DET-34	PWR RGE DET ASSM	02B13	067002	R D	3 0							
2	C IN RPV	G080			163C1154G1							
LPRM-DET-35	PWR RGE DET ASSM	02B13	067002	R D	3 0							
2	C IN RPV	G080			163C1154G1							
LPRM-DET-36	PWR RGE DET ASSM	02B13	067002	R D	3 0							
2	C IN RPV	G080			163C1154G1							
LPRM-DET-37	PWR RGE DET ASSM	02B13	067002	R D	3 0							
2	C IN RPV	G080			163C1154G1							
LPRM-DET-38	PWR RGE DET ASSM	02B13	067002	R D	3 0							
2	C IN RPV	G080			163C1154G1							
LPRM-DET-39	PWR RGE DET ASSM	02B13	067002	R D	3 0							
2	C IN RPV	G080			163C1154G1							
LPRM-DET-4	PWR RGE DET ASSM	02B13	067002	R D	3 0							
2	C IN RPV	G080			163C1154G1							
LPRM-DET-40	PWR RGE DET ASSM	02B13	067002	R D	3 0							
2	C IN RPV	G080			163C1154G1							
LPRM-DET-41	PWR RGE DET ASSM	02B13	067002	R D	3 0							
2	C IN RPV	G080			163C1154G1							
LPRM-DET-42	PWR RGE DET ASSM	02B13	067002	R D	3 0							
2	C IN RPV	G080			163C1154G1							
LPRM-DET-43	PWR RGE DET ASSM	02B13	067002	R D	3 0							
2	C IN RPV	G080			163C1154G1							
LPRM-DET-44		02B13		R D	3 0							
2	C IN RPV	G080				A						
LPRM-DET-45		02B13		R D	3 0							
2	C IN RPV	G080				A						
LPRM-DET-46		02B13		R D	3 0							
2	C IN RPV	G080				A						
LPRM-DET-47		02B13		R D	3 0							
2	C IN RPV	G080				A						
LPRM-DET-48		02B13		R D	3 0							
2	C IN RPV	G080				A						
LPRM-DET-49		02B13		R D	3 0							
2	C IN RPV	G080				A						
MS-DPT-32	MAIN STEAM DIFF PRESS RPV	2										
2	R 472 J.6/2.9	G080			C555011NAA4WCA							
MS-E/S-613A	POWER SUPPLY H13-P612	02	105003		4 3							
2	W 501 J1/12.4	G080			9T664987603							
MS-E/S-613B	POWER SUPPLY H13-P613	02	105003		4 3							
2	W 501 K9/12	G080			9T664987603							
MS-FT-33A	MS FLOW - - H22-P010	02	156008		2 3							
2	R 471 M5/4.5	G082			4WCH							
MS-FT-33B	MS FLOW - - H22-P009	2	156003		2 3							
2	R 471 J6/8.1	G082			50555111BNAAWCA							
MS-FT-33C	MS FLOW - - H22-P010	02	156007		2 3							
2	R 471 M.5/4.5	G082			4EAH							
MS-FT-33D	MS FLOW - - H22-P009	2	156003		2 3							
2	R 471 J6/8.1	G082			50555111BNAAWCH							
MS-FT-34A	NB-JP-1 FLOW TRANSMITTER	02			2 3	I R H	2 2	P 0	1		F	-

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EQUIPMENT NO.	DESCRIPTION	CONTRACT	QID	QS	USE	TEST	ANL	F/O	C	FREQ	TM	HL
LV	PLANT LOCATION	MFG			MFG MODEL NO.							
2	R 471 M.7/4.4	G080			555111BNAAWCA							
MS-FT-34B	NB-JP-11 FLOW TRANSMITTER	02			2 3	I R H	2 2	P 0	0		F	-
2	R 471 P.7/4.4	G080			555111BNAA4WCA							
MS-FT-34C	NB-JP-2 FLOW TRANSMITTER	02			2 3	I R H	2 2	P 0	1		F	-
2	R 471 M.7/4.4	G080			555111BNAAWCA							
MS-FT-34D	NB-JP-12 FLOW TRANSMITTER	02			2 3	I R H	2 2	P 0	0	TRA	F	-
2	R 471 M.7/4.4	G080			555111BNAA4WCA							
MS-FT-34E	NB-JP-3 FLOW TRANSMITTER	02			2 3	I R H	2 2	P 0	1		F	-
2	R 471 M.7/4.4	G080			555111BNAA4EAE							
MS-FT-34F	NB-JP-13 FLOW TRANSMITTER	02			2 3	I R H	2 2	P 0	0		F	-
2	R 471 M.7/4.4	G080			555111BNAA4WCA							
MS-FT-34G	NB-JP-4 FLOW TRANSMITTER	02	156007		2 3							
2	R 471 M.5/4.5	G082			4EAH							
MS-FT-34H	NB-JP-14 FLOW TRANSMITTER	02	156003		2 3							
2	R 471 J6/8.1	G082			50555111BNAA4WCA							
MS-FT-34J	NB-JP-5 FLOW TRANSMITTER	02	156007		2 3							
2	R 471 M.5/4.5	G082			4EAH							
MS-FT-34K	NB-JP-15 FLOW TRANSMITTER	02	156003		2 3							
2	R 471 J6/8.1	G082			50555111BNAA4WCA							
MS-FT-34L	NB-JP-6 FLOW TRANSMITTER H22-P010	02	156007		2 3							
2	R 471 M.5/4.5	G082			4EAH							
MS-FT-34M	NB-JP-16 FLOW TRANSMITTER	02	156003		2 3							
2	R 471 J6/8.1	G082			50555111BNAA4WCA							
MS-FT-34N	NB-JP-7 FLOW TRANSMITTER H22-P010	02	156007		2 3							
2	R 471 M.5/4.5	G082			4EAH							
MS-FT-34P	NB-JP-17 FLOW TRANSMITTER	02			2 3							
2	R 471 M.5/4.5	G082			555111BNAA4WCA							
MS-FT-34R	NB-JP-8 FLOW TRANSMITTER H22-P010	02	156007		2 3							
2	471 M.5/4.5	G082			4EAH							
MS-FT-34S	NB-JP-18 FLOW TRANSMITTER	02			2 3							
2	R 471 M.7/4.4	G082			555111BNAA4WCA							
MS-FT-34T	NB-JP-9 FLOW TRANSMITTER H22-P010	02	156007		2 3							
2	471 M.5/4.5	G082			4EAH							
MS-FT-34U	NB-JP-19 FLOW TRANSMITTER	02			2 3							
2	R 471 J.7/8.0	G082			555111BNAA4WCA							
MS-FT-34V	NB-JP-10 FLOW TRANSMITTER H22-P010	02	156007		2 3							
2	R 471 M.5/4.5	G082			4EAH							
MS-FT-34W	MS FLOW - - H22-P009	02			2 3							
2	R	G080			555111BNAAA4WCA							
MS-LIS-24A	REACTOR LEVEL 3 AND 8 TRIPS	02B22	198003	A N	1 0	1 4	0 0			33+	F	N
2	R 525 H.4/7.1	I204			16483							
MS-LIS-24B	MS LEVEL H22-P027	02B22	198001	A N	1 0	1 4	0 0			33+		N
2	R 527 N7/6.8	B080			288A							
MS-LIS-24C	MS LEVEL H22-P005	02B22	198004	A N	1 0	1 4	0 0			33+		N
2	R 526 N8/5.8	I204			228535-1							
MS-LIS-24D	MS LEVEL H22-P026	02B22	198005	A N	1 0	1 4	0 0			33+	F	N
2	R 530 J.9/4.5	I204			159C843010							
MS-LIS-31A	VESSEL LEVEL FOR HPCS H22-P004	02B22	198001	N N	1 0						F	
2	R 525 4.5/7.4	B080			288A							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION		CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
MS-LIS-31B	VESSEL LEVEL FOR HPCS	H22-P005	02B22	198003	A N	1 0	1 4	0 0			33+		N
2	R 526 N.8/5.8		I204			16483							
MS-LIS-31C	VESSEL LEVEL FOR HPCS	H22-P004	02B22	198001	N N	1 0							
2	R 525 4.5/7.1		I204			288A							
MS-LIS-31D	VESSEL LEVEL FOR HPCS	H22-P004	02B22	198003	A N	1 0	1 4	0 0			33+		N
2	R 526 N.8/5.8		I204			16483							
MS-LIS-36A	MS LEVEL	H22-P026	02B22	198008	N N	1 0	1 4	0 0			33+	W	N
2	R 530 J.9/4.5		Y010			33961							
MS-LIS-36B	MS LEVEL	H22-P027	02B22	198002	N N	1 0	1 4	0 0			33+		N
2	R 522 J8/4.6		Y010			4418C							
MS-LIS-36C	MS LEVEL	H22-P026	02B22	198002	N N	1 0	1 4	0 0			33+	F	N
2	R 524 J.9/4.5		Y010			4418C							
MS-LIS-36D	MS LEVEL	H22-P027	02B22	198002	N N	1 0	1 4	0 0			33+	F	N
2	R 527 M.7/6.8		Y010			4418C							
MS-LIS-37A	MS LEVEL	H22-P026	02B22	198001	A N	1 0	1 4	0 0			33+		N
2	R 530 J/4.5		I204			288A							
MS-LIS-37B	MS LEVEL	H22-P027	02B22	198003	A N	1 0	1 4	0 0			33+	F	N
2	R 527 M.7/6.8		I204			16483							
MS-LIS-37C	MS LEVEL	H22-P026	02B22	198001	A N	1 0	1 4	0 0			33+	F	N
2	R 524 J.9/4.5		I204			288A							
MS-LIS-37D	MS LEVEL	H22-P027	02B22	198003	A N	1 0	1 4	0 0			33+	F	N
2	R 527 M.7/6.8		I204			16483							
MS-LIS-38A	MS LEVEL	H22-P026	02B22	198001	A N	1 0	1 4	0 0			33+	F	N
2	R 524 J.9/4.5		B080			288A							
MS-LIS-38B	MS LEVEL	H22-P027	02B22	198006	A N	1 0	1 4	0 0			33+		N
2	R 527 M.7/6.8		I204			958-943-467-947							
MS-LITS-26A	MS LEVEL - - H22-P004		02B22	199001	A N	1 0	1 4	0 0			33+	F	N
2	R 530 J/4.5		I204			760							
MS-LITS-26B	MS LEVEL		02B22	199002	A N	1 0	1 4	0 0			33+	F	N
2	R 527 M.7/6.8		I204			943-958-93							
MS-LITS-26C	MS LEVEL	H22-P005	02B22	199001	A N	1 0	1 4	0 0			33+		N
2	R 526 N8/5.8		B080			760							
MS-LITS-26D	MS LEVEL	H22-P026	02B22	199001	A N	1 0	1 4	0 0			33+		N
2	R 522 J8/14.6		B080			760							
MS-LITS-44A	MS LEVEL TRIP	H22-P010	02B22	199001	R N	1 0							
2	R 471 M.5/4.5		I204			760							
MS-LITS-44B	MS LEVEL TRIP	H22-P009	02B22	199001	A N	1 0	1 4	0 0			33+		N
2	R 471 J.6/8.1		I204			760							
MS-LMS-22A1	MN STM ISO VLV 22A LMT SW1		02B22	200002		1 3							
2	C 513 5 D AZR27		N007			EA700-86010							
MS-LMS-22A2	MN STM ISO VLV 22A LMT SW2 TO RPS		02B22	200002	N	1 3							
2	C 513 5 D AZ R27		N007			EA700-86010							
MS-LMS-22A3	MN STM ISO VLV 22A LMT SW3		02B22	200002		1 3							
2	C 513 5 D AZ R27		N007			EA700-86010							
MS-LMS-22B1	MN STM ISO VLV 22B LMT SW1		02B22	200002		1 3							
2	C 513 15 D AZ R27		N007			EA700-86010							
MS-LMS-22B2	MN STM ISO VLV 22B LMT SW2 TO RPS		02B22	200002	N	1 3							
2	C 513 15 D AZ R27		N007			EA700-86010							
MS-LMS-22B3	MN STM ISO VLV 22B LMT SW3		02B22	200002		1 3							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE TEST / MFG MODEL NO.	ANL	F/O	C	FREQ	TM	HL
2	C 513 15 D AZ R27	N007			EA700-86010						
MS-LMS-22C1	MN STM ISO VLV 22C LMT SW1	02B22	200002		1 3						
2	C 513 345 D AZ R27	N007			EA700-86010						
MS-LMS-22C2	MN STM ISO VLV 22C LMT SW2 TO RPS	02B22	200002	N	1 3						
2	C 513 345 D AZ R27	N007			EA700-86010						
MS-LMS-22C3	MN STM ISO VLV 22C LMT SW3	02B22	200002		1 3						
2	C 513 345 D AZ R27	N007			EA700-86010						
MS-LMS-22D1	MN STM ISO VLV 22D LMT SW1	02B22	200002		1 3						
2	C 513 355 D AZ R27	N007			EA700-86010						
MS-LMS-22D2	MN STM ISO VLV 22D LMT SW2 TO RPS	02B22	200002	N	1 3						
2	C 513 355 D AZ R27	N007			EA700-86010						
MS-LMS-22D3	MN STM ISO VLV 22D LMT SW3	02B22	200002		1 3						
2	C 513 355 D AZ R27	N007			EA700-86010						
MS-LMS-24A					1 0						
2											
MS-LMS-24B					1 0						
2											
MS-LMS-24C					1 0						
2											
MS-LMS-24D					1 0						
2											
MS-LMS-28A1	MN STM ISO VLV 28A LMT SW1	02B22	200002		1 3						
2	R 543 H.7/5.9	N007			EA700-86010						
MS-LMS-28A2	MN STM ISO VLV 28A LMT SW2 TO RPS	02B22	200002	N	1 3						
2	R 543 H7/5.9	N007			EA700-86010						
MS-LMS-28A3	MN STM ISO VLV 28A LMT SW3	02B22	200002		1 3						
2	R 543 H.7/5.9	N007			EA700-86010						
MS-LMS-28B1	MN STM ISO VLV 28B LMT SW1	02B22		R N	1 3						
2	R 543 H.7/5.9	N007			EA700-86010						
MS-LMS-28B2	MN STM ISO VLV 28B LMT SW2 TO RPS	02B22	200002	N	1 3						
2	R 543 H7/5.6	N007			EA700-86010						
MS-LMS-28B3	MN STM ISO VLV 28B LMT SW3	02B22	200002		1 3						
2	R 543 H.7/5.6	N007			EA700-86010						
MS-LMS-28C1	MN STM ISO VLV 28C LMT SW1	02B22	200002		1 3						
2	543	N007			EA700-86010						
MS-LMS-28C2	MN STM ISO VLV 28C LMT SW2 TO RPS	02B22	200002	N	1 3						
2	R 543 H7/6.4	N007			EA700-86010						
MS-LMS-28C3	MN STM ISO VLV 28C LMT SW3	02B22	200002		1 3						
2	R 543 H.7/6.4	N007			EA700-86010						
MS-LMS-28D1	MN STM ISO VLV 28D LMT SW1	02B22	200002		1 3						
2	R 543 H.7/6.1	N007			EA700-86010						
MS-LMS-28D2	MN STM ISO VLV 28D LMT SW2 TO RPS	02B22	200002	N	1 3						
2	R 543 H7/6.1	N007			EA700-86010						
MS-LMS-28D3	MN STM ISO VLV 28D LMT SW3	02B22	200002		1 3						
2	R 543 H.7/6.1	N007			EA700-86010						
MS-LMS-31A					1 0						
2											
MS-LMS-31B					1 0						
2											

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
MS-LMS-31C					1 0							
2												
MS-LMS-31D					1 0							
2												
MS-LMS-36A					1 0							
2												
MS-LMS-36B					1 0							
2												
MS-LMS-36C					1 0							
2												
MS-LMS-36D					1 0							
2												
MS-MO-16	MOTOR OPERATOR MS-V-16	41A	221031	A B	1 3	1 4	0 0			35	P	Y
2	C 504 0 0 AZ R37	L200			SMB-000-7.5/L56							
MS-MO-19	0.36HP 3.8A MOTOR OPERATOR MS-V-19	41A	221027	A N	1 3	1 4	0 0			35		N
2	R 504 H.8/6.2	L200			SMB-000-5/D56A							
MS-MO-20	.66HP MOTOR OPERATOR MS-V-20	41B	221015		1 3							
2	R 504 H1/5.9	L200			SMB-00-10/L56							
MS-MO-67A	.5 HP MOTOR OPERATOR FOR MS-V-67A	215	221026	R	1 3							
2	R 501 H7/5.8	L200			SMB-000-5/							
MS-MO-67B	.5 HP MOTOR OPERATOR FOR MS-V-67B	215	221026	. R	1 3							
2	R 501 H7/5.6	L200			SMB-000-5/							
MS-MO-67C	.5 HP MOTOR OPERATOR FOR MS-V-67C	215	221026	R	1 3							
2	R 501 H7/6.4	L200			SMB-000-5/							
MS-MO-67D	.5 HP MOTOR OPERATOR FOR MS-V-67D	215	221026	R	1 3							
2	R 501 H7/6.2	L200			SMB-000-5/							
MS-PS-15A	MAIN STM LINE A PRESS TO RPS-IR-10	02B22	256008	B N	4 0	1 1	0 0			33		N
2	T 471 C4/6.3	B070			81T-M12SS-GE							
MS-PS-15B	RPS LO STM FRESS LINE B IR-11	02B22	256008	B N	4 0	1 1	0 0			33		N
2	T 471 B5/6.3	B070			81T-M12SS-GE							
MS-PS-15C	RPS LO STM PRESS LINE C IR-10	02B22	256008	B N	4 0	1 1	0 0			33		N
2	T 471 C4/6.3	B070			81T-M12SS-GE							
MS-PS-15D	MAIN STM LINE D PRESS TO RPS-IR-11	02B22	256008	B N	4 0	1 1	0 0			33		N
2	T 471 B5/6.3	B070			81T-M12SS-GE							
MS-PS-20A	MAIN STEAM ISO. VLV SCRAM INTERLOK	02B22	256029	A N	1 0	1 4	0 0			33+	F	N
2	R 525 J.5/7.1	B069			164C5354P00R000							
MS-PS-20B	MS ISO. VLV SCRAM INTRLK -H22-P027	02B22	256026	A N	1 0	1 4	0 0			33+	F	N
2	R 524 M.7/6.8	B069			14C5359P001-R02							
MS-PS-20C	MS ISO. VLV SCRAM INTRLK -H22-P005	02B22	256032	A N	1 0	1 4	0 0			33+		N
2	R 526 N.8/5.8	B069			164C5359P001R03							
MS-PS-20D	MS ISO. VLV SCRAM INTRLK -H22-P026	02B22	256031	A N	1 0	1 4	0 0			33+	F	N
2	R 542 J.9/4.5	B069			164C5359P001R02							
MS-PS-23A	HIGH VESSEL PRESSURE H22-P004	02B22	256030	A N	1 0	1 4	0 0			33+	F	N
2	R 575 J.5/7.1	B069			164C5354P00R03							
MS-PS-23B	HIGH VESSEL PRESSURE	02B22	256026	A N	1 0	1 4	0 0			33+	F	N
2	R 524 M.7/6.8	B069			14C5359P001-R02							
MS-PS-23C	HIGH VESSEL PRESSURE H22-P005	02B22	256032	A N	1 0	1 4	0 0			33+		N
2	R 526 N.8/5.8	B069			164C5359P001R03							
MS-PS-23D	HIGH VESSEL PRESSURE H22-P026	02B22	256031	A N	1 0	1 4	0 0			33+	F	N

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 524 J.9/4.5	B069			164C5359P001R02							
MS-PS-3A	1ST STAGE TURBINE PRESSURE	02C72			4 0							
2	T 471 C.4/6.3	B069			B2T-M12SS							
MS-PS-3B	1ST STAGE TURBINE PRESSURE	02C72			4 0							
2	T 471 B.5/6.3	B069			B2T-M12SS							
MS-PS-3C	1ST STAGE TURBINE PRESSURE	02C72			4 0							
2	T 471 C.4/6.3	B069			B2T-M12SS							
MS-PS-3D	1ST STAGE TURBINE PRESSURE	02C72			4 0							
2	T 471 B.5/6.3	B069			B2T-M12SS							
MS-PS-39A	RELIEF VLV PRESS SWITCH	02B22	256031	A N	1 0	1 4	0 0			33+	F	N
2	R 524 J.9/4.5	B069			164C5359P001R02							
MS-PS-39B	RELIEF VLV PRESS SWITCH	02B22	256031	R N	1 0						F	
2	R 524 J.9/4.5	B069			164C5359P001R02							
MS-PS-39C	RELIEF VLV PRESS SWITCH	02B22	256031	R N	1 0						F	
2	R 524 J.9/4.5	B069			164C5359P001R02							
MS-PS-39D	RELIEF VLV PRESS SWITCH	02B22	256031	R N	1 0						F	
2	R 524 J.9/4.5	B069			164C5359P001R02							
MS-PS-39E	RELIEF VLV PRESS SWITCH	02B22	256031	R N	1 0						F	
2	R 524 J.9/4.5	B069			164C5359P001R02							
MS-PS-39F	RELIEF VLV PRESS SWITCH	02B22	256017	R N	1 0							
2	R 524 J.0/4.5	B069			164C5359P001							
MS-PS-39G	RELIEF VLV PRESS SWITCH	02B22	256031	R N	1 0						F	
2	R 524 J.9/4.5	B069			164C5359P001R02							
MS-PS-39H	RELIEF VLV PRESS SWITCH	02B22	256031	A N	1 0	1 4	0 0			33+	F	N
2	R 530 J.9/4.5	B069			164C5359P001R02							
MS-PS-39I	RELIEF VLV PRESS SWITCH	02B22			1 0							
2	R 530 J.9/4.5	B069			164C5359P001							
MS-PS-39J	RELIEF VLV PRESS SWITCH	02B22	256017	A N	1 0	1 4	0 0			33+		N
2	R 524 J.9/4.5	B069			164C5359P001							
MS-PS-39K	RELIEF VLV PRESS SWITCH	02B22	256031	R N	1 0						F	
2	R 530 J.9/4.5	B069			164C5359P001R02							
MS-PS-39L	RELIEF VLV PRESS SWITCH	02B22	256031	R N	1 0						F	
2	R 530 J.9/4.5	B069			164C5359P001R02							
MS-PS-39M	RELIEF VLV PRESSURE SWCH H22-P26	02B22	256028	R N	1 0						F	
2	R 524 J.5/4.5	B069			164C1359P001R03							
MS-PS-39N	RELIEF VLV PRESS SWITCH	02B22	256028	A N	1 0	1 4	0 0			33+	F	N
2	R 524 J.5/4.5	B069			164C1359P001R03							
MS-PS-39P	RELIEF VLV PRESS SWITCH	02B22	256028	A N	1 0	1 4	0 0			33+	F	N
2	R 524 J.5/4.5	B069			164C1359P001R03							
MS-PS-39R	RELIEF VLV PRESS SWITCH	02B22	256028	A N	1 0	1 4	0 0			33+	F	N
2	R 524 J.5/4.5	B069			164C1359P001R03							
MS-PS-39S	RELIEF VLV PRESS SWITCH	02B22	256028	A N	1 0	1 4	0 0			33+	F	N
2	R 524 J.5/4.5	B069			164C1359P001R03							
MS-PS-39U	RELIEF VLV PRESS SWITCH	02B22	256028	A N	1 0	1 4	0 0			33+	F	N
2	R 524 J.5/4.5	B069			164C1359P001R03							
MS-PS-39V	RELIEF VLV PRESS SWITCH	02B22	256028	A N	1 0	1 4	0 0			33+	F	N
2	R 524 J.5/4.5	B069			164C1359P001R03							
MS-PS-45A	MS PRESSURE H22-P026	02B22	256028	A N	1 0	1 4	0 0			33+	F	N
2	R 524 J.5/4.5	B069			164C1359P001R03							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION		CONTRACT / MFG	OID	QS	USE	TEST / MFG MODEL NO.	ANL	F/O	C	FREQ	TM	HL
MS-PS-45C 2	MS PRESSURE R 524 M.7/6.8	H22-P027	02822 B069	256027	A N	1 0	1 4 14C5359P001-R03	0 0			33+	F	N
MS-PS-45D 2	MS PRESSURE R 524 M.7/6.8	H22-P027	02822 B069	256027	A N	1 0	1 4 14C5359P001-R03	0 0			33+	F	N
MS-PS-47A 2	DRYWELL R 575 J.5/7.1		02822 S382	256047	A N	1 0	1 4 17N-AAS-SLOTT	0 0			33+	F	N
MS-PS-47B 2	DRYWELL PRESS FOR HPCS R 526 N.8/5.8	H22-P005	02822 S382	256046	A N	1 0	1 4 12N-AAS-NOTT	0 0			33+		N
MS-PS-47C 2	DRYWELL PRESSURE R 575 J.5/7.1		02822 S382	256046	A N	1 0	1 4 12H-AAS-X10TT	0 0			33+	F	N
MS-PS-47D 2	DRYWELL PRESS FOR HPCS R 526 N.8/5.8	H22-P005	02822 S382	256046	A N	1 0	1 4 12N-AAS-NOTT	0 0			33+		N
MS-PS-48A 2	DRYWELL PRESSURE R 535 J.5/4.5	H22-P026	02822 S382	256046	A N	1 0	1 4 12-AAS-X1051TT	0 0			33+	F	N
MS-PS-48B 2	DRYWELL PRESSURE R 527 M.7/6.8	H22-P027	02822 S382	256020	A N	1 0	1 4 282-F7M67	0 0			33+	F	N
MS-PS-48C 2	DRYWELL PRESSURE R 535 J.5/4.5	H22-P026	02822 S382	256046	A N	1 0	1 4 12-AAS-X1051TT	0 0			33+	F	N
MS-PS-49D 2	DRYWELL PRESSURE R 527 M.7/6.8	H22-P027	02822 S382	256046	N N	1 0	12N-AAS-Y1051TT					F	
MS-PS-51A 2	PRESSURE SWITCH					1 0							
MS-PS-51B 2	PRESSURE SWITCH					1 0							
MS-PS-56A 2	CONDENSER VACUUM-MSIV-LOCAL T 501 C8/12.8		58 B070	256009	B N	1 0	1 4 D2T-M18SS	0.0			33+		N
MS-PS-56B 2	CONDENSER VACUUM-MSIV-LOCAL T 501 C8/12.9		58 B070	256009	B N	1 0	1 4 D2T-M18SS	0 0			33+		N
MS-PS-56C 2	CONDENSER VACUUM-MSIV-LOCAL T 501 C8/12.8		58 B070	256009	B N	1 0	1 4 D2T-M18SS	0 0			33+		N
MS-PS-56D 2	CONDENSER VACUUM-MSIV-LOCAL T 501 C8/12.9		58 B070	256009	B N	1 0	1 4 D2T-M18SS	0 0			33+		N
MS-RE-3A 2	MAIN STEAM LINE "A" RADIATION R 508 H7/5.9		02017 G080	277002	X D	1 0	237X731G001						
MS-RE-3B 2	MAIN STEAM LINE "B" RADIATION R 508 H7/5.6		02017 G080	277002	X D	1 0	237X731G001						
MS-RE-3C 2	MAIN STEAM LINE "C" RADIATION R 508 H7/6.4		02017 G080	277002	X D	1 0	237X731G001						
MS-RE-3D 2	MAIN STEAM LINE "D" RADIATION R 508 H7/6.1		02017 G080	277002	X D	1 0	237X731G001						
MS-RMS-S2A 2	CLOSE MS-V-28A W 501 L/13	H13-P601	02822 G080	285007	A B	4 3	1 4 SBM	0 0			33+		N
MS-RMS-S2B 2	CLOSE MS-V-28B W 501 L/13	H13-P601	02822 G080	285007	R B	4 3	SBM						
MS-RMS-S2C 2	CLOSE MS-V-28C (OUTBOARD) W 501 L/13	H13-P601	02822 G080	285007	R B	4 3	SBM						
MS-RMS-S2D 2	CLOSE MS-V-28D (OUTBOARD) W 501 L/13	H13-P601	02822 G080	285007	A B	4 3	1 4 SBM	0 0			33+		N
MS-SPV-1A	SOLENIOD PILOT VLV					4 0							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	W 501 J1/12.4											
MS-SPV-1AC	SPV FOR MS-RV-1A				1 0							
2	R 522											
MS-SPV-1B	SOLENOID PILOT VLV				4 0							
2	W 501 K9/12											
MS-SPV-1BC	SPV FOR MS-RV-1B				1 0							
2	R 522											
MS-SPV-1CC	SPV FOR MS-RV-1C				1 0							
2	R 522											
MS-SPV-1DC	SPV FOR MS-RV-1D				1 0							
2	R 522											
MS-SPV-2AC	SPV FOR MS-RV-2A				1 0							
2	R 522											
MS-SPV-2BC	SPV FOR MS-RV-2B				1 0							
2	R 522											
MS-SPV-2CC	SPV FOR MS-RV-2C				1 0							
2	R 522											
MS-SPV-2DC	SPV FOR MS-RV-2D				1 0							
2	R 522											
MS-SPV-22A1	MN STM ISO VLV 22A TEST SOLENOID	02B22	315011		1 3							
2	C	A610			HTX-8320A20							
MS-SPV-22A2	MN STM ISO VLV 22A TEST SOLENOID	02B22			1 3							
2	C 513 5 D AZ R27											
MS-SPV-22A3	MN STM ISO VLV 22A TEST SOLENOID	02B22			1 3							
2	C 513 5 D AZ R27											
MS-SPV-22B2	MS STM ISO VLV 22B TEST SOLENOID	02B22			1 3							
2	C 513 15 D AZ R27											
MS-SPV-22B3	MN STM ISO VLV 22B TEST SOLENOID	02B22			1 3							
2	C 513 15 D AZ R27											
MS-SPV-22C2	MN STM ISO VLV 22C TEST SOLENOID	02B22			1 3							
2	C 513 345 D AZ R27	A449										
MS-SPV-22C3	MN STM ISO VLV 22C TEST SOLENOID	02B22			1 3							
2	C 513 345 D AZ R27	A449										
MS-SPV-22D2	MN STM ISO VLV 22D TEST SOLENOID	02B22			1 3							
2	C 513 355 D AZ R27											
MS-SPV-22D3	MN STM ISO VLV 22D TEST SOLENOID	02B22			1 3							
2	R 513											
MS-SPV-28A2	MN STM ISO VLV 28A TEST SOLENOID	02B22			1 3							
2	R 513 H3/5.9											
MS-SPV-28A3	MN STM ISO VLV 28A TEST SOLENOID	02B22			1 3							
2	R 513											
MS-SPV-28B2	MN STM ISO VLV 28B TEST SOLENOID	02B22			1 3							
2	R 513 H3/5.6											
MS-SPV-28B3	MN STM ISO VLV 28B TEST SOLENOID	02B22			1 3							
2	R 513											
MS-SPV-28C2	MN STM ISO VLV 28C TEST SOLENOID	02B22			1 3							
2	R 513 H3/6.4											
MS-SPV-28C3	MN STM ISO VLV 28C TEST SOLENOID	02B22			1 3							
2	R 513											

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
MS-SPV-28D2 2	MN STM ISO VLV 28D TEST SOLENOID R 513 H3/6.1	02B22			1 3							
MS-SPV-28D3 2	MN STM ISO VLV 28D TEST SOLENOID R 513	02B22			1 3							
MS-SPV-3AC 2	SPV FOR MS-RV-3A R 522				1 0							
MS-SPV-3BC 2	SPV FOR MS-RV-3B R 522				1 0							
MS-SPV-3CC 2	SPV FOR MS-RV-3C R 522				1 0							
MS-SPV-3DA 2	SOLENOID PILOT FOR MS-RV-3D C 547 310 DEG AZ	02B22 A613	315008	R B	1 0 C5246							
MS-SPV-3DB 2	SOLENOID PILOT FOR MS-RV-3D C 547 310 DEG AZ	02B22 A613	315008	R B	1 0 C5246							
MS-SPV-3DC 2	SPV FOR MS-RV-3D R 522				1 0							
MS-SPV-4AA 2	SOLENOID PILOT FOR MS-RV-4A C 547 62 DEG AZ	02B22 A613	315008	R B	1 0 C5246							
MS-SPV-4AB 2	SOLENOID PILOT FOR MS-RV-4A C 547 62 DEG AZ	02B22 A613	315008	R B	1 0 C5246							
MS-SPV-4AC 2	SPV FOR MS-RV-4A R 522				1 0							
MS-SPV-4BA 2	SOLENOID PILOT FOR MS-RV-4B C 547 75 DEG AZ	02B22 A613	315008	R B	1 0 C5246							
MS-SPV-4BB 2	SOLENOID PILOT FOR MS-RV-4B C 547 75 DEG AZ	02B22 A613	315008	R B	1 0 C5246							
MS-SPV-4BC 2	SPV FOR MS-RV-4B R 522				1 0							
MS-SPV-4CA 2	SOLENOID PILOT FOR MS-RV-4C C 547 285 DEG AZ	02B22 A613	315008	R B	1 0 C5246							
MS-SPV-4CB 2	SOLENOID PILOT FOR MS-RV-4C C 547 285 DEG AZ	02B22 A613	315008	R B	1 0 C5246							
MS-SPV-4CC 2	SPV FOR MS-RV-4C R 522				1 0							
MS-SPV-4DA 2	SOLENOID PILOT FOR MS-RV-4D C 547 300 DEG AZ	02B22 A613	315008	R B	1 0 C5246							
MS-SPV-4DB 2	SOLENOID PILOT FOR MS-RV-4D C 547 300 DEG AZ	02B22 A613	315008	R B	1 0 C5246							
MS-SPV-4DC 2	SPV FOR MS-RV-4D R 522				1 0							
MS-SPV-5BA 2	SOLENOID PILOT FOR MS-RV-5B C 547 80 DEG AZ	02B22 A613	315008	R B	1 0 C5246							
MS-SPV-5BB 2	SOLENOID PILOT FOR MV-RV-5B C 547 80 DEG AZ	02B22 A613	315008	R B	1 0 C5246							
MS-SPV-5BC 2	SPV FOR MS-RV-5B R 522				1 0							
MS-SPV-5CA 2	SOLENOID PILOT FOR MS-RV-5C C 547 275 DEG AZ	02B22 A613	315008	R B	1 0 C5246							
MS-SPV-5CB	SOLENOID PILOT FOR MS-RV-5C	02B22	315008	R B	1 0							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	C 547 275 DEG AZ	A613			C5246							
MS-SPV-5CC	SPV FOR MS-RV-5C				1 0							
2	R 522											
MS-TE-4H	MS TEMP REBLOG541M0-4.3	02B22		T	1 0		0 0			00		Y
2	C 501	P427										
MS-TE-4J	MS TEMP REBLOG541M7-6.5	02B22		T	1 0		0 0			00		Y
2	C 501	P427										
MS-TE-4K	MS TEMP REBLOG541J1-7.0	02B22		T	1 0		0 0			00		Y
2	C 501	P427										
MS-TE-4L	MS TEMP REBLOG541J8-7.5	02B22		T	1 0		0 0			00		Y
2	C 501	P427										
MS-TE-4M	MS TEMP REBLOG541H6-6.9	02B22		T	1 0		0 0			00		Y
2	C 501	P427										
MS-TE-4N	MS TEMP REBLOG541M1-7.3	02B22		T	1 0		0 0			00		Y
2	C 501	P427										
MS-TE-4P	MS TEMP REBLOG541K4-7.8	02B22		T	1 0		0 0			00		Y
2	C 501	P427										
MS-TE-4R	MS TEMP REBLOG541L9-4.3	02B22		T	1 0		0 0			00		Y
2	C 501	P427										
MS-TE-4S	MS TEMP REBLOG541L9-4.8	02B22		T	1 0		0 0			00		Y
2	C 501	P427										
MS-TE-4U	MS TEMP REBLOG541J8-4.5	02B22		T	1 0		0 0			00		Y
2	C 501	P427										
MS-TE-4V	MS TEMP REBLOG541J2-5.0	02B22		T	1 0		0 0			00		Y
2	C 501	P427										
MSLC-FT-11	FROM AIR INLET TO MSLC-FN-1	59	156006	A	3 0	1 4	0 0			33+		N
2	R	G080			342203							
MSLC-FT-26	FROM AIR INLET TO MSLC-FN-2	59	156006	A	3 0	1 4	0 0			33+		N
2	R	G080			342203							
MSLC-FT-3A	LOOP "A" TO MANIFOLD	215	156001	X D	1 0							
2	R 477 H.4/5.7	F180			E130L							
MSLC-FT-3B	LOOP "B" TO MANIFOLD	215	156001	X D	1 0							
2	R 474 H.4/5.7	F180			E130L							
MSLC-FT-3C	LOOP "C" TO MANIFOLD	215	156001	X D	1 0							
2	R 477 H.4/5.8	F180			E130L							
MSLC-FT-3D	LOOP "D" TO MANIFOLD	215	156001	X D	1 0							
2	R 474 H.4/5.8	F180			E130L							
MSLC-H-A	MAIN STM LEAKAGE CONTROL HTR A	215		X D	1 0							
2	R 477 H.4/5.7	C268										
MSLC-H-B	MAIN STM LEAKAGE CONTROL HTR B	215		X D	1 0							
2	R 474 H.4/5.7	C268										
MSLC-H-C	MAIN STM LEAKAGE CONTROL HTR C	215		X D	1 0							
2	R 477 H.4/5.8	C268										
MSLC-H-D	MAIN STM LEAKAGE CONTROL HTR D	215		X D	1 0							
2	R 474 H.4/5.8	C268										
MSLC-M-1	1.5 HP MOTOR FOR MSLC-FN-1	28	213053	X B	1 0							
2	R 473 H.4/6.3	W120			TBFC							
MSLC-M-2	1.5HP MOTOR FOR MSLC-FN-2	28	213057	B B	1 0							
2	R 501 H.6/7.3	W120			TBFC/76D56668							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
MSLC-MO-1A	1HP MOTOR OPERATOR MSLC-V-1A	215	221043	X R	1 0							
2	R 474 H.5/5.5	L200			SMC-04-3/42							
MSLC-MO-1B	1HP MOTOR OPERATOR MSLC-V-1B	215	221043	X R	1 0							
2	R 474 H.5/5.6	L200			SMC-04-3/42							
MSLC-MO-1C	1HP MOTOR OPERATOR MSLC-V-1C	215	221069	R R	1 0							
2	R 474 H.5/5.6	W120			TBFC							
MSLC-MO-1D	1HP MOTOR OPERATOR MSLC-V-1D	215	221043	X R	1 0							
2	R 474 H.5/5.5	L200			SMC-04-3/42							
MSLC-MO-10	1HP MOTOR OPERATOR MSLC-V-10	215	221029	X R	1 0							
2	R 502 H5/6.0	L200			SMB-000-5/P48							
MSLC-MO-2A	1HP MOTOR OPERATOR MSLC-V-2A	215	221029	X R	1 0							
2	R 502 H6/5.3	L200			SMB-000-5/P48							
MSLC-MO-2B	1HP MOTOR OPERATOR MSLC-V-2B	215	221029	X R	1 0							
2	R 502 H6/5.3	L200			SMB-000-5/P48							
MSLC-MO-2C	1HP MOTOR OPERATOR MSLC-V-2C	215	221029	X R	1 0							
2	R 502 H6/6.4	L200			SMB-000-5/P48							
MSLC-MO-2D	1HP MOTOR OPERATOR MSLC-V-2D	215	221029	X R	1 0							
2	R 502 H4/5.8	L200			SMB-000-5/P48							
MSLC-MO-3A	1HP MOTOR OPERATOR MSLC-V-3A	215	221029	X R	1 0							
2	R 502 H6/5.5	L200			SMB-000-5/P48							
MSLC-MO-3B	1HP MOTOR OPERATOR MSLC-V-3B	215	221029	X R	1 0							
2	R 502 H6/5.3	L200			SMB-000-5/P48							
MSLC-MO-3C	1HP MOTOR OPERATOR MSLC-V-3C	215	221029	X R	1 0							
2	R 502 H6/6.4	L200			SMB-000-5/P48							
MSLC-MO-3D	1HP MOTOR OPERATOR MSLC-V-3D	215	221029	R R	1 0							
2	R 502 H4/5.8	L200			SMB-000-5/P48							
MSLC-MO-4	1.0HP MOTOR OPERATOR MSLC-V-4	215	221029	X R	1 0							
2	R 502 H2/6.0	L200			SMB-000-5/P48							
MSLC-MO-5	1.0HP MOTOR OPERATOR MSLC-V-5	215	221029	X R	1 0							
2	R 502 H2/6.2	L200			SMB-000-5/P48							
MSLC-MO-9	1 HP MOTOR OPERATOR MSLC-V-9	215	221029	X R	1 0							
2	R 502 H2/6.4	L200			SMB-000-5/P48							
PI-SV-250		220	324002	B B	1 0							
2	R 537 M.8/6.3	T020			1021010-1-B-1-S							
PI-SV-251		220	324002	B B	1 0							
2	R 537 M.8/6.3	T020			1021010-1-B-1-S							
PI-SV-253		220	324002	B B	1 0							
2	R 536 J.0/4.1	T020			1021010-1-B-1-S							
PI-SV-256		220	324002	B B	1 0							
2	R 536 J.0/4.1	T020			1021010-1-B-1-S							
PI-SV-257		220	324002	B B	1 0							
2	R	T020			1021010-1-B-1-S							
PI-SV-259		220	324002	B B	1 0							
2	R	T020			1021010-1-B-1-S							
PI-SV-262		220		B B	2 0							
2	R											
PI-SV-263		220		B B	2 0							
2	R											
PI-SV-264		220		B B	2 0							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R											
PI-SV-265		220		B B	2 0							
2	R											
PI-SV-266		220		B B	2 0							
2	R											
PI-SV-267		220		B B	2 0							
2	R											
PI-SV-268		220		B B	2 0							
2	R											
PI-SV-269		220		B B	2 0							
2	R											
POA-M-2A	2HP MOTOR FOR POA-FN-2A	28	213024	B B	4 3						F	
2	A 444 A.3/1.8	W120			SBDP/213T							
POA-M-2B	2HP MOTOR FOR POA-FN-2A	28	213024	B B	4 3						F	
2	B 441 A.2/1.5	W120			SBDP/213T							
POA-MO-1A1	MOTOR OPER FOR POA-AD-1A1	216	221046	R D	4 3						F	
2	A 441 A.3/1.2	B066			MP470-0-2-1							
POA-MO-1A2	MOTOR OPER FOR POA-AD-1A2	216	221046	R D	4 3						F	
2	A 445 A.3/1.2	B066			MP470-0-2-1							
POA-MO-1B1	MOTOR OPER FOR POA-AD-1B1	216	221046	R D	4 3							
2	B 442 A.3/1.4	B066			MP-470-0-2-1							
POA-MO-1B2	MOTOR OPER FOR POA-AD-1B2	216	221046	R D	4 3							
2	B 445 A.2/1.4	B066			MP-470-0-2-1							
PRA-M-1A	10HP/?A MOTOR FOR PRA-FN-1A	67	213036	A B	4 3							
2	A 441 D.4/1.3	W120			TBFC/256T							
PRA-M-1B	10HP MOTOR FOR PRA-FN-1B	67	213036	A B	4 3							
2	B 448 D.3/1.5	W120			TBFC/256T							
RCC-LMS-V129	LIMIT SWITCH FOR RCC-V-129				1 0							
2												
RCC-LMS-V130	LIMIT SWITCH FOR RCC-V-130				1 0							
2												
RCC-LMS-V131	LIMIT SWITCH FOR RCC-V-131				1 0							
2												
RCC-MO-104	MOTOR OPERATOR FOR RCC-V-104	215			1 0							
2	R 514 K.0/4.3											
RCC-MO-129	RCC-V-129 MOTOR OPERATOR	41A		N N	1 0							
2	R 548											
RCC-MO-130	RCC-V-130 MOTOR OPERATOR	41A		N N	1 0							
2	R 548											
RCC-MO-131	RCC-V-131 MOTOR OPERATOR	41A		N N	1 0							
2	R 548											
RCC-MO-21	1HP 2.8A MOTOR OPERATOR RCC-V-21	41A	221010	A B	1 0	1 4	0 0			35		Y
2	R 515 K.7/4.1	L200			SMB-0-15/H56							
RCC-MO-40	0.7HP 2.3A MOTOR OPERATOR RCC-V-40	41A	221007	A B	1 0	1 4	0 0			35		Y
2	C 517 78 DEG	L200			SMB-0							
RCC-MO-5	1HP 2.8A MOTOR OPERATOR RCC-V-5	41A	221010	A B	1 0	1 4	0 0			35		Y
2	R 515 K.8/4.1	L200			SMB-0-15/H56							
RCC-TS-10A	FUEL POOL HX-1A COOLING WTR. LOC-A	215	355012		3 3							
2	R 548 K8/9	8070			A-10402							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG. MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
RCC-TS-10B	FUEL POOL HX-1B COOLING WTR. LOC-A	215	355012		3 3							
2	R 548 L1/9.4	B070			A-10402							
RCIC-DPIS-13A	RCIC STM SUPPLY HI FLOW H22-P017	02E31	086001	A N	3 1	1 4	0 0			33+		N
2	R 471 L.0/8.0	B080			288A							
RCIC-DPIS-13B	RCIC STM SUPPLY HI FLOW H22-P029	02E31	086001	A N	3 1	1 4	0 0			33+		N
2	R 471 K9/3.9	B080			288A							
RCIC-DPIS-7A	RCIC STM SUPPLY HI FLOW H22-P017	02E31	086001	A N	3 1	1 4	0 0			33+		N
2	R 471 L.0/8.0	B080			288A							
RCIC-DPIS-7B	RCIC STM SUPPLY HI FLOW H22-P029	02E31	086001	A N	3 1	1 4	0 0			33+		N
2	P 471 K9/3.9	B080			288A							
RCIC-E/S-10R	RS PNL PWR TO RCIC INSTR C61-P001	02C61	105002	B B	0 1	1 4	0 0			33+		N
2	W 467 J6/14.3	G080			9T66Y987							
RCIC-E/S-600	PNL PWR TO RCIC INSTR BUSAH13-P612	02E51	105002	R B	0 1							
2	W 501 J.1/12.4	G082			9T66Y987							
RCIC-IN-2R	RS PNL INVERTER C61-P001	02C61	184002	T N	0 1	1 4	0 0			00	F	N
2	W 467 J6/14.3	T248			N250-GWRS-125-60							
RCIC-IN-603	BUS A INVERTER 24VDC	02E51	184002	A B	0 1	2 1	0 0			33+		N
2	W 501 J.1/12.4	G080			N250-GWRS-12560							
RCIC-LMS-H1/2		02	200012	X	3 1							
2	R 422 H3/6.8	S345			#9038-AGI-S4							
RCIC-LMS-V1	TURB-TRIP THROT VALUE LS		200008									
2	R 427 H.6 7.H	N007			D1200G							
RCIC-LS-10	LEVEL SWITCH FOR 8" DRIP POT	02E51	207006	B D	3 1	1 4	0 0			17	W	N
2	R 422 J7/7.3	M040			5.0-751MPG							
RCIC-LS-11	RCIC-TK-1 HIGH LEVEL AL HIGH	2			3 1							
2	R 424 H.4/6.7	S345			6VG-151							
RCIC-LS-12	RCIC-TK-1 LOW LEVEL AL LOW	02			3 0							
2	R 434 H.4/6.7	S345			GG-152							
RCIC-LS-3	LEVEL SW. TURB EXH DRIP LEG LEVEL	215	207011	B	3 1	2 1	0 0			17		Y
2	R 424 H.4/7.4	M040			751-SPX-M14							
RCIC-LS-4	RCIC STM. TO RHR HX DRIP LEG - -	215	207011	B	3 1	2 1	0 0			17		Y
2	R 563 I.0/9.0	M040			402-XXS-SP-M14							
RCIC-LS-5	RCIC STM. TO RHR HX DRIP LEG - -	215	207011	B	3 1	2 1	0 0			17		Y
2	R 563 N.0/9.0	M040			402-XXS-SP-M14							
RCIC-LS-6	RCIC STM. TO RHR HX DRIP LEG - -	215	207011	B	3 1	2 1	0 0			17		Y
2	R 548	M040			751-SPX-M14							
RCIC-M-2	3HP/11A DC MOTOR FOR RCIC-P-2	2	213047	X	3 1							
2	R 422 H5/6.8	R165			L25868411KX/215AX							
RCIC-M-3	15HP/?A MOTOR FOR RCIC-P-3	35A	213030	X D	3 1							
2	R 422 J/8.3	W120			TBDP/256T							
RCIC-M-4	3HP/15.5A DC MOTOR FOR RCIC-P-4	2	213051	X	3 1							
2	R 422 H5/6.8	R165			501808-KX/1610ATC							
RCIC-MO-1	MOTOR OPERATOR RCIC-V-1	02E51	221061	R B	3 1							
2	R 430 H.6/7.2	L200			SMB-000-2/D56A							
RCIC-MO-10	1.08HP 8A MOTOR OPER. RCIC-V-10	41A	221064	A N	3 1	1 4	0 0			35		N
2	R 430 H.4/6.6	L200			SMB-00-15/DJ56F							
RCIC-MO-12	2.9HP MOTOR OPERATOR RCIC-V-12	41A	221009		3 1							
2	R 423 H.4/7.7	L200			SMB-0-15/							
RCIC-MO-13	2.9HP MOTOR OPERATOR RCIC-V-13	41A	221013	A N	2 1	1 4	0 0			35		N

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EQUIPMENT NO.	LV	DESCRIPTION	PLANT LOCATION	CONTRACT	MFG	QID	QS	USE	TEST	ANL	F/O	C	FREQ	TM	HL	MFG MODEL NO.
	2		R 552 5.5/M.6		L200											SMB-0-40/D202G
RCIC-MC-19	2	2.0HP MOTOR OPERATOR RCIC-V-19	R 467 J.4/7.7	215	L200	221030	R R	3 1	1 4	0 0			35		N	SMB-000-5/P56
RCIC-MC-22	2	MOTOR OPERATOR RCIC-V-22	R 446 H.7/8.0	41B	L120	221051	A N	3 1	1 4	0 0			35		N	SMB-2-60/D3204
RCIC-MC-31	2	1HP 9.6A MOTOR OPERATOR RCIC-V-31	R 450 H.8/7.0	41A	L200	221019	A B	2 1	1 4	0 0			35		Y	SMB-00-15/R56
RCIC-MC-45	2	MOTOR OPERATOR RCIC-V-45	R 430 H.6/7.7	41B	L200	221065	A N	3 1	1 4	0 0			35		N	SMB-0-15/DJ56F
RCIC-MC-46	2	2.9HP 11A MOTOR OPER. RCIC-V-46	R 430 H.3/7.2	215	L200	221058	R R	3 1	1 4	0 0			35		N	SMB-0-5/P56
RCIC-MC-59	2	2.9HP MOTOR OPERATOR RCIC-V-59	R 446 H7/8.0	41A	L200	221051	A N	2 1	1 4	0 0			35		N	SMB-0-40/D202G
RCIC-MO-63	2	7HP 10.7A MOTOR OPER. RCIC-V-63	C 555 131 0 AZ R19	41A	L200	221035	A B	2 1	1 4	0 0			35		N	SMB-2-60/D215R2
RCIC-MC-64	2	5.8HP 20A MOTOR OPER. RCIC-V-64	R 556 4.6/L.9	41A	L200	221036	A N	2 1	1 4	0 0			35		Y	SMB-2-80/DS2248
RCIC-MC-68	2	1.08HP MOTOR OPERATOR RCIC-V-68	R 474 J.1/7.5	41A	L200	221008	A N	2 1	1 4	0.0			35		N	SMB-015/DTS6F
RCIC-MC-69	2	2.0HP MOTOR OPERATOR RCIC-V-69	R 466 H6/6.6	215	L200	221026	X R	2 1								SMB-000-5
RCIC-MC-76	2	.33HP/1.9-.95A M O FOR RCIC-V-76	C 556 120 DEG	215	L200	221026	R R	2 1								SMB-000-5
RCIC-MC-8	2	.54HP/5.5A MOTOR OPER FOR RCIC-V-8	R 515 J.0/5.0	41A	L200	221021	A N	2 1	1 4	0 0			35		N	SMB-00-7-5/D56C
RCIC-MC-80	2	MOTOR OPER FOR RCIC-V-110	R 474 J.2/7.2	215	L200	221026	R R	2 1								SMB-000-5
RCIC-MC-86	2	MOTOR OPER FOR RCIC-V-113	R 474 J.2/7.2	215	L200	221026	R R	2 1								SMB-000-5
RCIC-PI-1	2	RCIC-P-1 DISCH PRESS H22-P017	R 424 K9/8.1		R290			3 0								613B
RCIC-PI-2	2	PRESSURE INDICATOR RCIC-P-1 SUCT.	R	02				3 0								613B
RCIC-PI-3	2	TB INLET PRESSURE H22-P017	R 474 L.1/2.9	220	R290			3 0								1355
RCIC-PI-4	2	TB EXHAUST PRESSURE H22-P017	R 422	02				3 0								
RCIC-PI-5	2	15"-30" RCIC-TK-1 PRESSURE	425 N.4/6.7	02E51				3 0								
RCIC-PI-803	2	MARKED RCIC-P1-803	471		R290			3 9								1355
RCIC-PS-1	2	AUX. COOLING SUPPLY - -	R 426 H.6/7.3	220	A499		B	3 1	1 4	0 0			50		N	SC11AR
RCIC-PS-12A	2	PS 12A FOR TURBINE DISCH H22-P017	R 471 L.0/8.0	02E51	B069	256024	A N	3 1	1 4	0 0			33+		N	PIH-M8555-V
RCIC-PS-12B	2	EXHAUST DIAPHRAGM H22-P029	R 471 K.9/3.9	02E51	B069	256025	A N	3 1	1 4	0 0			33+		N	PIH-M855S-V
RCIC-PS-12C	2	PS 12C FOR TURBINE DISC H22-P017	R 471 L.0/8.0	02E51	B069	256023	A N	3 1	1 4	0 0			33+		N	PIH-M855-V

EQUIPMENT NO.	LV	DESCRIPTION	PLANT LOCATION	CONTRACT	MFG	QID	QS	USE	TEST	ANL	F/O	C	FREQ	TM	HL	MFG MODEL NO.
RCIC-PS-12D	2	EXHAUST DIAPHRAGM H22-P029	R 471 K.9/3.9	02E51	B069	256011	A N	3 1	1 4	0 0			33+		N	PIH-M85SS-V
RCIC-PS-13	2	RCIC-TK-1 VAC TK PRESS AL HIGH	R	2				3 1								
RCIC-PS-20	2	RCIC PUMP DISCH H22-P017	R 471 L.0/8.0	02E51	B069	256011	A N	3 1	1 4	0 0			33+		N	PIH-M85SS-V
RCIC-PS-21	2	RCIC-P-1 SUCT AL HIGH H22-P017	R 471 L/8	02H22	B074	256036		3 1								PIH-M340SS-V
RCIC-PS-22A	2	STM LINE PRESSURE H22-P017	R 471 L.0/8.0	02E31	B069	256011	A N	3 1	1 4	0 0			33+		N	PIH-M85SS-V
RCIC-PS-22B	2	PENETRATION MONITORING H22-P029	R 471 K.9/3.9	02E31	B069	256022	A N	3 1	1 4	0 0			33+		N	PIH-M05SS-Y
RCIC-PS-22C	2	STM LINE PRESSURE H22-P017	R 471 L.0/8.0	02E31	P069	256011	A N	3 1	1 4	0 0			33+		N	PIH-M85SS-V
RCIC-PS-22D	2	PENETRATION MONITORING H22-P029	R 471 K.9/3.9	02E31	B069	256021	A N	3 1	1 4	0 0			33+		N	PIH-M05SS-V
RCIC-PS-32A	2	STEAM CONDENSING MODE INLET PRESS	R 501 J.6/3.6	02E12	B069	256010	A N	3 1	1 4	0 0			33+		N	BIT-M1255-GE
RCIC-PS-32B	2	STEAM CONDENSING MODE INLET PRESS	R 515 H.7/7.1	02E12	W120	256051	A N	3 1	1 4	0 0			33+		N	TBFC17605668
RCIC-PS-33A	2	STEAM CONDENSING MODE INLET PRESS	R 501 J.6/3.6	02E12	B069	256010	A N	3 1	1 4	0 0			33+		N	BIT-M1255-GE
RCIC-PS-33B	2	STEAM CONDENSING MODE INLET PRESS	R 515 H.8/7.3	02E12	B069	256033	A N	3 1	1 4	0 0			33+		N	164C5359P0015000
RCIC-PS-34	2	RCIC-P-1 SUCTION PRESSURE	R 437 H.7/7.3	02	R290			3 1								613
RCIC-PS-6	2	RCIC PUMP SUCTION PRESS H22-P017	R 471 L.0/8.0	02E51	S382	256049	A N	3 1	1 4	0 0			33+		N	54N-AA41-(X10)-TT
RCIC-PS-9A	2	RCIC-TURBINE DISC PS 9A H22-P017	R 471 L.0/8.0	02E51	B069	256024	A N	3 1	1 4	0 0			33+		N	PIH-M8555-V
RCIC-PS-9B	2	RCIC TURBINE DISC PS-1B H22-P017	R 471 L/8	02E51	B069	256011	A N	3 1	1 4	0 0			33+		N	PIH-M85SS-V
RCIC-PT-4	2	TURB STM DISC PRESS 0-200 H22-P017	R 471 L.0/8.0	02	G082	259005		3 1								KG556110EAAA/WEN
RCIC-PT-5	2	RCIC PUMP SUCTION H22-P017	R 471 L.018.0	02	G082	259005		3 1								KG556110EAAA/WEK
RCIC-PT-7	2	TB STEAM INLET H22-P017	R 471 L.0/8.0	02	G082	259005		3 1								KG556110EAAA/WEN
RCIC-PT-8	2	TURBINE EXHAUST PRESSURE H22-P017	R 471 L.0/8.0	02	G082	259005		3 1								KG556110EAAA/WEL
RCIC-SPV-19B	2	SP-19B SHUT OFF RCIC-P-1 DISCH	R 567 M.3/5.3	220			D	3 1								
RCIC-SPV-25	2	SPV-RCIC-V-25 STM SPLY LNE IR-62	471 H4/6.8	58	A499	315004	A N	3 1	2 1	0 0			33+		N	WJHT831654
RCIC-SPV-26	2	SPV-RCIC-V-26 STM SPLY LNE DR	R 515 L.4/7.3	58	A499	315004	B N	3 1	2 1	0 0			33+		N	WJHT831654
RCIC-SPV-4	2	PILOT VALVE FOR AO RCIC-V-4 IR-62	R 474 H.4/6.8	58	A499	315004	A N	3 1	2 1	0 0			33+		N	WJHT831654
RCIC-SPV-5		PILOT VALVE FOR AO RCIC-V-5		58		315014	B N	3 1	2 1	0 0			33+		N	

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 515 H.8/7.3	B069			164C539P0015000							
RCIC-SPV-54	SPV FOR RCIC-V-54 IR-62	58	315004	A N	3 1	2 1	0.0			33+		N
2	R 471 H.4/6.8	A499			WJHT831654							
RCIC-SPV-65	REACTOR HEAD SPRAY IR -67-	58			2 1							
2	R 556 5.8/H.8	A499			WJHT831654							
RCIC-SPV-66	RCIC TO REACTOR ISOLATION VALVE IR	58	315004	X	2 1						F	
2	R 528 J.0/6.9	A499			WJHT831654							
RCIC-SS-1	RCIC TURB. OVERSPEED SWITCH	2			3 1							
2	R 427 H.7/6.9	N007			012006							
RCIC-TI-5	RCIC-P-1 DISCHARGE TEMP	02			3 0							
2	R 430 H.3/7.8											
REA-DPS-1A	REA-FN-1B CONTROL LOC-AL-	216	090003		3 3							
2	R 572 N.2/4.1	D282			MODEL 1627							
REA-DPS-1B	REA-FN-1A CONTROL LOC-AL-	216	090003		3 3							
2	R 572 N.2/4.1	D282			MODEL 1627							
REA-LMS-1	LIMIT SWITCH FOR VALVE REA-V-1	68-00	200011		1 3							
2	R 593 H.5/6.0	N007			7408100							
REA-LMS-2	LIMIT SWITCH FOR VALVE REA-V-2	68-00	200010		1 3							
2	R 593 H.5/6.2	N007			74080100							
REA-M-1A	MOTOR FOR FAN REA-FN-1A	22A	213049		3 3							
2	R 592 M.2/4.3	R165			XF330955A1-YA							
REA-M-1B	MOTOR FOR FAN REA-FN-1B	22A	213049		3 3							
2	R 585 M.2/4.3	R165			XF330955A2-YA							
REA-RE-19	RE FOR ELEVATED DISCH BETA SCINT	92B			1 3							
2	R 572											
REA-RE-9A	EXH AIR PLENUM RAD DETECTOR	02D17	277001	R D	1 3							
2	R 591 M.5/4.3	G080			TYPE 194X927G11							
REA-RE-9B	EXH AIR PLENUM RAD DETECTOR	02D17	277001	R D	1 3							
2	R 591 M.5/4.3	G080			TYPE 194X927G11							
REA-RE-9C	EXH AIR PLENUM RAD DETECTOR	02D17	277001	R D	1 3							
2	R 591 M.5/4.3	G080			TYPE 194X927G11							
REA-RE-9D	EXH AIR PLENUM RAD DETECTOR	02D17	277001	R D	1 3							
2	R 591 M.5/4.3	G080			TYPE 194X927G11							
REA-RLY-CR1	CONTROL RELAY FOR ISOLATION VALVES	59	283011		4 3						F	
2	R 527 J.0/6.9	A500			RK225052-CP							
REA-RLY-CR2	CONTROL RELAY FOR ISOLATION VALVES	59	283011		4 3						F	
2	R 554 H.7/8.2	AS00			RK225-052-CP							
REA-SPV-1	REACTOR BLDG. NORMALEXHAUST ISOLAT	58			1 3							
2	R 530 J/6.9	A499			WJHT831654							
REA-SPV-2	REACTOR BLDG. NORMALEXHAUST ISOLAT	58			1 3							
2	R 552 8.6/H.7	A499			WJHT831654							
REA-SR-27		92B			1 3							
2	R 572											
REA-SR-27+		92B			1 3							
1	R 572											
RFW-LMS-10A	24" CHECK RFW TO RPV (INSIDE PC)	41B		X N	2 3							
2	C 512 360 AZ											
RFW-LMS-10B	24" CHECK RFW TO RPV (INSIDE PC)	41B		N N	2 3							
2	C 512 360 AZ											

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EQUIPMENT NO.	LV	DESCRIPTION	PLANT LOCATION	CONTRACT	MFG	QID	QS	USE	TEST	ANL	MFG MODEL NO.	FREQ	HL
RFW-LMS-32A	2	LMS FOR AO VALVE	R 510 H6/5.7	41B			X N	2 3					
RFW-LMS-32B	2	LMS FOR AO VALVE	R 510 H6/6.3	41B			X N	2 3					
RFW-MO-65A	2	32.4HP MOTOR OPERATOR RFW-V-65A	R 505 H4/5.7	41A	L200	221042	A B	1 3	1 4	0 0	SMB-4-250/326UR4	29	Y
RFW-MO-65B	2	32.4HP MOTOR OPERATOR RFW-V-65B	R 505 H4/6.3	41A	L200	221042	A B	1 3	1 4	0 0	SMB-4-250/326UR4	29	Y
RFW-SPV-32A1	2	SOLENOID PILOT FOR RFW-V-32A IR-62	R 471 H.4/6.8	58	A499	315004	A N	1 3	2 1	0 0	WJHT831654	33+	N
RFW-SPV-32A2	2	SOLENOID PILOT FOR RFW-V-32A IR-62	R 471 H.4/6.8	58	A499	315004	A N	1 3	2 1	0 0	WJHT831654	33+	N
RFW-SPV-32B1	2	SOLENOID PILOT FOR RFW-V-32B IR-62	R 471 H.4/6.8	58	A499	315004	A N	1 3	2 1	0 0	WJHT831654	33+	N
RFW-SPV-32B2	2	SOLENOID PILOT FOR RFW-V-32B IR-62	R 471 H.4/6.8	58	A499	315004	A N	1 3	2 1	0 0	WJHT831654	33+	N
RHR-M-2A	2	800HP/105A MOTOR FOR RHR-P-2A	R 422 K/8.6	02E12	G080	213010	B N	1 3		0 1	5K6339XC122A/P236		Y
RHR-M-2B	2	800HP/105A MOTOR FOR RHR-P-2B	R 422 M/8.6	02E12	G080	213010	B N	1 3		0 1	5K6339XC122A/P236		Y
RHR-M-2C	2	800HP/105A MOTOR FOR RHR-P-2C	R 424 H.7/4.6	02E12	G082	213010	B N	1 0		0 1	SK6339XC122A		Y
RHR-M-3	2	15HP/18.5A MOTOR FOR RHR-P-3	R 429 H.4/4.8	35A	W120	213064	D D	2 3			75040786		
RHR-MO-11A	2	.33HP .95A MOTOR OPER. RHR-V-11A	R 475 K.2/8.1	41A	L200	221028	A B	1 1	1 4	0 0	SMB-000-5/K48	35	Y
RHR-MO-11B	2	.333HP MOTOR OPERATOR RHR-V-11B	R 475 L.8/8.1	41A	L200	221028	A B	1 1	1 4	0 0	SMB-000-5/K48	35	Y
RHR-MO-124A	2	1HP MOTOR OPERATOR RHR-V-124A	R 473 K.3/8.1	215	L200	221044	R R	2 1	1 4	0 0	SMC-04-5/42	33	N
RHR-MO-124B	2	5.3HP/16.8-8.4A MO FOR RHR-V-124B	R 473 K.9/8.1	215	L200	221044	R R	2 1	1 4	0 0	SMC-04-5/42	33	N
RHR-MO-125A	2	.33HP MOTOR OPERATOR RHR-V-125A	R 473 L.5/8.0	215	L200	221057	R R	2 1			SMC-04/42		
RHR-MO-125B	2	.33 HP MOTOR OPERATOR RHR-V-125B	R 473 L.4/8.0	215	L200	221044	R R	2 1	1 4	0 0	SMC-04/42	33	N
RHR-MO-134A	2	MOTOR OPERATOR RHR-V-134A	R 548 9.0/K.1	215	L200		X R	1 0					
RHR-MO-134B	2	MOTOR OPERATOR RHR-V-134B	P 548 L5/9.2	215	L200		X R	1 0					
RHR-MO-16A	2	10.6HP 13.8A MOTOR OPER. RHR-V-16A	R 556 4.4/L.0	41A	L200	221005	N N	1 0	1 4	0 0	SMB-2-80/C215Y	33	N
RHR-MO-16B	2	10.6HP 13.8A MOTOR OPER. RHR-V-16B	R 516 K.7/8.1	41A	L200	221005	N N	1 0	1 4	0 0	SMB-2-80/C215Y	33	N
RHR-MO-17A	2	10.6HP 13.8A MOTOR OPER. RHR-V-17A	R 556 4.4/L.0	41A	L200	221005	N N	1 0	1 4	0 0	MSB-2-80/C215Y	33	N
RHR-MO-17B	2	10.6HP 13.8A MOTOR OPER. RHR-V-17B	R 516 K.5/8.0	41A	L200	221005	N N	1 0	1 4	0 0	SNB-2-80/C215Y	33	N
RHR-MO-21		5.3HP 8.4A MOTOR OPER. RHR-V-21		41B		221065	A B	1 0	1 4	0 0		35	Y

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE	TEST	ANL	F/O	C	FREQ	TM	HL	MFG MODEL NO.
2	R 455 5.2/H.4	L200											SMB-3-80/213R3
RHR-MO-23	1.08HP 4.7A MOTOR OPER. RHR-V-23	41B	221009	A N	1 3	1 4	0 0			35		N	
2	R 552 5.4/M.6	L200											SMB-0-15/056F
RHR-MO-24A	5.3HP 8.3A MOTOR OPER. RHR-V-24A	41B	221040	A B	1 0	1 4	0 0			35		Y	
2	R 476 K.0/8.1	L200											SMB-3-80/213R3
RHR-MO-24B	5.3HP MOTOR OPERATOR RHR-V-24B	41B	221040	A B	1 0	1 4	0 0			35		Y	
2	R 476 M.2/8.1	L200											SMB-3-80/213R3
RHR-MO-26A	0.333HP MOTOR OPERATOR RHR-V-26A	41A	221028	A B	1 1	1 4	0 0			35		Y	
2	R 476 K.5/8.2	L200											SMB-000-5/K48
RHR-MO-26B	0.333HP MOTOR OPERATOR RHR-V-26B	41A	221028	A B	1 1	1 4	0 0			35		Y	
2	R 474 L.2/8.1	L200											SMB-000-5/K48
RHR-MO-27A	0.5HP MOTOR OPERATOR RHR-V-27A	41A	221022	A B	1 0	1 4	0 0			35		Y	
2	R 495 K.3/4.1	L200											SMB-00-7.5/L56
RHR-MO-3A	2.6HP MOTOR OPERATOR RHR-V-3A	41A	221032	A B	1 3	1 4	0 0			33		Y	
2	R 562 8.5/J.9	L200											SMB-1-40/T56
RHR-MO-3B	2.6HP MOTOR OPERATOR RHR-V-3B	41A	221032	A B	1 3	1 4	0 0			33		N	
2	R 560 8.4/M.2	L200											SMB-1-40/T56
RHR-MO-4A	2.66HP MOTOR OPERATOR RHR-V-4A	41A	221051	A B	1 0	1 4	0 0			35		Y	
2	R 460 K.0/8.3	L120											379507W
RHR-MO-4B	2.66HP MOTOR OPERATOR RHR-V-4B	41A	221014	A B	1 0	1 4	0 0			35		N	
2	R 450 L2/8.3	L200											SMB-0-40/T56
RHR-MO-4C	2.66HP MOTOR OPERATOR RHR-V-4C	41A	221064	A B	1 0	1 4	0 0			35		Y	
2	R 450 J.7/4.3	L200											SMB-0-40/T56
RHR-MO-40	.3HP 1.9A MOTOR OPER. RHR-V-40	41B	221024	A N	2 0	1 4	0 0			35		N	
2	R 553 8.4/M.6	L200											SMB-000-2/D56AA
RHR-MO-42A	19.5HP/25.2A MTR OP FOR RHR-V-42A	41A	221063	A B	1 0	1 4	0 0			35		Y	
2	R 528 J.0/6.0	L200											SMB-3-150/256UR3
RHR-MO-42B	19.5HP 25.2A MOTOR OPER. RHR-V-42B	41A	221006	A B	1 0	1 4	0 0			35	P	Y	
2	R 528 N.0/5.8	L200											SMB-3-150/256UR3
RHR-MO-42C	19.5HP 25.2A MOTOR OPER. RHR-V-42C	41A	221063	A B	1 0	1 4	0 0			35		Y	
2	R 528 J.0/6.0	L200											SMB-3-150/256UR3
RHR-MO-47A	2.6HP/11.5-5.75A MO FOR RHR-V-47A	41A	221032	A B	1 3	1 4	0 0			33		N	
2	R 582 M.3/8.4	L200											SMB-1-40/T56
RHR-MO-47B	2.6HP/11.5-5.75A MO FOR RHR-V-47B	41A	221032	R B	1 3	1 4	0 0			33		N	
2	R 526 N.1/9.4	L200											SMB-1-40/TS56
RHR-MO-48A	5.3HP 8.4A MOTOR OPER. RHR-V-48A	41B	221040	A B	1 3	1 4	0 0			35		N	
2	R 555 8.6/J.2	L200											SMB-3-80/213R3
RHR-MO-48B	5.3HP 8.4A MOTOR OPER. RHR-V-48B	41B	221040	A B	1 3	1 4	0 0			35		N	
2	R 555 8.4/N.0	L200											SMB-3-80/213R3
RHR-MO-49	0.333HP MOTOR OPERATOR RHR-V-49	41A	221028	A B	2 0	1 4	0 0			35		N	
2	R 553 8.4/M.7	L200											SMB-000-5/K48
RHR-MO-52A	5.2HP MOTOR OPERATOR RHR-V-52A	42A	221015	A B	1 1	1 4	0 0			35		N	
2	R 578 H.6/9.2	L200											SMB-00-10/L56
RHR-MO-52B	5.2HP MOTOR OPERATOR RHR-V-52B	42A	221015	A N	1 1	1 4	0 0			35		N	
2	R 578 N.1/8.6	L200											SMB-00-10/L56
RHR-MO-53A	8.2HP MOTOR OPERATOR RHR-V-53A	41B	221035	A B	1 3	1 4	0 0			35		Y	
2	R 515 K.9/4.1	L200											SMB-2-60/215RZ
RHR-MO-53B	7.9HP 10A MOTOR OPER. RHR-V-53B	41B	221035	A B	1 3	1 4	0 0			35		Y	
2	R 515 L.2/8.0	L200											SMB-2-60/215RZ

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG. MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
RHR-MO-6A	2.66HP MOTOR OPERATOR RHR-V-6A	41A	221063	A B	1 3	1 4	0 0			35		N
2	R 430 K.8/8.3	L200			SMB-0-25/R56							
RHR-MO-6B	2.66HP MOTOR OPERATOR RHR-V-6B	41A	221048	A B	1 3	1 4	0 0			35		N
2	R 430 L.8/8.5	G802			SMB-0-25/R56							
RHR-MO-64A	2.66HP MOTOR OPERATOR RHR-FCV-64A	215	221049	B R	1 3	1 4	0 0			35		N
2	R 446 K.0/9.3	L120			SMB-000-5/48							
RHR-MO-64B	MOTOR OPERATOR RHR-FCV-64B	215	221049	R R	1 3							
2	R 445 M/9.0	L200			SMB-000-5/48							
RHR-MO-64C	MOTOR OPERATOR RHR-FCV-64C	215	221049	B R	1 0	1 4	0 0			35		N
2	R 446 J.0/5.0	L200			SMB-000-5/48							
RHR-MO-68A	2.6HP 5.75A MOTOR OPER. RHR-V-68A	41A	221014	A B	2 0	1 4	0 0			35		N
2	R 558 9.3/J.1	L200			SMB-0-40/T56							
RHR-MO-68B	2.6HP 5.75A MOTOR OPER. RHR-V-68B	41A	221014	A B	2 0	1 4	0 0			35		N
2	R 555 9.3/M.8	L200			SMB-0-40/T56							
RHR-MO-73A	2.0HP MOTOR OPERATOR RHR-V-73A	215		X R	1 1							
2	R 572 J8/9	L200										
RHR-MO-73B	2.0HP MOTOR OPERATOR RHR-V-73B	215		X R	1 3							
2	R 572	L200										
RHR-MO-74A	2.0HP MOTOR OPERATOR RHR-V-74A	215		X R	1 3							
2	R 572	L200										
RHR-MO-74B	2.6HP MOTOR OPERATOR RHR-V-74B	215		X R	1 3							
2	R 572	L200										
RHR-MO-8	5.8HP MOTOR OPERATOR RHR-V-8	41A	221036	A N	1 3	1 4	0 0			35		N
2	R 512 M.9/7.3	L200			SMB-2-80/DS224B							
RHR-MO-87A	3.89HP MOTOR OPERATOR RHR-V-87A	42A	221007	N N	1 1							
2	R 578 J/9.3	L200			SMB-00-10/L56							
RHR-MO-87B	MOTOR OPERATOR RHR-V-87B	42A	221007	N N	1 1							
2	R 578 M.8/8.6	L200			SMB-00-10/L56							
RHR-MO-9	10.6HP MOTOR OPERATOR RHR-V-9	41A	221035	R B	1 3							
2	C 509 150 D AZ R23	L200			SMB-2-60/215R2							
RHR-MO-93	MOTOR OPERATOR FOR RHR-V-116	02G11	221014	R B	1 0							
2	R 552 8.6/N.0	L200			SMB-0-40/T56							
RHR-MO-94	MOTOR OPERATOR FOR RHR-V-115	02G11	221014	R B	1 0							
2	R 552 9.0/N.0	L200			SMB-0-40/T56							
RHR-MO-99A	MOTOR OPERATOR FOR RHR-V-123A	215	221027	R R	2 3						P	
2	C 514 95 D AZ R28	L200			SMB-000-5/P48							
RHR-MO-99B	MOTOR OPERATOR FOR RHR-V-123B	215	221027	R R	2 3						P	
2	C 510 270D AZ R27	L200			SMB-000-5/P48							
RHR-PS-16A	PRESSURE SWITCH	02E12	256048	N N	1 0							
2	R 501 J.6/3.6	S382			SN3-X105TT							
RHR-PS-16B	PRESSURE SWITCH	02E12	256046	A N	1 0	1 4	0 0			33+		N
2	R 501 H.8/9.3	S382			SN.AA3X105TT							
RHR-PS-16C	RHR PRESSURE - -	02E12	256046	A N	1 0	1 4	0 0			33+		N
2	R 501 H.8/9.3	S382			SN-AA3X105TT							
RHR-PS-18	PRESS SWITCH SHUTDOWN COOLING	02		X	2 0							
2	R 501 M.8/7.9											
RHR-PS-19A	ADS PERMISSIVE, PMP A H22-P018	02	256046		1 0							
2	R 505 J.7/3.7	S382			SN-AA3-X103T+							
RHR-PS-19B	ADS PERMISSIVE PMP B H22-P021	02	256046		1 0						F	

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EQUIPMENT NO.	LV	DESCRIPTION	PLANT LOCATION	CONTRACT	MFG	QID	QS	USE	MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
	2		R 501 L/13		S382				SN-AA3X105TT							
RHR-PS-19C	2	ADS PERMISSIVE PMP C H22-P021	R 501 L/13	02	S382	256046		1 0	SN-AA3X105TT						F	
RHR-PT-26A	2	PRESSURE TRANSMITTER RCIC LOOPA	R 597 J.0/9.0	02	G082	259009	X	1 1	50-5561100AAA1							
RHR-PT-26B	2	PRESSURE TRANSMITTER RCIC LOOPB	R 597 N.0/8.3	02	G082	259009	X	1 1	50-556110DAAA1							
RHR-PT-28	2	PRESSURE TRANSMITTER RCIC LOOPA	R 503 J.0/9.4	02	G082	259009		2 1	50-555111BN1AA4WCF							
RHR-RMS-RSCS3B	2	RSD RHR HX TO RCIC VLV C61-P001	W 467 J6/14.3	02C61	G080	285007	B B	4 1	SBM	1 4	0 0			33		N
RHR-SPV-41A	2	SOLENOID FOR TESTABLE CHECK V-41A	R 501 N.8/5.3	58	A499	315004	A N	3 0	WJHT831654	2 1	0 0			33+	R	N
RHR-SPV-41B	2	SOLENOID FOR TESTABLE CHECK V-41B	C 568 158 D AZ R19	58	A499	315004	A N	3 0	WJHT831654	2 1	0 0			33+	R	N
RHR-SPV-41C	2	SOLENOID FOR TESTABLE CHECK 41C	R 501 L.2/9.3	58	A499	315004		3 0	WJHT831654							
RHR-SPV-50A	2	RHR SHUTDOWN COOLING LOOP A ISOLAT	C 554 5.8/M.8	58	A499		A N	3 0	WIHT851654	2 1	0 0			33+	R	N
RHR-SPV-51A	2	RCIC TO RHR HEAT EXCH A IR -71-	R 528 J.0/6.9	58	A499	315004	A N	1 1	WJHT831654	2 1	0 0			33+	R	N
RHR-SPV-51B	2	RHR-V-51B IR -69-	R 578 M.8/8.6	58	F130	315016		1 1	TYPE-67F-F225						F	
RHR-SPV-65A	2	RHR HEAT EXCHANGER A LEVEL CONTROL	R 528 J.0/6.9	58	A499	315004	A N	3 1	WJHT831654	2 1	0 0			33+	R	N
RHR-SPV-65B	2	RHR HEAT EXCHANGER B LEVEL CONTROL	R 526 N.0/8.2	58	A499	315004	A N	3 1	WJHT831654	2 1	0 0			33+	R	N
RHR-SPV-89	2	SOLENOID VLVE FOR RHR-V-89	R	58					WA200D							
RHR-SV-182	2		R 548 L.0/9.0	215	M090			2 0								
RHR-SV-60A	2		R 548 N.0/8.3	215	M090			2 0	282033							
RHR-SV-60B	2		R 548 K.0/8.3	215	M090			2 0	282033							
RHR-SV-75A	2			215	M090			2 0	282033							
RHR-SV-75B	2			215	M090			2 0	282033							
RHR-TE-27A	2	TEMPERATURE ELEMENT (PRIMARY)	R 565 K/8	02	G082	339011	T	1 3	ITEM#4		0 1			99+		N
RHR-TE-27B	2	TEMPERATURE ELEMENT (PRIMARY)	R 548	02	G082	339011	T	1 3	ITEM #4		0 1			99+		N
RHR-TE-4A	2	TEMPERATURE ELEMENT (PRIMARY)	R 572	02			T	2 1			0 1			99+		N
RHR-TE-4B	2	TEMPERATURE ELEMENT (PRIMARY)	R 572	02			T	2 1			0 1			99+		N
RHR-TE-5A	2	TEMPERATURE ELEMENT	R 560 L.0/8.3	02E12			T	2 1			0 1			99+		N

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
RHR-TE-5B	TEMPERATURE ELEMENT	02E12		T	2 1		0 1			99+		N
2	R 560 L.0/8.3											
ROA-DPS-11A	ROA-FN-1B CONTROL LOC-AL-	216	090003		3 3							
2	R	D282			MODEL 1627							
ROA-DPS-11B	ROA-FN-1A CONTROL LOC-AL-	216	090003		3 3							
2	R	D282			MODEL 1627							
ROA-LMS-10					1 0							
2	R 542 M.5/3.9	N007			70050100							
ROA-LMS-11					1 0							
2	R 542 M.7/8.1	N007			70050100							
ROA-LMS-12					1 0							
2	R 480 J.0/8.3	N007			70050100							
ROA-LMS-13					1 0							
2	R 591 M.5/6.0	N007			70050100							
ROA-LMS-14					1 0							
2	R 591 M.9/7.4	N007			70050100							
ROA-LMS-15					1 0							
2	R 563 M.8/4.8	N007			70050100							
ROA-LMS-17					1 0							
2	R 563 M.8/4.2	N007			70050100							
ROA-LMS-19					1 0							
2	R 548 L.0/4.0	N007			70050100							
ROA-M-1A	200HP/228A MOTOR FOR ROA-FN-1A	64	213048		3 3							
2	R 572 N2/4.8	R165			P4468024A-G5-LZ/445T							
ROA-M-1B	200HP/228A MOTOR FOR ROA-FN-1B	64			3 3							
2	R 572	R165										
ROA-SPV-10	DIV II MCC ROOM DAMPER SOL PILOT -	216	315002	N N	1 0							
2	R 522 M.6/4	A610			HBX8320A-1							
ROA-SPV-100	ROA-V-1 SOL PILOT VA - -	216	315004	B N	1 0	2 1	0 0			33		N
2	R 548 M.8/5.7	A610			WJHT8316E35F							
ROA-SPV-11	DIV 1 MCC ROOM DAMPER SOL PILOT -	216	315002	N N	1 0							
2	R 522 M.4/8.3	A610			HBX8320A-1							
ROA-SPV-12	DC MCC ROOM DAMPER SOL PILOT - -	216	315002	N N	1 0							
2	R 471 M.4/8	A610			HBX8320A-1							
ROA-SPV-13	H2 RECOMB MCC RM (DIV I) DAMPER SO	216	315002	N N	1 0							
2	R 575 M.4/5.7	A610			HBX8320A-1							
ROA-SPV-14	H2 RECOMB MCC RM (DIV II) DAMPER S	216	315002	N N	1 0							
2	R 572 M.8/7.8	A610			HBX8320A-1							
ROA-SPV-15	SOLENOID PILOT VALVE	216	315002	X N	1 0							
2	R 548 M.4/4.3	A610			HBX8320A-1							
ROA-SPV-17	ANALYZER RM 1B DAMPER SOL PILOT LO	216	315002	N N	1 0							
2	R 548 M.4/4.4	A610			HBX8320A-1							
ROA-SPV-200	ROA-V-2 SOL PILOT VA - -	216	315004	B N	1 0	2 1	0 0			33		N
2	R 528 N/8.2	A499			WJHT8316E35F							
RPS-POS-8B					4 0							
2												
RPS-POS-8D					4 0							
2												
RPS-PS-2A	HIGH DRYWELL PRESSURE H22-P004	02C72	256043	A N	1 0	1 4	0 0			33+		N

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 525 4.5/7.1	S382			RN-AA4-X10TT							
RPS-PS-2B	PRIMARY CONTAINMENT PRESS	02C72	256046	A N	1 0	1 4	0 0			33+	F	N
2	P 525 M.8/6.6	S382			12N-AA4-X10TT							
RPS-PS-2C	HIGH DRYWELL PRESSURE H22-P005	02C72	256044	N N	1 0							
2	R 526 N8/5.8	S382			12N-AA5-X10TT							
RPS-PS-2D	HIGH DRYWELL PRESSURE H22-P026	02C72	256044	A N	1 0	1 4	0 0			33+		N
2	R 528 H.4/4.2	S382			12N-AAS-X10S1TT							
RPS-PS-3A		02C72	256018	B D	1 0	1 4	0 0			00		N
2	T 471 C4/6.3	B069			B2T-M12SS							
RPS-PS-3B		02C72	256018	B D	1 0	1 4	0 0			00		N
2	T 471 B5/6.3	B069			B2T-M12SS							
RPS-PS-3C		02C72	256018	B D	1 0	1 4	0 0			00		N
2	T 471 C4/6.3	B069			B2T-M12SS							
RPS-PS-3D		02C72	256018	B D	1 0	1 4	0 0			00		N
2	T 471 B5/6.3	B069			B2T-M12SS							
RPS-PS-4	PRIM. CONT HIGH PRESS - -	02C72	256012	X N	1 0							
2	R 522 J5/7.2	B080			288A							
RPS-PS-5A	PRESS SW TURB CONTR VLV FAST CLOSR	220	256037	B D	4 0	1 4	0 0			50		N
2	T 471 D/5	B074			TC9622-3							
RPS-PS-5B	PRESS SW TURB CONTR VLV FAST CLOSR	220	256037	B D	4 0	1 4	0 0			50		N
2	T 471 D/5	B074			TC9622-3							
RPS-PS-5C	PRESS SW TURB CONTR VLV FAST CLOSR	220	256037	B D	4 0	1 4	0 0			50		N
2	T 471 D/5	B074			TC9622-3							
RPS-PS-5D	PRESS SW TURB CONTR VLV FAST CLOSR	220	256037	B D	4 0	1 4	0 0			50		N
2	T 471 D/5	B074			TC9622-3							
RRA-M-1	3HP/4.7A MOTOR FOR RRA-FN-1	67	213025	A B	1 2							
2	R 445 H.7/4.3	W120			SBFC							
RRA-M-10	3HP/4.65A MOPTOR FOR RRA-FN-10	67	213021	A B	1 0							
2	R 522 N3/3.8	W120			FBFC/182T							
RRA-M-11	3HP/4.65A MOTOR FOR RRA-FN-11	67	213021	A B	1 0							
2	R 522 H5/8	W120			FBFC/182T							
RRA-M-12	5HP/5.5A MOTOR FOR RRA-FN-12	216	213029	R B	1 0							
2	R 490 H.6/7.8	W120			TBAM							
RRA-M-13	3HP/?A MOTOR FOR RRA-FN-13	216	213029	R D	1 0						F	
2	R 585 M.3/6.1	W120			TBAN							
RRA-M-14	3HP/5.5A MOTOR FOR RRA-FN-14	216	213065	R D	1 0						F	
2	R 585 M.7/8.0	W120			7905-01-003							
RRA-M-15	3HP/5.4A MOTOR FOR RRA-FN-15	216		X D	1 0							
2	R 548 M5/4.5	W120			TBAN							
RRA-M-17	3HP/5.7A MOTOR FOR RRA-FN-17	216	213029	X B	1 0							
2	P 548 M5/4.7	W120			TBAN							
RRA-M-19		215		P D	1 3							
2	R 548 L10/8.4											
RRA-M-2	3HP/4.65A MOTOR FOR RRA-FN-2	67	213026	A B	1 2							
2	R 445 L.0/8.3	W120			SBFC							
RRA-M-20		215		P D	1 3							
2	R 548 L8/8.4											
RRA-M-3	3HP/4.65A MOTOR FOR RRA-FN-3	67	213055	A B	1 2							
2	R 445 M/8.3	W120			7BFC							

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EQUIPMENT NO.	LV	DESCRIPTION	PLANT LOCATION	CONTRACT	MFG	QID	QS	USE	MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
RRA-M-4	2	10HP/14A MOTOR FOR RRA-FN-4	R 445 M.5/4.1	67	W120	213053	A B	1 0	TBFC							
RRA-M-5	2	5HP/6.8A MOTOR FOR RRA-FN-5	R 445 K7/3.7	67	W120	213054	A B	1 0	5BFC							
RRA-M-6	2	2HP/3A MOTOR FOR RRA-FN-6	R 445 H.7/7.7	67	W120	213053	A B	1 2	TBFC							
RRC-LMS-16A	2		R	215				2 0								
RRC-LMS-16B	2		R	215				2 0								
RRC-MO-16A	2	2HP MOTOR OPERATOR FOR RRC-V-16A	R 504 J.3/7.4	215	L200		X R	2 0								
RRC-MO-16B	2	2 HP MOTOR OPERATOR FOR RRC-V-16B	R 508 J2/7.3	215	L200		R R	2 0								
RRC-MO-23A	2	MOTOR OPERATOR RRC-V-23A	C 510 160 D AZ R15	02	L200		B	2 0	SMB-2-25	1 4	0 0			33+		Y
RRC-MO-23B	2	6.4 HP MOTOR OPER FOR RRC-V-23B	C 510 340 D AZ R17	02	L200		B	2 0	SMB-2-25	1 4	0 0			33+		Y
RRC-MO-67A	2	15.8HP MOTOR OPER FOPR RRC-V-67A	C 514 102 D AZ R20	02	L200		B	2 0	SMB-3-60	1 4	0.0			33+		Y
RRC-MO-67B	2	15.8 HP MOTOR OPER FOR RRC-V-67B	C 514 275 D AZ R20	02	L200		B	2 0	SMB-3-60	1 4	0 0			33+		Y
RRC-POS-19	2		C 506 319 D AZ R35	215				2 0								
RRC-POS-20	2		R 522 J/6.7	215				2 0								
RRC-SV-19	2	1.0" SOLENOID SAMPLING VALVE	C 506 319 D AZ R35	215	B350	324003		2 0	P 81560							
RRC-SV-23	2	1.0" SOLENOID SAMPLING VALVE	R 522 J/6.7	215	B350	324003		2 0	81560							
RWCU-E/S-600	2	RWCU INSTR POWER SUPPLY	W 501 K.8/12	02G33	D110	105001	R B	4 0	C-24-53 P/P159C4560							
RWCU-LPS-100	2							3 3								
RWCU-LPS-101	2							3 3								
RWCU-LMS-102	2							3 3								
RWCU-LPS-106	2							3 3								
RWCU-MO-1	2	1.6HP 4.0A MOTOR OPER. RWCU-V-1	C 540 150 DEG	41A	L200	221019	A B	1 0	SMB-0-25/R56	1 4	0 0			35		Y
RWCU-MO-100	2	.7HP 2.3A MOTOR OPER. RRC-V-100	C	41A	R165			3 3	SMB-00-10/L56							
RWCU-MO-101	2	0.66HP MOTOR OPERATOR RWCU-V-101	C	41A				3 3	SMB-00-10/L56							
RWCU-MO-102	2	1.6HP 4A MOTOR OPER. RWCU-V-102	C	41B	R165			3 3	SMB-1-25/R56							
RWCU-MO-106		0.66HP MOTOR OPERATOR RWCU-V-106		41A				3 3								

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EQUIPMENT NO.	LV	DESCRIPTION	PLANT LOCATION	CONTRACT	MFG	QID	QS	USE	TEST	ANL	F/O	C	FREQ	TM	HL	MFG MODEL NO.
	2		C													SMR-00-10/L56
RWCU-MC-4	2	1.8HP 7.5A MOTOR OPER. RWCU-V-4	R 537 H.7/5.0	41A	L200	221011	A N	1 0	1 4	0 0			35	P	N	SMB-0-25/DK56H
RWCU-MC-40	2	1.6HP MOTOR OPER. RWCU-V-40	P 515 H.6/5.1	41A	L200	221019	A B	1 0	1 4	0 0			35		N	SMB-0-25/R56
S-SR-13+	1	H2/02 SAMPLE RACK COMPOSITE	R 548 M6/4.5					1 0								
S-SR-14+	1	H2/02 SAMPLE RACK COMPOSITE	R 548 M6/4.6					1 0								
S-SR-42+	1		R 548					1 3								
S-SR-43+	1		R 548					1 3								
SGT-EHC-1A1	2	22.5 KW ELECTRIC HEATING COIL	R 576 H.7/5.6	18	C332	109008	B N	1 0						F		2747499
SGT-EHC-1A2	2	ELECTRIC HEATING COIL	R 576 H.7/5.6	18	C332	109008	B N	1 0						F		2747499
SGT-EHC-1B1	2	22.5 KW ELECTRIC HEATING COIL	R 576 H.7/5.6	18	C332	109008	B N	1 0						F		2747499
SGT-EHC-1B2	2	ELECTRIC HEATING COIL	R 576 J.3/5.6	18	C332	109008	B N	1 0						F		2747499
SGT-EHC-1A1	2	SGT-FN-1A1 INLET VANES OPER	R 575 H.3/7.8	28	I207	110004	B N	1 0	2 1	0 0			33	F	N	NH91G2073E1F-2N2-001
SGT-EHC-1A2	2	SGT-FN-1A2 INLET VANES OPER	R 575 H.6/7.8	28	I207	110004	B N	1 0	2 1	0 0			33	F	N	NH91G2073E1F-2N20
SGT-EHO-1B1	2	SGT-FN-1B1 INLET VANES OPER	R 575 J.2/7.8	28	I207	110004	B N	1 0	2 1	0 0			33	F	N	NH91G2073E1F-2N20
SGT-EHC-1B2	2	SGT-FN-1B2 INLET VANES OPER	R 575 J.4/7.8	28	I207	110004	B N	1 0	2 1	0 0			33	F	N	NH91G2073E1F-2N20
SGT-ESH-1A	2	1.38 KW ELECTRIC STRIP HEATER	R 582 H.7/6.2	18	C332	122001	B N	3 0						F		PT-502
SGT-ESH-1B	2	1.38 KW ELECTRIC STRIP HEATER	R 582 J.3/6.2	18	C332	122001	B N	3 0						F		PT-502
SGT-ESH-2A	2	1.38 KW ELECTRIC STRIP HEATER	R 582 H.7/6.8	18	C332	122001	B N	3 0						F		PT-502
SGT-ESH-2B	2	1.38 KW ELECTRIC HEATER	R 582 J.3/6.8	18	C332	122001	B N	3 0						F		PT-502
SGT-M-1A1	2	25HP/61-30.5A MOTOR FOR SGT-FN-1A1	R 576 H.7/76	28	W120	213030	B B	1 0						F		TBDP
SGT-M-1A2	2	25HP/61-30.5A MOTOR FOR SGT-FN-1A2	P 576 H.9/7.6	28	W720	213030	B B	1 0						F		TBDP
SGT-M-1B1	2	25HP/61-30.5A MOTOR FOR SGT-FN-1B1	R 576 J.2/7.6	28	W120	213030	B B	1 0						F		TBDP
SGT-M-1B2	2	25HP/61-30.5A MOTOR FOR SGT-FN-1B2	R 576 J.7/7.7	28	W120	213056	B B	1 0						F		TBD
SGT-ME-16A	2	MOISTURE ELEMENT AFTER SGT-MS-1A	P 582 H.7/5.5	18	H349	217002		3 0						F		XMS-7AP
SGT-ME-16B	2	MOISTURE ELEMENT AFTER SGT-MS-1B	R 592 J.3/5.5	18	H349	217002		3 0						F		XMS-7AP

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
SGT-ME-17A	MOISTURE ELEMENT AFTER SGT-MS-1A	18	217002		3 0						F	
2	R 582 H.7/5.5	H349			XMS-7AP							
SGT-ME-17B	MOISTURE ELEMENT AFTER SGT-MS-1B	18	217002		3 0						F	
2	R 582 J.3/5.5	H349			XMS-7AP							
SGT-ME-3A	SGT-FU-1A MOIST. AFTER SGT-FH-1A-1	18	217002		3 0						F	
2	R 582 H.7/6.2	H349			XMS-7AP							
SGT-ME-3B	SGT-FU-1B MOIST. AFTER SGT-HF-1B-1	18	217002		3 0						F	
2	R 582 J.3/6.2	H349			XMS-7AP							
SGT-ME-4A	SGT-FU-1A MOIST. AFTER SGT-FH-1A-1	18			3 0						F	
2	R 582 H.7/6.2	H349			XMS-7AP							
SGT-ME-4B	SGT-FU-1B MOIST. AFTER SGT-HE-1B-1	18			3 0						F	
2	R 582 J.3/6.2	H349			XMS-7AP							
SGT-ME-5A	SGT-FU-1A MOIST. AFTER SGT-CF-1A-1	18			3 0						F	
2	R 582 H.7/5.5	H349			XMS-7AP							
SGT-ME-5B	SGT-FU-1B MOIST. AFTER SGT-CF-1B-1	18			3 0						F	
2	R 582 J.3/5.5	H349			XMS-7AP							
SGT-ME-6A	SGT-FU-1A MOIST. AFTER SGT-MS-1A L	18	217001	B R	1 0						F	
2	R 582 N.7/5.5	H349			SWAGLOCK							
SGT-ME-6B	SGT-FU-1B MOIST. AFTER SGT-MS-1B L	18	217002	B R	1 0						F	
2	R 582 J.3/5.5	H349			XMS-7AP							
SGT-ME-7A	SGT-FU-1A MOIST. AFTER SGT-MS-1A L	18	217002.	B R	1 0						F	
2	R 582 H.7/5.5	H349			XMS-7AP							
SGT-ME-7B	SGT-FU-1B MOIST. AFTER SGT-MS-1B L	18	217002	B R	1 0						F	
2	R 582 J.3/5.5	H349			XMS-7AP							
SGT-MO-1A	1.3HP/4.8-2.4A MOTOR OPER SGT-V-1A/	68	221017	A B	1 0	1	0 0				F	N
2	R 582 J.3/5.5	L200			SMB-00-10/P58							
SGT-MO-1B	1.3HP/4.8-2.4A MOTOR OPER SGT-V-1B	68	221017	A B	1 0	1	0 0				F	N
2	R 584 J4/5.2	L200			SMB-00-10/P58							
SGT-MO-3A1	1.3HP 2.4A MOTOR OPER. SGT-V-3A1	68	221052	A B	1 0	1 4					F	N
2	R 578 H.4/7.6	L200			SMB-00-10/P56							
SGT-MO-3A2	1.33HP 2.4A MOTOR OPER. SGT-V-3A2	68	221052	A B	1 0	1 4	0 0				F	N
2	R 578 H.6/7.6	L200			SMB-00-10/P56							
SGT-MO-3B1	1.33HP 2.4A MOTOR OPER. SGT-V-3B1	68	221052	A B	1 0	1 4	0 0				F	N
2	R 578 J.4/7.6	L200			SMB-00-10/P56							
SGT-MO-3B2	1.33HP 2.4A MOTOR OPER. SGT-V-3B2	68	221052	A B	1 0	1 4	0 0				F	N
2	R 578 J.6/7.6	L200			SMB-00-10/P56							
SGT-MO-4A1	1.3HP 2.4A MOTOR OPER. SGT-V-4A1	68	221052	A B	1 0	1 4	0 0			33	F	N
2	R 578 H.4/7.0	L200			SMB-00-10/P56							
SGT-MO-4A2	1.3HP 2.4A MOTOR OPER. SGT-V-4A2	68	221052	A B	1 0	1 4	0 0			33	F	N
2	R 588 J.1/7.0	L200			SMB-00-10/P56							
SGT-MO-4B1	1.33HP 2.4A MOTOR OPER. SGT-V-4B1	68	221052	A B	1 0	1 4	0 0			33		N
2	R 587 H.8/7.0	L200			SMB-00-10/P56							
SGT-MO-4B2	1.33HP 2.4A MOTOR OPER. SGT-V-4B2	68	221052	A B	1 0	1 4	0 0			33		N
2	R 587 J.8/7.0	L200			SMB-00-10/P56							
SGT-MO-5A1	1.33HP 2.4A MOTOR OPER. SGT-V-5A1	68	221052	A B	1 0	1 4	0 0			33		N
2	R 587 H.4/7.0	L200			SMB-00-10/P56							
SGT-MO-5A2	1.33HP 2.4A MOTOR OPER. SGT-V-5A2	68	221052	A B	1 0	1 4	0 0			33		N
2	R 587 H.9/7.0	L200			SMB-00-10/P56							
SGT-MO-5B1	1.33HP 2.4A MOTOR OPER. SGT-V-5B1	68	221052	A B	1 0	1 4	0 0			33		N

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 587 J.6/7.0	L200			SMB-00-10/P56							
SGT-MO-582	1.33HP 2.4A MOTOR OPER. SGT-V-582	68	221016	A B	1 0	1 4	0 0			33		N
2	P 578 H.6/3.6	L200			SMB-00-10/P56							
SGT-PP-EHC/1A1+	HEATER CONTROL BOX	18			1 0							
1	R 572 M.0/6.0	F030										
SGT-PP-EHC/1A2+	HEATER CONTROL BOX	18			1 0							
1	R 572 M.0/8.3	F030										
SGT-PP-EHC/1B1+	HEATER CONTROL BOX	18			1 0							
1	R 572 M.0/6.0	F030										
SGT-PP-EHC/1B2+	HEATER CONTROL BOX	18			1 0							
1	P 572 M.0/8.3	F030										
SGT-PP-ESH/1A+	HEATER CONTROL BOX	18			3 0							
1	R 572 H.3/6.0	F030										
SGT-PP-ESH/1B+	HEATER CONTROL BOX	18			3 0							
1	R 572 K.0/6.0	F030										
SGT-PP-ESH/2A+	HEATER CONTROL BOX	18			3 0							
1	R 572 H.3/7.1	F030										
SGT-PP-ESH/2B+	HEATER CONTROL BOX	18			3 0							
1	R 572 J.0/7.0	F030										
SGT-PS-EH1A11	CONTROL OF HEATER SGT-FHC-1A1	18			2 0							
2	R 572 H.4/5.9	B135			A900-20C0EAA-20							
SGT-PS-EH1A21	CONTROL OF HEATER SGT-EHC-1A2	18			2 0							
2	R 572 H.8/6.0	B135			A900-20C0EAA-20							
SGT-PS-EH1B11	CONTROL OF HEATER SGT-PS-EH1B11	18			2 0							
2	R 572 J.5/16.0	B135			A900-20C0EAA-20							
SGT-PS-EH1B21	CONTROL OF HEATER SGT-EHC-1B2	18			2 0							
2	R 572 J.2/6.0	B135			A900-20C0EAA-20							
SGT-SPV-F1	1/2 S.0 DELUGE VA ASSY SGT-DV-1A-	18	315007	B N	2 0						W	
2	R 578 H.6/3.7	A499			8211D2M0							
SGT-SPV-F2	1/2 S.0 DELUGE VA ASSY SGT-DV-1A-	18	315007	B N	2 0						W	
2	R 578 H.6/3.7	A499			8211D2M0							
SGT-SPV-F3	1/2 S.0 DELUGE VA ASSY SGT-DV-1A-	18	315007	B N	2 0						W	
2	R 578 H.6/3.6	A499			8211D2M0							
SGT-SPV-F4	1/2 S.0 DELUGE VA ASSY SGT-DV-1B-	18	315007	B N	2 0						W	
2	R 578 H.6/3.6	A499			8211D2M0							
SGT-SPV-F5	1/2 S.0 DELUGE VA ASSY SGT-DV-1B-	18	315007	B N	2 0						W	
2	R 578 H.6/3.6	A499			8211D2M0							
SGT-SPV-F6	1/2 S.0 DELUGE VA ASSY SGT-DV-1B-	18	315007	B N	2 0						W	
2	R 578 H.6/3.6	A499			8211D2M0							
SGT-SPV-2A	SOL. PILOT VLV FOR SGT-V-2A	220	315005	B N	1 0	2 4	0 0			35		N
2	R 578 H.6/3.6	A499			8210D2M0							
SGT-SPV-2B	SOL. PILOT VLV. FOR SGT-V-2B	220	315005	B N	1 0	2 4	0 0			35		N
2	R 578 H.6/3.6	A499			8210D2M0							
SGT-TE-1A	SGT-FU-1A TEMP. BEFORE SGT-EHC-1A-	18	339009		3 0						F	
2	R 582 H.7/5.5	C332			TA-20(JD)-TW157-18							
SGT-TE-1A1	SGT-FU-1A TEMP. AFTER SGT-ESH-1A L	18	339001	B N	3 0						F	
2	P 582 H.7/6.4	A160			21110-0							
SGT-TE-1A2	SGT-FU-1A TEMP. AFTER SGT-CF-1A-1	18	339001	B N	3 0						F	
2	R 582 H.7/6.4	A160			21110-0							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
SGT-TE-1B	SGT-FU-1B TEMP. BEFORE SGT-EHC-1B-	18	339009		3 0						F	
2	R 582 J.3/5.5	C332			TA-20(JD)-TW157-18							
SGT-TE-1B1	SGT-FU-1B TEMP. AFTER SGT-ESH-1B L	18	339001	B N	3 0						F	
2	R 582 J.3/6.4	A160			21110-0							
SGT-TE-1B2	SGT-FU-1B TEMP. AFTER SGT-CF-1B-1	18	339001	B N	3 0						F	
2	R 582 J.3/6.4	A160			21110-0							
SGT-TE-2A1	SGT-FU-1A TEMP. BEFORE SGT-CF-1A-2	18	339001	B N	3 0						F	
2	R 582 H.7/6.6	A160			21110-0							
SGT-TE-2A2	SGT-FU-1A TEMP. AFTER SGT-CF-1A-2	18	339001	B N	3 0						F	
2	R 582 H.7/6.6	A160			21110-0							
SGT-TE-2B1	SGT-FU-1B TEMP. BEFORE SGT-CF-1B-2	18	339001	B N	3 0						F	
2	R 582 J.7/6.6	A160			21110-0							
SGT-TE-2B2	SGT-FU-1B TEMP. AFTER SGT-CF-1B-2	18	339001	B N	3 0						F	
2	R 582 J.7/6.6	A160			21110-0							
SGT-TE-6A	SGT-FU-1A TEMP. AFTER SGT-CF-1A-1	18			3 0							
2	R 572 H.6/6.0											
SGT-TE-6A1	SGT-FU-1A; SGT-CF-1A-1 TEMPERATURE	18	339001	B N	2 0							
2	R 572 H8/5.5	F081			21110-0							
SGT-TE-6B	SGT-FU-1B TEMP. AFTER SGT-CF-1B-1	18		B	3 0							
2	R 572 J.5/6.0	F081			21110-0							
SGT-TE-6B1	SGT-FU-1B; SGT-CF-1B-1 TEMPERATURE	18	339001	B N	2 0							
2	R 572 J4/5.5	F081			21110-0							
SGT-TE-7A	SGT-FU-1A TEMP. AFTER SGT-CF-1A-2	18		B	3 0							
2	R 572 H.6/7.2	F081			21110-0							
SGT-TE-7A1	SGT-FU-1A; SGT-CF-1A-2 TEMPERATURE	18	339001	B N	2 0							
2	R 572 H8/5.5	F081			21110-0							
SGT-TE-7B	SGT-FU-1B TEMP. AFTER SGT-CF-1B-2	18		B	3 0							
2	R 572 J.5/7.2	F081			21110-0							
SGT-TE-7B1	SGT-FU-1B; SGT-CF-1B-2 TEMPERATURE	18	339001	B N	2 0							
2	R 572 J4/5.5	F081			21110-0							
SGT-TE-8A1	SGT-FU-1A TEMP. AFTER SGT-FL-1A LO	18	339001	B N	2 0							
2	R 572 H8/5.5	F081			21110-0							
SGT-TE-8B1	SGT-FU-1B TEMP. AFTER SGT-FL-1B LO	18	339001	B N	2 0							
2	R 572 J4/5.5	F081			21110-0							
SGT-TS-EH1A10	CONTROL OF HEATER SGT-EHC-1A1	18		B	2 0						F	
2	R 572	F081			18000-0							
SGT-TS-EH1A11	CONTROL OF STAGE 1 OF SGT-EHC-1A1	18		B	2 0						F	
2	R 572 H.4/5.9	F081			18000-0							
SGT-TS-EH1A111	CONTROL OF HEATER SGT-EHC-1A1	18		B	2 0						F	
2	R 572 H.4/5.9	F081			18000-0							
SGT-TS-EH1A112	CONTROL OF HEATER SGT-EHC-1A1	18		B	2 0							
2	R 572 H.4/5.9	F081			18000-0							
SGT-TS-EH1A113	CONTROL OF HEATER SGT-EHC-1A1	18		B	2 0						F	
2	R 572 H.4/5.9	F081			18000-0							
SGT-TS-EH1A114	CONTROL OF HEATER SGT-EHC-1A1	18		B	2 0						F	
2	R 572 H.4/5.9	F081			18000-0							
SGT-TS-EH1A115	CONTROL OF HEATER SGT-EHC-1A1	18		B	2 0						F	
2	R 572 H.4/5.9	F081			18000-0							
SGT-TS-EH1A116	CONTROL OF HEATER SGT-EHC-1A1	18		B	2 0						F	

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 572 H.4/5.9	F081			18000-0							
SGT-TS-EH1A117	CONTPOL OF HEATER SGT-EHC-1A1	18		B	2 0						F	
2	R 572 H.4/5.9	F081			18000-0							
SGT-TS-EH1A118	CONTROL OF HEATER SGT-EHC-1A1	18		B	2 0						F	
2	R 572 H.4/5.9	F081			18000-0							
SGT-TS-EH1A12	CONTROL OF STAGE 1 OF SGT-EHC-1A1	18		B	2 0						F	
2	R 572 H.4/5.9	F081			18000-0							
SGT-TS-EH1A13	CONTROL OF STAGE 1 OF SGT-EHC-1A1	18		B	2 0						F	
2	R 572 H.4/5.9	F081			18000-0							
SGT-TS-EH1A14		18		B	2 0						F	
2	R 572 H.4/5.9	F081			18000-0							
SGT-TS-EH1A15		18		B	2 0						F	
2	R 572 H.4/5.9	F081			18000-0							
SGT-TS-EH1A16		18		B	2 0						F	
2	R 572 H.4/5.9	F081			18000-0							
SGT-TS-EH1A17		18		B	2 0						F	
2	R 572 H.4/5.9	F081			18000-0							
SGT-TS-EH1A18		18		B	2 0						F	
2	R 572 H.4/5.9	F081			18000-0							
SGT-TS-EH1A19		18		B	2 0						F	
2	R 572 H.4/5.9	F081			18000-0							
SGT-TS-EH1A21		18		B	2 0						F	
2	R 572 H.8/6.0	F081			18000-0							
SGT-TS-EH1A210		18		B	2 0						F	
2	R 572 H.4/5.9	F081			18000-0							
SGT-TS-EH1A211		18		B	2 0						F	
2	R 572 H.8/6.0	F081			18000-0							
SGT-TS-EH1A212		18		B	2 0						F	
2	R 572 H.8/6.0	F081			18000-0							
SGT-TS-EH1A213		18		B	2 0						F	
2	R 572	F081			18000-0							
SGT-TS-EH1A214		18		B	2 0						F	
2	R 572 H.8/6.0	F081			18000-0							
SGT-TS-EH1A215		18		B	2 0						F	
2	R 572 H.8/6.0	F081			18000-0							
SGT-TS-EH1A216		18		B	2 0						F	
2	R 572 H.8/6.0	F081			18000-0							
SGT-TS-EH1A217	CONTROL OF HEATER SGT-EHC-1A2	18		B	2 0						F	
2	R 572 H.8/6.0	F081			18000-0							
SGT-TS-EH1A218	CONTROL OF HEATER SGT-EHC-1A2	18			2 0						F	
2	R 572 H.8/6.0	F081		B	18000-0							
SGT-TS-EH1A22	CONTROL OF STAGE 1 OF SGT-EHC-1A2	18		B	2 0						F	
2	R 572 H.8/6.0	F081			18000-0							
SGT-TS-EH1A23	CONTROL OF STAGE 1 OF SGT-EHC-1A2	18		B	2 0						F	
2	R 572 H.8/6.0	F081			18000-0							
SGT-TS-EH1A24	CONTROL OF STAGE 2 OF SGT-EHC-1A2	18		B	2 0						F	
2	R 572 H.8/6.0	F081			18000-0							
SGT-TS-EH1A25	CONTROL OF STAGE 2 OF SGT-EHC-1A2	18		B	2 0						F	
2	R 572 H.8/6.0	F081			18000-0							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TK	HL
SGT-TS-EH1A26	CONTROL OF STAGE 2 SGT-EHC-1A2	18	*	B	2 0						F	
2	R 572 H.8/6.0	F081			18000-0							
SGT-TS-EH1A27	CONTROL OF STAGE 3 OF SGT-EHC-1A2	18		B	2 0						F	
2	R 572 H.8/6.0	F081			18000-0							
SGT-TS-EH1A28	CONTROL OF STAGE 3 OF SGT-EHC-1A2	18		B	2 0						F	
2	R 572	F081			18000-0							
SGT-TS-EH1A29	CONTROL OF STAGE 3 OF SGT-EHC-1A2	18		B	2 0						F	
2	R 572 H.8/6.0	F081			18000-0							
SGT-TS-EH1B10		18		B	2 0						F	
2	R 572 J5/6.0	F081			18000-0							
SGT-TS-EH1B11	CONTROL OF STAGE 1 OF SGT-EHC-1B1	18		B	2 0						F	
2	R 572 J.5/6.0	F081			18000-0							
SGT-TS-EH1B111	CONTROL OF HEATER SGT-EHC-1B1	18		B	2 0						F	
2	R 572	F081			18000-0							
SGT-TS-EH1B112	CONTROL OF HEATER SGT-EHC 1B1	18		B	2 0						F	
2	R 572 J.5/6.0	F081			18000-0							
SGT-TS-EH1B113	CONTROL OF HEATER SGT-EHC-1B1	18		B	2 0						F	
2	R 572 J.5/6.0	F081			18000-0							
SGT-TS-EH1B114	CONTROL OF HEATER SGT-EHC-1B1	18		B	2 0						F	
2	R 572 J.5/6.0	F081			18000-0							
SGT-TS-EH1B115	CONTROL OF HEATER SGT-EHC-1B1	18		B	2 0						F	
2	R 572 J.5/6.0	F081			18000-0							
SGT-TS-EH1B116	CONTROL OF HEATER SGT-EHC-1B1	18		B	2 0						F	
2	R 572 J.5/6.0	F081			18000-0							
SGT-TS-EH1B117	CONTROL OF HEATER SGT-EHC-1B1	18		B	2 0						F	
2	R 572 J.5/6.0	F081			18000-0							
SGT-TS-EH1B118	CONTROL OF HEATER SGT-EHC-1B1	18		B	2 0						F	
2	R 572 J.5/6.0	F081			18000-0							
SGT-TS-EH1B12	CONTROL OF STAGE 1 OF SGT-EHC-1B1	18		B	2 0						F	
2	R 572 J.5/6.0	F081			18000-0							
SGT-TS-EH1B13	CONTROL OF STAGE 1 OF SGT-EHC-1B1	18		B	2 0						F	
2	R 572 J.5/6.0	F081			18000-0							
SGT-TS-EH1B14	CONTROL OF STAGE 2 OF SGT-EHC-1B1	18		B	2 0						F	
2	P 572 M.1/5.8	F081			18000-0							
SGT-TS-EH1B15	CONTROL OF STAGE 2 OF SGT-EHC-1B1	18		B	2 0						F	
2	R 572 J.5/6.0	F081			18000-0							
SGT-TS-EH1B16	CONTROL OF STAGE 2 OF SGT-EHC-1B1	18		B	2 0						F	
2	R 572 J.5/6.0	F081			18000-0							
SGT-TS-EH1B17	CONTROL OF STAGE 3 OF SGT-EHC-1B1	18		B	2 0						F	
2	R 572 J.5/6.0	F081			18000-0							
SGT-TS-EH1B18	CONTROL OF STAGE 3 OF SGT-EHC-1B1	18		B	2 0						F	
2	R 572 J.5/6.0	F081			18000-0							
SGT-TS-EH1B19	CONTROL OF STAGE 3 OF SGT-EHC-1B1	18		B	2 0						F	
2	R 572 J.5/6.0	F081			18000-0							
SGT-TS-EH1B21	CONTROL OF STAGE 1 OF SGT-EHC-1B2	18		B	2 0						F	
2	R 572 J.2/6.0	F081			18000-0							
SGT-TS-EH1B210	CONTROL OF STAGE 1 OF SGT-EHC-1B2	18	355003	B	2 0						F	
2	R 572 J.2/6.0	F081			18000-0							
SGT-TS-EH1B211	CONTROL OF HEATER SGT-EHC-1B2	18	355003	B	2 0						F	

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 572 J.2/6.0	F081			18000-0							
SGT-TS-EH1B212	CONTROL OF HEATER SGT-EHC-1B2	18		B	2 0						F	
2	R 572 J.2/6.0	F081			18000-0							
SGT-TS-EH1B213	CONTROL OF HEATER SGT-EHC-1B2	18		B	2 0						F	
2	R 572 J.2/6.0	F081			18000-0							
SGT-TS-EH1B214	CONTROL OF HEATER SGT-EHC-1B2	18		B	2 0						F	
2	R 572 J.2/6.0	F081			18000-0							
SGT-TS-EH1B215	CONTROL OF HEATER SGT-EHC-1B2	18		B	2 0						F	
2	R 572 J.2/6.0	F081			18900-0							
SGT-TS-EH1B217	CONTROL OF HEATER SGT-EHC-1B2	18		B	2 0						F	
2	R 572 J.2/6.0	F081			18900-0							
SGT-TS-EH1B218	CONTROL OF HEATER SGT-EHC-1B2	18		B	2 0						F	
2	R 572 J.2/6.0	F081			18000-0							
SGT-TS-EH1B22	CONTROL OF STAGE 1 OF SGT-EHC-1B2	18		B	2 0						F	
2	R 572 J.2/6.0	F081			18000-0							
SGT-TS-EH1B23	CONTROL OF STAGE 1 OF SGT-EHC-1B2	18		B	2 0						F	
2	R 572											
SGT-TS-EH1B24	CONTROL OF STAGE 2 OF SGT-EHC-1B2	18		B	2 0						F	
2	R 572 J.2/6.0	F081			18000-0							
SGT-TS-EH1B25	CONTROL OF STAGE 2 OF SGT-EHC-1B2	18		B	2 0						F	
2	R 572 J.2/6.0	F081			18000-0							
SGT-TS-EH1B26	CONTROL OF STAGE 2 OF SGT-EHC-1B2	18		B	2 0						F	
2	R 572 J.2/6.0	F081			18000-0							
SGT-TS-EH1B27	CONTROL OF STAGE 3 OF SGT-EHC-1B2	18		B	2 0						F	
2	R 572											
SGT-TS-EH1B28	CONTROL OF STAGE 3 OF SGT-EHC-1B2	18		B	2 0						F	
2	R 572 J.2/6.0	F081			18000-0							
SGT-TS-EH1B29	CONTROL OF STAGE 3 OF SGT-EHC-1B2	18		B	2 0						F	
2	R 572 J.2/6.0	F081			18000-0							
SGT-XE-1RH/1A1	CONTROL OF RELATIVE HUMIDITY	18			3 0							
2	R 572 M.1/6.0	H349			XMAC-103							
SGT-XE-1RH/1A2	CONTROL OF RELATIVE HUMIDITY	18			3 0							
2	R 572 M.0/8.2	H349			XMAC-103							
SGT-XE-1RH/1B1	CONTROL OF RELATIVE HUMIDITY	18			3 0							
2	R 572 M.1/5.8	H349			XMAC-103							
SGT-XE-1RH/1B2	CONTROL OF RELATIVE HUMIDITY	18			3 0							
2	R 572 M.0/8.0	H349			XMAC-103							
SGT-XE-1RHS/1A1	CONTROL OF RELATIVE HUMIDITY	18			3 0							
2	R 572 H.4/5.9	H349			XMS7A							
SGT-XE-1RHS/1A2	CONTROL OF RELATIVE HUMIDITY	18			3 0							
2	R 572 H.8/6.0	H349			XMAC-103							
SGT-XE-1RHS/1B1	CONTROL OF RELATIVE HUMIDITY	18			3 0							
2	R 572 J.5/6.0	H349			XMAC-103							
SGT-XE-1RHS/1B2	CONTROL OF RELATIVE HUMIDITY	18			3 0							
2	R 572 J.2/6.0	H349			XMAC-103							
SGT-XE-2RH/1A1	CONTROL OF RELATIVE HUMIDITY	18			3 0							
2	R 572 M.1/6.0	H349			XMAC-103							
SGT-XE-2RH/1A2	CONTROL OF RELATIVE HUMIDITY	18			3 0							
2	R 572 M.0/8.2	H349			XMAC-103							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
SGT-XE-2RH/1B1	CONTROL OF RELATIVE HUMIDITY	18			3 0							
2	R 572 M.1/5.8	H349			XMAC-103							
SGT-XE-2RH/1B2	CONTROL OF RELATIVE HUMIDITY	18			3 0							
2	R 572 M.0/8.0	H349			XMAC-103							
SGT-XE-2RHS/1A1	CONTROL OF RELATIVE HUMIDITY	18			3 0							
2	R 572 H.4/5.9	H349			XMS7A							
SGT-XE-2RHS/1A2	CONTROL OF RELATIVE HUMIDITY	18			3 0							
2	R 572 H.8/6.0	H349			XMAC-103							
SGT-XE-2RHS/1B1	CONTROL OF RELATIVE HUMIDITY	18			3 0							
2	R 572 J.5/6.0	H349			XMS7A							
SGT-XE-2RHS/1B2	CONTROL OF RELATIVE HUMIDITY	18			3 0							
2	R 572 J.2/6.0	H349			XMS7A							
SGT-XE-3RH/1A1	CONTROL OF RELATIVE HUMIDITY	18			3 0							
2	R 572	H349			XMAC-103							
SGT-XE-3RH/1A2	CONTROL OF RELATIVE HUMIDITY	18			3 0							
2	R 572 M.0/8.2	H349			XMAC-103							
SGT-XE-3RH/1B1	CONTROL OF RELATIVE HUMIDITY	18			3 0							
2	R 572 M.1/5.8	H349			XMAC-103							
SGT-XE-3RH/1B2	CONTROL OF RELATIVE HUMIDITY	18			3 0							
2	R 572	H349			XMAC-103							
SGT-XE-3RHS/1A1	CONTROL OF RELATIVE HUMIDITY	18			3 0							
2	R 572 H.4/5.9	H349			XMAC-103							
SGT-XE-3RHS/1A2	CONTROL OF RELATIVE HUMIDITY	18			3 0							
2	R 572 H.8/6.0	H349			XMAC-103							
SGT-XE-3RHS/1B1	CONTROL OF RELATIVE HUMIDITY	18			3 0							
2	R 572 J.5/6.0	H349			XMS7A							
SGT-XE-3RHS/1B2	CONTROL OF RELATIVE HUMIDITY				3 0							
2	R 572 J.2/6.0	H349			XMS7A							
SLC-EHC-2	MAINTAINING HEATER FOR SLC-TK-1	02C41	109009		1 3							
2	R 548 M5/3.8	G080			2043363							
SLC-EHC-3	MIXING HEATER FOR SLC-TK-1	02C41	109010	H	1 3		0 0					N
2	R 548 M5/3.8	G080			20507G190							
SLC-LT-1	SLC-TK-1 LEVEL TRANSMITTER	02			3 3							
2	R 548 M.8/3.7	G080			555111BLAA4WBL							
SLC-M-1A	40HP/52A MOTOR FOR SCL-P-1A	02C41	213008	R D	1 0							
2	R 533 3.6/M.2	G080			5K324AK2120/324T							
SLC-M-1B	40HP/52A MOTOR FOR SLC-P-1B	02C41	213008	R D	1 0							
2	R 553 3.6/M.2	G080			5K324AK2120/324T							
SLC-MO-1A	.33HP .95A MOTOR OPER. SLC-V-1A	41B	221028	A B	1 0	1 4	0 0			35		N
2	R 552 3.6/M.7	L200			SMB-000-5/K48							
SLC-MO-1B	.33HP .95A MOTOR OPER. SLC-V-1B	41B	221028	X B	1 0							
2	R 552 3.9/M.7	L200			SMB-000-5/K48							
SLC-PT-4	SLC PUMP DISCHARGE PRESSURE TRANSM	02		T	1 3	1 4	0 0			00		N
2	R 553 N.0/3.5	G080			556110EAAA1WEN							
SLC-TE-6	SLC STORAGE TANK TEMPERATURE	215	339010	X	2 3							
2	R 548 M.7/3.6	F080			40-104044-103							
SLC-TIC-2	SLC TEMP. CONTROLLER	02	341004		1 3							
2	R	F080			40-104044-103							
SLC-TS-3	SLC TEMP. SWITCH	02		T	2 3		0 0			00		N

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EQUIPMENT NO.	LV	DESCRIPTION	PLANT LOCATION	CONTRACT	MFG	QID	QS	USE	TEST	MFG MODEL NO.	ANL	F/O	C	FREQ	TM	HL
	2		R 548 M.8/3.5													
SPTM-TE-1A	2	SUPPRESSION POOL TEMP	C 466 SUPP POOL	218	H329	339002	D D	1 0		TC-113X-T-A-24-3						
SPTM-TE-1B	2	SUPPRESSION POOL TEMP	C 466 SUPP POOL	218	H329	339002	D D	1 0		TC-113X-T-A-24-3						
SPTM-TE-10	2	SUPPRESSION POOL TEMP,OPER INFO	C 448 SUPP POOL	218	H329	339002	D D	1 0		TC-113X-T-A-24-3						
SPTM-TE-11	2	SUPPRESSION POOL TEMP,OPER INFO	C 448 SUPP POOL	218	H329	339002	D D	1 0		TC-113X-T-A-24-3						
SPTM-TE-12	2	SUPRESSION POOL TEMP, OPER INFO	C 447 SUPP POOL	218	H329	339002	D D	1 0		TC-113X-T-A-24-3						
SPTM-TE-13	2	SUPPRESSION POOL TEMP, OPER INFO	C 447 SUPP POOL	218	H329	339002	D D	1 0		TC-113X-T-A-24-3						
SPTM-TE-14	2	SUPPRESSION POOL TEMP, OPER INFO	C 447 SUPP POOL	218	H329	339002	D D	1 0		TC-113X-T-A-24-3						
SPTM-TE-15	2	SUPPRESSION POOL TEMP, OPER INFO	C 447 SUPP POOL	218	H329	339002	D D	1 0		TC-113X-T-A-24-3						
SPTM-TE-16	2	SUPPRESSION POOL TEMP, OPER INFO	C 447 SUPP POOL	218	H329	339002	D D	1 0		TC-113X-T-A-24-3						
SPTM-TE-2A	2	SUPPRESSION POOL TEMP	C 466 SUPP POOL	218	H329	339002	D D	1 0		TC-113X-T-A-24-3						
SPTM-TE-2B	2	SUPPRESSION POOL TEMP	C 466 SUPP POOL	218	H329	339002	D D	1 0		TC-113X-T-A-24-3						
SPTM-TE-3A	2	SUPPRESSION POOL TEMP	C 466 SUPP POOL	218	H329	339002	D D	1 0		TC-113X-T-A-24-3						
SPTM-TE-4A	2	SUPPRESSION POOL TEMP	C 466 SUPP POOL	218	H329	339002	D D	1 0		TC-113X-T-A-24-3						
SPTM-TE-4B	2	SUPPRESSION POOL TEMP	C 466 SUPP POOL	218	H329	339002	D D	1 0		TC-113X-T-A-24-3						
SPTM-TE-5A	2	SUPPRESSION POOL TEMP	C 466 SUPP POOL	218	H329	339002	D D	1 0		TC-113X-T-A-24-3						
SPTM-TE-5B	2	SUPPRESSION POOL TEMP	C 466 SUPP POOL	218	H329	339002	D D	1 0		TC-113X-T-A-24-3						
SPTM-TE-6A	2	SUPPRESSION POOL TEMP	C 466 SUPP POOL	218	H329	339002	D D	1 0		TC-113X-T-A-24-3						
SPTM-TE-6B	2	SUPPRESSION POOL TEMP	C 466 SUPP POOL	218	H329	339002	D D	1 0		TC-113X-T-A-24-3						
SPTM-TE-7A	2	SUPPRESSION POOL TEMP	C 466 SUPP POOL	218	H329	339002	D D	1 0		TC-113X-T-A-24-3						
SPTM-TE-8A	2	SUPPRESSION POOL TEMP	C 466 SUPP POOL	218	H329	339002	D D	1 0		TC-113X-T-A-24-3						
SPTM-TE-8B	2	SUPPRESSION POOL TEMP	C 466 SUPP POOL	218	H329	339002	D D	1 0		TC-113X-T-A-24-3						
SPTM-TE-9	2	SUPPRESSION POOL TEMP, OPER INFO	C 447 SUPP POOL	218	H329	339002	D D	1 0		TC-113X-T-A-24-3						
SRM-DET-1A	2		C IN RPV		G080			1 3								
SRM-DET-1B	2		C IN RPV		G080			1 3								

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
SRM-DET-1C					1 3							
2	C IN RPV	G080										
SRM-DET-1D					1 3							
2	C IN RPV	G080										
SW-EHO-11B	EH OPERATOR FOR SW-TCV-11B	42A										
2	W 525 L3/10.4	I206			NH92J2002							
SW-M-1A	1750HP/222A MOTOR FOR SW-P-1A	23	213012	R N	4 3							
2	A 449 B.3/1.8	G082			5K6348XC76A/6348P4Z							
SW-M-1B	1750HP/222A MOTOR FOR SW-P-1B	23	213012	R N	4 3							
2	B 448 B.4/1.9	G082			5K6348XC76A/6348P4Z							
SW-MO-12A	2.66HP MOTOR OPERATOR SW-V-12A	41A	221032	A B	4 3	1 4	0 0			35		N
2	A 437 C.1/2.1	L200			SMB-1-40/T56							
SW-MO-12B	2.66HP MOTOR OPERATOR SW-V-12B	41A	221064	A B	4 3	1 4	0.0			35		N
2	B 438 C.1/1.3	L200			SMB-1-40/T56							
SW-MO-187A	MO FOR SW-V-187A INTO FPC-HX-1A	41A		N N	2 0							
2	R 548											
SW-MO-187B	SW-V-187B MO SW INTO FPC-HX-1B	41A		N N	2 0							
2	R 548											
SW-MO-188A	SW-V-188A MO SW OUT OF FPC-HX-1A	41A		N N	2 0							
2	R 548											
SW-MO-188B	SW-V-188B MO SW OUT OF FPC-HX-1B	41A		N N	2 0							
2	R 548											
SW-MO-2A	2.0HP MOTOR OPERATOR SW-V-2A	215	221015	A R	4 3	1 4				33		N
2	A 445 B.3/2.6	L200			SMB-00-10/L56							
SW-MO-2B	MOTOR OPERATOR SW-V-2B	215	221015	A R	4 3	1 4				33		N
2	B 444 B.6/2.8	L200			SMB-00-10/L56							
SW-MO-24A	0.32HP MOTOR OPERATOR SW-V-24A	215	221050	B R	1 3	1 4	0 0			33		N
2	R 448 K.6/8.0	L200			SMC-04-5/42							
SW-MO-24B	0.32HP MOTOR OPERATOR SW-V-24B	215	221050	B R	1 3	1 4	0 0			33		N
2	R 450 L8/8.3	L200			SMC-04-5/42							
SW-MO-24C	0.32HP MOTOR OPERATOR SW-V-24C	215	221059	B R	1 3	1 4	0 0			33		N
2	R 450 H.7/4.4	L200			SMC-04-5/42							
SW-MO-29	0.5HP MOTOR OPERATOR SW-V-29	215	221025	R R	4 0							
2	A 443 B.3/2.3	L200			SMB-000-2/P4D							
SW-MO-4A	1.0HP MOTOR OPERATOR SW-V-4A	41A	221015	A B	4 0	1 4	0 0			35		N
2	D 443 P.8/6.0	L200			SMB-00-10/L56							
SW-MO-4B	1.0HP MOTOR OPERATOR SW-V-4B	41A	221015	A B	4 0	1 4	0 0			35		N
2	D 441 R9/8	L200			SMB-00-10/L56							
SW-MO-4C	1.0HP MOTOR OPERATOR SW-V-4C	41A	221015	A B	4 0	1 4	0 0			35		N
2	D 445 P.2/4.8	L200			SMB-00-10/L56							
SW-MO-44	0.5HP MOTOR OPERATOR SW-V-44	215	221050	B R	1 0	1 4	0 0			33		N
2	R 455 K.9/3.9	L200			SMC-04-5/42							
SW-MO-54	0.5HP MOTOR OPERATOR SW-V-54	215	221050	R R	1 0							
2	R 450 M9/4.0	L200			SMC-04-5/42							
SW-MO-69A	2.66HP MOTOR OPERATOR SW-V-69A	41A	221032	A B	4 3	1 4	0 0			35		N
2	A 437 C.5/1.6	L200			SMB-1-4[illegible]/T56							
SW-MO-69B	2.66HP MOTOR OPERATOR SW-V-69B	41A	221064	A B	4 3	1 4	0 0			35		N
2	B 437 C.3/2.0	L200			SMC-1-40/T56							
SW-MO-70A	2.66HP MOTOR OPERATOR SW-V-70A	41A	221032	A B	4 3	1 4	0 0			35		N

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	A 437 C.5/2.1	L200			SMB-1-40/T56							
SW-MO-70B	2.66HP MOTOR OPERATOR SW-V-70B	41A	221064	A B	4 3	1 4	0 0			35		N
2	B 431 C.4/2.8	L200			SMB-1-40/T56							
SW-MO-75A	MOTOR OPERATOR FOR SW-V-75A	215		P	1 0							
2	R 522 J/9.4											
SW-MO-75B	MOTOR OPERATOR FOR SW-V-75B	215		P	1 0						P	
2	R 522 M6/9.4											
SW-MO-90	1.33HP MOTOR OPERATOR SW-V-90	215	221044	R R	4 0							
2	W 437 R/9.8	L200			SMC-04-5/42							
SW-PS-1A	SERVICE WATER PUMP 1A DISCH. IR -2	58	256013	R D	4 3						F	
2	A 445 B.9/2.8	M235			DAW-7033-804-RG							
SW-PS-1B	SERVICE WATER PUMP 1B DISCH. IR -2	58	256013	R D	4 3						F	
2	B 445 C.9/2.6	M235			TYPE DAW7053-804							
SW-PS-1014	100 PSIG SET SUPPLY TO H2-02 ANALY	220	256001	B D	1 3	1 4	0 0			50		N
2	R 548	A499			SC11AR/TG10A44R							
SW-PS-1015	100 PSIG SET SUPPLY TO H2-02-ANALY	220	256001	B D	1 3	1 4	0 0			50		N
2	R 548	A499			SC11AR/TG10A44R							
SW-PS-11A	PRESSURE SWITCH WMA-CC-51A	215	256045	B	4 3							
2	W 525 J.3/11.6	S382			GL-EE45-CJM4PSSX16							
SW-PS-11B	PRESSURE SWITCH COMP WMA-CC-51B	215	256045	B	4 3							
2	W 525 L.1/10.2	S382			GL-EE45-CJM44PSSX16							
SW-PS-40B	HPCS SW PUMP DISCH. HDR IR -24-	58	256013	R D	4 0						F	
2	A 444 B.0/2.7	M235			DAW-7023-804-R6							
SW-RE-4	SW DISCH FROM RHR-HX-1B	02017	277004		1 3							
2	R 548	G080			117B1681G001							
SW-RE-5	SW DISCH FROM RHR-HX-1A	02017	277004		1 3							
2	R 548	G080			117B1681G001							
SW-SPV-38A	SPV FOR SW-PCV-38A LOOP A RETURN	220		B	4 3	1 4	0 0			35		N
2	A 441 C.0/2.6	A499			WJNP831654E							
SW-SPV-38B	SPV FOR SW-PCV-38B LOOPB RETURN	220		B D	4 3							
2	H 408											
SW-SV-201		220	324004	D D	1 0							
2	R 548	M095			MV229MQ-L2							
SW-SV-204		220	324005	D D	1 0							
2	R 548	M095			MV229MS-L2							
SW-SV-206		220	324005	D D	1 0							
2	R 548	M095			MV229MS-L2							
SW-SV-209		220	324004	D D	1 0							
2	R 548	M095			MV229MQ-L2							
SW-SV-210		220	324005	D D	1 0							
2	R 548	M095			MV229MS-L2							
SW-SV-211		220	324005	D D	1 0							
2	R 548	M095			MV229MS-L2							
SW-SV-212		220	324004	D D	1 0							
2	R 548	M095			MV229MQ-L2							
SW-SV-213		220	324005	D D	1 0							
2	R 548	M095			MV229MS-L2							
SW-TE-1A	SPRAY POND A WATER TEMP LOC-AL-	218		D	4 0							
2	A 441 B.1/2.0											

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
SW-TE-1B	SPRAY POND B WATER TEMP LOC-AL-	218		D	4 0							
2	B 441 B.1/2.0											
SW-TE-1C	SPRAY POND B WATER TEMP LOC-AL-	218		D	4 0							
2	B 441 B.1/2.0											
SW-TE-1D	SPRAY POND A WATER TEMP LOC-AL-	218		D	4 0							
2	A 441 B.1/2.0											
WEA-DPS-73A	DPS FOR WEA-FN-53A	216			4 3							
2	W 530 J.4/14.9	S254			7PS11DW							
WEA-DPS-73B	DPS FOR WEA-FN-53A	216			4 3							
2	W 528 K.5/14.5	S254			7PS11DW							
WEA-LMS-51	LMS FOR WEA-AD-51	216	200003	B D	4 3							
2	W 525 K5/15	B066			PART # MA418							
WEA-LMS-52	LMS FOR WEA-AD-52	216	200003		4 3							
2	W 535 J/11.2	B066			MA418							
WEA-M-51	.75/1.45A HJP MTR FOR WEA-FN-51	28	213022	B B	4 3						F	
2	W 525 K.7/14.9	W120			SBDP/143T							
WEA-M-52	1HP/1.9A MOTOR FOR WEA-FN-52	28	213023	B B	4 3						F	
2	W 525 J.4/14.7	W120			SBDP/182T							
WEA-M-53A	2HP/3.4A MOTOR FOR WEA-FN-53A	28	213023	B B	4 3						F	
2	W 525 J.4/14.9	W120			SBDP/182T							
WEA-M-53B	1HP/1.9A MOTOR FOR WEA-FN-53B	28	213023	B B	4 3						F	
2	W 525 K.5/14.5	W120			SBDP/182T							
WEA-MO-51	MOTOR OPER. FOR WEA-AD-51	216	221001	D	4 3							
2	W 525 K.5/15	B066			PART # MA418							
WEA-MO-52	MOTOR OPER. FOR WEA-AD-52	216	221001	B	4 3							
2	W 535 J/11.2	B066			MA418							
WMA-DPIS-52A	DIFF PRESS IND SWITCH WMA-FL52A	67			4 3							
2	W	D295			3002C							
WMA-DPIS-52B	DIFF. PRESS IND SWITCH WMA-FL52B	67	086006		4 3							
2	W 525	D295			3002C							
WMA-DPIS-53A	DIFF PRESS IND SWITCH WMA-FL53A	67	086006		4 3							
2	W 530	D295			3002C							
WMA-DPIS-53B	AIR FILTER WMA-FL-53B DIFF. PRESS.	67	086006		4 3							
2	W 530	D295			3002C							
WMA-DPIS-54A1	DIFF PRESS INDICATING SWITCH WMA-F	18	086004		4 3							
2	W 535 H.4/12	D295			3002LT							
WMA-DPIS-54A2	DIFF PRESS INDICATING SWITCH WMA-F	18	086005		4 3							
2	W 535 H.4/12	D295			3004LT							
WMA-DPIS-54A3	DIFF PRESS INDICATING SWITCH WMA-F	18	086004		4 3						F	
2	W 535 H.4/12	D295			3002LT							
WMA-DPIS-54B1	DIFF PRESS INDICATING SWITCH	18	086004	B N	4 3						F	
2	W 535 L.8/10.7	D295			3002LT							
WMA-DPIS-54B2	DIFF PRESS INDICATING SWITCH	18	086005	B N	4 3						F	
2	W 535 L.8/10.7	D295			3004LT							
WMA-DPIS-54B3	DIFF PRESS INDICATING SWITCH	18	086004	B N	4 3						F	
2	W 535 L.8/10.7	D295			3002LT							
WMA-EHC-51A	ELECTRIC HEATING COIL	67	109004	N N	4 3						F	
2	W 525 J.4/11.4	B392			XS127321255							
WMA-EHC-51B	ELECTRIC HEATING COIL	67	109004	N N	4 3						F	

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT	MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	W 525 K9/10.5		B392			XS127321255							
WMA-EHC-52A	ELECTRIC HEATING COIL	67		109004	B N	4 3							
2	W 525 J4/11.4		B392			XS127321257							
WMA-EHC-52B	ELECTRIC HEATING COIL	67		109006	B N	4 3						F	
2	W 525 K.8/11.4		B392			XS127411718							
WMA-EHC-53A	ELECTRIC HEATING COIL	67		109005	N N	4 3						F	
2	W 525 J.4/10.5		B392			XS127411157							
WMA-EHC-53B	ELECTRIC HEATING COIL	67		109004	N N	4 3						F	
2	W 525 K.8/12.2		B392			XS127321259							
WMA-HU-55A	ELECTRIC HUMIDIFIER	216		177001		4 3							
2	W 527 J.5/12.6		T166			C10053							
WMA-HU-55A+	ELECTRIC HUMIDIFIER					4 3							
1	W												
WMA-HU-55B	ELECTRIC HUMIDIFIER	216		177001		4 3							
2	W 527 K.1/10.5		T166			C10053							
WMA-HU-55B+	ELECTRIC HUMIDIFIER					4 3							
1	W												
WMA-LS-55A	HUMIDIFIER WMA-HU-55A LEVEL LOC-AL	216		207008	R B	4 3						F	
2	W 527 L.8/12		M170			LER 70							
WMA-LS-55B	HUMIDIFIER WMA-HU-55B LEVEL LOC-AL	216		207008	R B	4 3							
2	W 531 K3/11		M170			LER 70							
WMA-M-51A	30HP/36.5A MTR FOR WMA-FN-51A	67		213038	B B	4 3						F	
2	W 525 J.4/12		W120			TBFC/286T							
WMA-M-51B	30HP/36.5A MTR FOR WMA-FN-51B	67		213038	B B	4 3						F	
2	W 525 K.4/10.5		W120			TBFC/286T							
WMA-M-52A	15HP/19.5 MOTOR FOR WMA-FN-52A	67		213035	B B	4 3						F	
2	W 525 J.5/11.4		W120			TBFC/254T							
WMA-M-52A/FL	DRIVE MOTOR FOR WMA-FN-52A	67		213020	B B	4 3						F	
2	W 525 J.2/11.4		V136			VW47-597-16							
WMA-M-52B	15HP/19.5 MOTOR FOR WMA-FN-52B	67		213035	A B	4 3						F	
2	W 525 K.5/11.4		W120			TBFC/254T							
WMA-M-52B/FL	DRIVE MOTOR FOR WMA-FL-52B	67		213020	B B	4 3						F	
2	W 525 K.9/11.4		V136			VW47-597-16							
WMA-M-53A	50HP/60A MOTOR FOR WMA-FN-53A	67		213040	A B	4 3						F	
2	W 525 J.6/10.5		W120			TBFC/326T							
WMA-M-53A/FL	DRIVE MOTOR FOR WMA-FN-53A	67		213020	B B	4 3						F	
2	W 525 J.2/10.5		V136			VW47-597-16							
WMA-M-53B	40HP/49A MOTOR FOR WMA-FN-53B	67		213039	A B	4 3						F	
2	W 525 K.6/12		W120			TBFC/324T							
WMA-M-53B/FL	DRIVE MOTOR FOR WMA-FL-53B			213020	B B	4 3						F	
2	W 525 L/12.2		V136			VW47-597-16							
WMA-M-54A	5HP/6.9A MOTOR FOR WMA-FN-54A	18		213005	D D	4 3						F	
2	W 535 H.4/12		G080			5K184BL34B/184T							
WMA-M-54B	5HP/6.9A MOTOR FOR WMA-FN-54B	18		213005	D D	4 3						F	
2	W 535 L.8/10.5		G080			5K184BL34B/184T							
WMA-MO-51A1	MOTOR OPER FOR WMA-AO-51A1	216		221001	R B	4 3						D	
2	W 535 H.8/12.4		B066			MA418							
WMA-MO-51B1	MOTOR OPER FOR WMA-AD-51B1	216		221001	X B	4 3						D	
2	W 535 L.4/11		B066			MA418							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG. MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
WMA-MO-52/1	MOTOR OPER FOR WMA-AD-52/1	216	221004	R B	4 3						D	
2	W 535 L.5/11.8	I206			H3D1320T21P7							
WMA-MO-52/2	MOTOR OPER FOR WMA-AD-52/2	216	221004	R B	4 3						D	
2	W 535 L.5/11.8	I206			H3013220T21P7							
WMA-MO-54A1	MOTOR OPER FOR WMA-AD-54A1	216	221001	R B	4 3						D	
2	W 535 H.7/12.5	B066			MA418							
WMA-MO-54A2	MOTOR OPER FOR WMA-AC-54A2	216	221001	B	4 3						D	
2	W 535 H.5/12.4	B066			MA418							
WMA-MO-54B1	MOTOR OPER FOR WMA-AC-54B1	216	221001	R B	4 3						D	
2	W 535 L.5/11.1	B066			MA418							
WMA-MO-54B2	MOTOR OPER FOR WMA-AD-54B2	216	221001	R B	4 3						D	
2	W 535 L.5/11.0	B066			MA418							
WMA-MS-55A	MOISTURE SEPARATOR	216		R D	4 3							
2	W 522 K/12.0	A270			MT0239295							
WMA-MS-55B	WMA-SERVICE HEADER HOIST. LOC-AL	216		R D	4 3							
2	W 522 K.2/10.4	A270			MT0239295							
WOA-EHC-54A	ELECTRIC HTR FOR EMERG FLT UNT 54A	216	109001	B B	4 3	2 1	0 0			33		N
2	W 535 H6/12.5	B392			S017591478							
WOA-EHC-54B	ELECTRIC HTR FOR EMERG FLT UNT 54B	216	109001	B B	4 3	2 1	0.0			33		N
2	W 535 L7/11.1	B392			S017591478							
WOA-EHC-51A	EH OPERATOR FOR WOA-V-51A	216	110005	B D	4 3	2 1	0 0			33	P	N
2	W 530 K.1/14.6	I206			NH96G6602FIL42-							
WOA-EHO-51B	EH OPERATOR FOR WOA-V-52A	216	110005	B D	4 3	2 1	0 0			33	P	N
2	W 530 K.2/14.8	I206			NH96G6602FIL42							
WOA-EHO-51C	EH OPERATOR-51C	216	110002	B D	4 3	2 1	0 0			33	P	N
2	W 530 K.2/14.7	I206			NH95G8602FIL41							
WOA-EHO-51D	EH OPERATOR FOR WOA-V-51D	216	110006	B D	4 3	2 1	0 0			33		N
2	W 530 K.1/14.6	I206										
WOA-EHC-51E	EH OPERATOR FOR WOA-V-51E	216	110006	B D	4 3	2 1	0 0			33		N
2	W 530 K.2/14.7	I206			NH9568602F1L41							
WOA-EHO-52A	EH OPERATOR FOR WOA-V-52A	216	110005	B D	4 3	2 1	0 0.			33		N
2	W 531 K.1/14.6	I206			NH96G6602FIL42							
WOA-EHC-52B	EH OPERATOR FOR WOA-V-52B	216	110005	B D	4 3	2 1	0 0			33		N
2	W 531 K.2/14.8	I206			NH96G6602FIL42							
WOA-EHC-52C	EH OPERATOR FOR WOA-V-52C	216	110002	B D	4 3	2 1	0 0			33		N
2	W 531 K.2/14.7	I206			NH9568602F1L41							
WOA-EHO-52D	EH OPERATOR FOR WOA-V-52D	216	110006	B D	4 3	2 1	0 0			33		N
2	W 531 K.1/14.6	I206										
WOA-EHO-52E	EH OPERATOR FOR WOA-V-52E	216	110006	B D	4 3	2 1	0 0			33		N
2	W 531 K.1/14.7	I206			NH95G6602F1L41							
WOA-MS-54A	MOISTURE SENSOR FOR WMA-AD-54A1	216			4 3							
2	W 535 H.6/12.5	A270			DFS-221							
WOA-MS-54B	MOISTURE SENSOR FOR WMA-AD-54B1	216			4 3							
2	W 535 L.7/11.1	A270			DFS-221							
WRA-EHC-7B7	CHARCOAL ADSORBER VAULT DOOR HTR	216		R D	4 3							
2	W											

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WNP-2
SAFETY RELATED MECHANICAL EQUIPMENT LIST

SEISMIC QUALIFICATION INFORMATION

September 25, 1981

Washington Public Power Supply System
Richland, Washington 99352

TABLE 271.02 - 2

NOTE 1. Description of codes used in safety related equipment lists

Column Designation	Description
Equipment No.	The equipment piece number (EPN) is listed. It is composed of the system designation (a complete list is enclosed), a component code (list enclosed) and a unique identifier.
Description	A short narrative description of the equipment.
Contract	The contract under which the equipment was purchased. The contracts beginning with 02 and Contract 59 were with the NSSS supplier. The two digit contracts are for equipment purchased through our A/E and the three digit contracts indicate equip-ent purchased through contractors at the construction site.
Q.I.D.	The Qualification Identification is a six digit number indicating a file which contains all the qualification documentation for that EPN along with summary forms and plant walk-through records.
Q.S.	Qualification Status indicates the seismic/hydrodynamic qualification of the equipment. The following list shows the meaning of the codes used.

- A - Acceptable, installed
- B - Acceptable, reviewed but installation status not yet determined.
- C - Acceptable, not installed
- D - No documentation in files
- M - Being requalified by analysis
- N - Not Acceptable, requalification method not yet determined
- P - Purchasing qualified replacement
- Q - Qualified by ASME code qualification. Vibratory loading not considered significant
- R - Not reviewed
- S - Qualified to date for seismic criteria only
- T - Being requalified by test

The second column shows the environmental qualification status, if available.

Column Designation	Description
USE	Contains codes which describe equipment use during accident and/or normal plant shutdown conditions.

The "USE" input field is a two digit field. The first digit shows the equipment operability requirement for accident mitigation, and the second shows the equipment operability requirements for Hot or Cold shutdown conditions.

X X

0 — The equipment is not required before, during, or after an accident.

Example: Equipment in this category provides no active function, but may provide a passive function by containing radioactive material outside the Reactor Building. It need not be qualified to demonstrate operability, even under non-accident service environments.

1 — Equipment that will experience the environmental conditions of design basis accidents for which it must function to mitigate said accidents, and that will be qualified to demonstrate operability in the accident environment for the time required for accident mitigation with safety margin to failure.

Example: Equipment in this category is required for accident mitigation of accidents analyzed in the FSAR. This includes: pumps, valves, electrical equipment, instrumentation to follow the course of an accident, etc.

2 — Equipment will experience environmental conditions of design basis accidents through which it need not provide an active function for mitigation of said accidents, but through which it must not fail in a manner detrimental to plant safety or accident mitigation, and that will be qualified to demonstrate the capability to withstand any accident environment for the time during which it must not fail with safety margin to failure.

Column Designation	Description	
	Example:	Equipment in this category must not actively fail in a manner detrimental to plant safety, e.g. a motor operated valve that is normally shut would be categorized as a "2" if its inadvertent opening would be detrimental to plant safety. Equipment that provides only a passive integrity function on a potentially contaminated system will be categorized as a "2" and will have a "P" placed in the "EC" column.
		Category 2 will include all manual boundary, integrity, test and root valves which may be exposed to post-LOCA and radioactive drain system components (FDR and EDR).
	3	Equipment that will experience environmental conditions of design basis accidents through which it need not function for mitigation of said accidents, and whose failure (in any mode) is deemed not detrimental to plant safety or accident mitigation, and need not be qualified for any accident environment but will be qualified for its non-accident service environment.
	Example:	Equipment in this category is limited to the 1E/1M equipment in the "harsh environments" which is Safety-Related only to prevent the release of radio-active material and will not be exposed to post-LOCA radioactive fluids.
		This category will include the components of the Reactor Water Clean-up System downstream of the second containment isolation valve.
	4	Equipment that will not experience environmental conditions of design basis accidents and that will be qualified to demonstrate operability under the expected extremes of its accident service environment. This equipment would be located outside the Reactor Building.
	Second Digit	
	X X	
	0	The equipment is not required to operate to shutdown the plant during normal conditions.

Column Designation	Description	
	1	The equipment is required to operate for Hot Shutdown only during normal plant conditions.
	2	The equipment is required to operate for Cold Shutdown only during normal plant conditions.
	3	The equipment is required to operate for both Hot Shutdown and Cold Shutdown during normal conditions.

Test

The test column describes the tests used to seismically qualify the equipment. It includes up to three digits. They are as follows:

X X X

First Digit - Method of determining natural frequency.

1 Resonance Sweep Test. A sinusoidal input (sine sweep) with continuously varying frequency is applied. The frequency band covers the range of frequencies from 1 to 33 hertz. This test is used as a resonance search test at low input (.2g-.4g) in support of sine Dwell (XX4) or sine beat (XX5) testing.

2 Resonance Analysis. The resonance of the specimen is determined by analysis. (The specimen is modeled using single degree of freedom oscillators.)

3 Reed critical test

4 Hammer blow

5 Attached Electromechanical Shaker (in SITU Test)

X X X Second Digit - Number of axes stimulated simultaneously

1 Single axis input. The input motion is applied to each principle axis independently.

2 Biaxial input. The input motion is applied to two principle axes simultaneously.

Column Designation	Description
3	Tri-axial input. The input motion is applied to each principle axes simultaneously.
4	Modified Bi-axial input. The specimen is mounted on the shake table in a fixture that supports the specimen at a 45° incline from the vertical. The input motion is then applied colinear with the specimen mounting. The input amplitude is adjusted by the 2 to account for resultant forces produced in the vertical and one principle horizontal axes. Thus, the time phasing of the input is in-phase for the axes (vertical and one horizontal) tested.
X X X	*Third digit - Frequency content*
1	Random Motion Multifrequency Test. The amplitude of which is controlled in 1/3 octave, or narrower, frequency bandwidth filters with individual output gain controls. Minimum duration of test is fifteen seconds (IEEE-344, 1975, 6.6.3.3).
2	Random Motion Multifrequency with sine beat superimposing. A composite exictation utilizing input motion of 1 above with sine beat or beats at peak frequencies in order to envelop the R.R.S. (IEEE-344, 1975 6.6.3.4).
3	Complex Wave. Not used (IEEE-344, 1975 6.6.3.5)
4	Continuous Sine Test (Sine Dwell). A continuous sinusoidal test conducted at the resonant frequencies determined from resonance search or analysis and/or near 33 hertz if no resonances are present between 1 and 33 hertz. (See response to 271.01 for acceptance criteria.)
5	Sine Beat Test. A test consisting of the application of sine beats of peak acceleration corresponding to resonance frequencies of the specimen and/or near 33 hertz if no resonances are present between 1 and 33 hertz. (See response to 271.01 for acceptance criteria.)

Column Designation	Description
	6 Sine sweep test. A sinusoidal input with continuously varying frequency is applied. The input amplitude is equal to the ZPA of the RRS except at low frequencies where the value of the TRS may follow the RRS. Justification is provided.
	7 Both 1 and 5 were performed.
	8 Random Motion Multifrequency Test and Sine Beat Test. Both 1 and 2 were performed.
	9 Continuous Sine Test (Sine Dwell) Over a Frequency Range. A continuous sinusoidal test conducted in 1/3 octave bands over the frequency range 1 to 33 Hz.
ANL	Analysis used as described below:
	X X
	0 1 Static analysis is performed by applying the seismic forces through the center of gravity of the specimen in addition to all other applicable loads. A pre-condition to the use of static analysis is that the specimen must contain no significant resonances below the ZPA.
	0 2 Dynamic Analysis. The specimen is modeled to best represent its mass distribution and stiffness characteristics. A response spectrum model analysis technique or a time history analysis is used. Results are combined using the square-root of the sum of the square basis except for closely spaced in-phase modes where the absolute value is used.
	0 3 Extrapolation. The results of testing on a prototype specimen is analyzed and the results extended to cover a generic line of similar equipment. Where the differences are significant, justification is provided.
C	Compliance Indicates which version of IEEE 344 was complied with. Not used at this time. (See qualification status.)

Column Designation	Description
FREQ	The lowest natural frequency (in cycles per second) found in the equipment. If a "+" follows that frequency, no natural frequency was found up to and including that frequency.
T.M.	Type of mounting indicated by the following code: D - Duct mounted F - Floor mounted H - Hanger mounted P - Pipe mounted R - Rack mounted W - Wall mounted
H.L.	Hydrodynamic loads indicates whether or not the equipment is subjected to hydrodynamic vibratory loads caused by an accident condition. "Y" indicates yes; "N" indicates no.
LV	Level assigned to equipment. An identifier which will permit the sorting of the 1E/1M list into major pieces of equipment, instrumentation, and subcomponent parts.
Level 1:	Class 1E/1M composite equipment which requires qualification of the overall assembly. Each composite piece of equipment will be identified with a unique Equipment Piece Number (EPN) and will have the symbol "+" added to the end of the EPN. Motor operated valves would be listed as composite equipment with a level designation of 1. Other examples would include the diesel generator skids, pump skids, air handling units, filter/dryer assemblies, air compressors, etc.
	Level 2: A class 1E/1M component or instrument function which requires individual qualification. The instrument function is described by an instrument loop which could include a sensor, a switch, an alarm, and indicator and/or a controller. Whenever an instrument loop is identified as Safety-Related, the sensor will receive a Level 2 designation and all other instrument loop components will be designated Level 3.

Column Designation	Description	
	Example 1:	For a motor-operated valve, the valve body, valve motor, and external limit switches (if they have a Safety-Related function) are all Level 2 components.
	Example 2:	An instrument consisting of a flow element, flow transmitter, flow switch and flow indicator would have the flow element as Level 2 with the other components as Level 3.
	Level 3:	Any 1E/1M instrumentation component not included in Level 2.
	Example:	A flow transmitter associated with a 1E/1M flow element would be designated as Level 3.
	Level 4:	A subcomponent of a class 1E/1M component.
	Example:	Internal limit switch to motor operators for valves, dropping resistors, pressure transmitter circuit boards, wiring, indicating lights, etc.
Plant Location	Shows the plant location using the following abreviations for building followed by elevation in feet and specific location. A - Auxiliary Buildings C - Part of or within Primary Containment D - Diesel Generator Building L - Offsite Locale M - Make-up Pump House O - Outdoors on Site P - Pump House R - Reactor Building S - Service Building T - Turbine Generator Building W - Radwaste/Control Building	
MFG	Manufacturer: Contains the code prepared for the industry by Southwest Research Corp. indicating the company who manufactured the equipment. In a few cases where the manufacturer has not been determined, the supplier's code was put in this column until the manufacturer has been determined.	

Column Designation	Description
MFG Model No.	The manufacturer's model number. In the cases where this has not been determined, General Electric purchased part drawing number or other applicable information is supplied.

SYSTEM CODE	SYSTEM TITLE
APRM	AVERAGE POWER RANGE MONITOR SYSTEM
CAC	CONTAINMENT ATMOSPHERE CONTROL SYSTEM
CAS	CONTROL AIR SYSTEM
CEP	CONTAINMENT EXHAUST PURGE SYSTEM
CIA	CONTAINMENT INSTRUMENT AIR SYSTEM
CMS	CONTAINMENT MONITORING SYSTEM
COND	NUCLEAR CONDENSATE SYSTEM
CRA	CONTAINMENT RETURN AIR SYSTEM
CRD	CONTROL ROD DRIVE SYSTEM
CSP	CONTAINMENT SUPPLY PURGE SYSTEM
CVB	CONTAINMENT VACUUM BREAKER SYSTEM
DCW	DIESEL COOLING WATER SYSTEM
DE	DIESEL EXHAUST (ENGINE) SYSTEM
DEA	DIESEL BUILDING EXHAUST AIR (HVAC) SYSTEM
DG	DIESEL GENERATOR SYSTEM
DLO	DIESEL LUBE OIL SYSTEM
DMA	DIESEL BUILDING MIXED AIR (HVAC) SYSTEM
DO	DIESEL OIL SYSTEM
DOA	DIESEL BUILDING OUTSIDE AIR (HVAC) SYSTEM
DSA	DIESEL STARTING AIR SYSTEM
E	ELECTRICAL SYSTEM.
EDR	EQUIPMENT DRAINS (RADIOACTIVE) SYSTEM
FDR	FLOOR DRAIN RADIOACTIVE SYSTEM
FPC	FUEL POOL COOLING SYSTEM
HPCS	HIGH PRESSURE CORE SPRAY SYSTEM
HY	RCC HYDRAULIC CONTROL
IRM	INTERMEDIATE RANGE MONITOR
LD	LEAK DETECTION SYSTEM
LPCS	LOW PRESSURE CORE SPRAY SYSTEM
LPRM	LOCAL POWER RANGE MONITOR SYSTEM
MS	MAIN STEAM (NUCLEAR) SYSTEM
MSLC	MAIN STEAM LEAKAGE CONTROL SYSTEM
MT	MATERIAL TRANSPORT SYSTEM
MWR	MISCELLANEOUS WASTE (RADIOACTIVE) SYSTEM
NSSE	NUCLEAR SYSTEM SERVICING EQUIPMENT SYSTEM
PI	PROCESS INSTRUMENTATION SYSTEM
PNL	PANEL
POA	PUMP HOUSE OUTSIDE AIR (HVAC) SYSTEM
PRA	PUMP HOUSE RETURN AIR (HVAC) SYSTEM
RCC	CLOSED COOLING WATER SYSTEM
RCIC	REACTOR CORE ISOLATION COOLING SYSTEM
REA	REACTOR BUILDING EXHAUST AIR (HVAC) SYSTEM
RFW	REACTOR FEEDWATER SYSTEM
RHR	RESIDUAL HEAT REMOVAL SYSTEM
ROA	REACTOR BUILDING OUTSIDE AIR (HVAC) SYSTEM
RPS	REACTOR PROTECTION SYSTEM
RRA	REACTOR BUILDING RETURN AIR (HVAC) SYSTEM
RRC	REACTOR RECIRCULATION SYSTEM
RWCU	REACTOR WATER CLEANUP SYSTEM
S	SAMPLING SYSTEM
SGT	STANDBY GAS TREATMENT SYSTEM
SLC	STANDBY LIQUID CONTROL SYSTEM
SPTM	SUPRESSION POOL TEMP MONITORING SYSTEM

WASHINGTON PUBLAIC POWER SUPPLY SYSTEM
MASTER EQUIPMENT LIST
SYSTEM CODE LIST

SYSTEM CODE	SYSTEM TITLE
SRM	SOURCE RANGE MONITOR SYSTEM
SW	STANDBY SERVICE WATER SYSTEM
TIP	TRAVERSING INCORE PROBE SYSTEM
WEA	WASTE BUILDING EXHAUST AIR (HVAC) SYSTEM
WMA	WASTE BUILDING MIXED AIR (HVAC) SYSTEM
WOA	WASTE BUILDING OUTSIDE AIR (HVAC) SYSTEM
WRA	WASTE BUILDING RETURN AIR (HVAC) SYSTEM

COMP CODE	COMPONENT IDENTIFICATION
AC	AIR CONDITIONING UNIT
AD	AIR DAMPER
AH	AIR HANDLING UNIT
ALM	ALARM
ALT	ALTERNATING RELAY
AM	AMMETER
AMP	AMPLIFIER
ANN	ANNUNCIATORS
AO	AIR OPERATOR
AR	AIR RECEIVER
AR	ALARM RECORDER
ASW	AIR SWITCH
AUX	AUX. INST. OR ELECT. EQUIP
AV	AIR RELEASE VALVE
AW	AIR WASHER
AY	ANALYZER
BD	BOARD
BJM	BRANCH JUNCTION MODULE
BL	BALER
BLR	BOILER
BUOY	BUOY
B0	24 VOLT BATTERY
B1	125 VOLT BATTERY
B2	250 VOLT BATTERY
B3	
C	COMPRESSOR
CAR	CHLORINE ANALYZER/RECORDER
CB	CIRCUIT BREAKER
CBL	CABLE
CC	COOLING COIL
CCU	CENTRAL CONTROL UNIT
CE	CONDUCTIVITY ELEMENT
CF	CHARCOAL FILTER
CHL	CHLORINATORS
CI	CONDUCTIVITY INDICATOR
CIS	CONDUCTIVITY INDIC. SWITCH
CIST	CONDUCTIVITY IND TRAN SWITCH
CIT	CONDUCTIVITY INDIC. TRANSMIT
CNTR	CONTACTOR,*CL.1E ONLY*
COE	CORROSIVITY SENSOR
COMP	COMPUTER
CON	CONDUCTIVITY ANAL/CONTROLLER
CONN	CONNECTOR,*CL.1E ONLY*
COR	CORROSIVITY RECORDER
CP	CONTROL PANEL
CPL	DATA COUPLER
CR	DIODE,*CL.1E ONLY*
CR	CONDUCTIVITY RECORDER
CR	CHILLER
CRA	CRANE
CRM	CONTROL ROOM MODULE
CS	CONDUCTIVITY SWITCH
CT	CURRENT TRANSFORMER

WASHINGTON PUBLIC POWER SUPPLY SYSTEM
MASTER EQUIPMENT LIST
COMPONENT TABLE

COMP CODE	COMPONENT IDENTIFICATION
CT	CONDUCTIVITY TRANSMITTER
CT	COOLING TOWER
CU	CONDENSING UNIT
C0	24 VOLT BATTERY CHARGER
C1	125 VOLT BATTERY CHARGER
C2	250 VOLT BATTERY CHARGER
C3	
D	DAMPER
DC	DUST COLLECTOR
DE	DENSITY ELEMENT
DET	DETECTOR
DFS	DIFFERENTIAL FLOW SWITCH
DIF	DIFFUSER
DISC	FUSED DISCONNECT
DLR	DIFFERENTIAL LEVEL RECORDER
DLS	DIFFERENTIAL LEVEL SWITCH
DLT	DIFFEREN LEVEL TRANSMITTER
DM	DEMINERALIZER
DMS	DEMISTER
DMTR	DEMAND METER
DOE	DISSOLVED OXYGEN ELEMENT
DOIT	DISSOLVED OXYGEN INDIC TRANS
DOOR	DOOR
DP	DISTRIBUTION PANEL
DPC	D PRESS CONTROLLER
DPE	DRIP PAN ELBOW
DPI	D PRESS INDICATOR
DPIC	D PRESS INDICAT. CONTROLLER
DPIR	D PRESS INDICTAT RECORDER
DPIS	D PRESS INDICATING SWITCH
DPIT	D PRESS INDICAT TRANSMITTER
DPR	D PRESS RECORDER
DPRC	D PRESS RECORDING CONTROLLER
DPS	D PRESS SWITCH
DPT	D PRESS TRANSMITTER
DRVE	DRIVE
DS	DENSITY SWITCH
DT	DENSITY TRANSMITTER
DT	DRIVE TURBINE
DTIS	D TEMP INDICATING SWITCH
DTRS	D TEMP RECORDING SWITCH
DTT	D TEMP TRANSMITTER
DU	DEAERATOR
DV	DUMP VALVE
DVSP	DRAIN VALVE SPV
DY	DRYER
E/H	ELECTROHYDRAULIC CONVERTER
E/P	ELECTROPNUEMATIC CONVERTER
E/S	ELECTRONIC POWER SUPPLY
EAMP	VOLTAGE AMPLIFIER OR PREAMPL
ED	EDUCTOR
EFCX	EXCESS FLOW CHECK VALVE
EHC	ELECTRIC HEATING COIL

WASHINGTON PUBLIC POWER SUPPLY SYSTEM
MASTER EQUIPMENT LIST
COMPONENT TABLE

COMP CODE	COMPONENT IDENTIFICATION
EHO	ELECTROHYDRAULIC OPERATOR
EI	VOLTMETER(SEE V FOR B&R USE)
EJ	EXPANSION JOINT
EJC	EJECTOR,INJECTOR OR EDUCTOR
ELEV	ELEVATOR
ELF	EMER LIGHT FIXTURE,*CL.1E*
ELP	EMERGENCY LIGHTING PANEL
EMSQ	MEAN SQUARE VOLTAGE DEVICE
ENG	ENGINE
EPP	EMERGENCY POWER PANEL
EQ	SPECIALITY EQUIP AND TOOLS
ES	EXHAUST SILENCER
ESH	ELECTRIC STRIP HEATER
ETD	TRANSDUCER,VOLTAGE
EUH	ELECTRIC UNIT HEATER
EV	EVAPORATOR
EX	EXHAUSTER
EXC	EXCITER
F	PIPING FILTER
FA	FLAME ARRESTOR
FC	FAN COIL
FC	FLOW CONTROLLER
FCN	FILL CONNECTION
FCV	FLOW CONTROL VALVE
FE	FLOW ELEMENT
FG	FLOW GLASS
FGEN	FUNCTION GENERATOR
FH	FUME HOOD
FI	FLOW INDICATOR
FIC	FLOW INDICATING CONTROLLER
FIS	FLOW INDICATING SWITCH
FIT	FLOW INDICATING TRANSMITTER
FL	FILTER
FLT	FILTER
FLX	FLEXIBLE CONNECTION
FN	FAN
FO	FREON ACTUATED OPERATOR
FQ	FLOW INTEGRATOR
FQI	FLOW INTEGRATING INDICATOR
FQS	FLOW INTEGRATING SWITCH
FR	FLOW RECORDER
FRC	FLOW RECORDING CONTROLLER
FRCS	FLOW RECORDING CONTRL SWITCH
FRS	FLOW RECORDING SWITCH
FS	FLOW SWITCH
FSPV	FLOW CONTROL VLV-SPV
FT	FLOW TRANSMITTER
FTD	TRANSDUCER,FREQUENCY
FU	FILTER UNIT
FUB	FUSEBLOCK HOLDER*CL.1E ONLY*
FUSE	FUSE,*CL.1E ONLY*
FX	FLOW TEST POINT
GEN	GENERATOR

COMP CODE	COMPONENT IDENTIFICATION
GVT	GRAVITY VENTILATOR
H	HEATER
HAS	HIGH AMPLITUDE SELECTOR
HC	HEATING COIL
HCU	HYDRAULIC CONTROL UNIT
HF	HIGH EFFICIENCY FILTER
HGR	HANGER,SNUBBER,STRUT & SUPPT
HO	HYDRAULIC OPERATOR
HOI	HOIST
HP	HYDRAULIC POWER UNIT
HR	HYDROGEN RECOMBINER
HS	HOSE STATION
HT	HYDRANT
HTP	HOT WATER HEAT EXCHANGER
HU	HUMIDIFIER
HV	HEATING AND VENTILATION UNIT
HX	HEAT EXCHANGER
HZM	FREQUENCY METER
H2R	HYDROGEN RECORDER
I/P	CURRENT/PNEUMATIC CONVERTER
IL	INDICATOR LIGHT,*CL.1E ONLY*
IN	INVERTER
IR	INSTRUMENT RACK
ITD	TRANSDUCER,CURRENT
JI	WATTMETER(SEE W FOR B&R USE)
JP	JET PUMP
LA	LIGHTNING ARRESTOR
LAG	ELECTRONIC TIME DELAY
LAS	LOW AMPLITUDE SELECTOR
LC	LEVEL CONTROLLER
LCV	LEVEL CONTROL VALVE
LE	LEVEL ELEMENT
LG	LEVEL GLASS
LI	LEVEL INDICATOR
LIC	LEVEL INDICATING CONTROLLER
LIS	LEVEL INDICATING SWITCH
LITS	LEVEL INDIC TRANS SWITCH
LMS	LIMIT SWITCH
LMS	LOCAL MANUAL SWITCH
LMTR	VOLTAGE/CURRENT SIGNAL LIMIT
LOC	LUBE OIL CONDITIONER
LP	LIGHTING PANEL
LPW	ELECTRONIC POWER SUPPLY(E/S)
LR	LEVEL RECORDER
LRS	LEVEL RECORDING SWITCH
LS	LEVEL SWITCH
LSPV	LEVEL CONTROL VLV-SPV
LT	LEVEL TRANSMITTER
LTD	TRANSDUCER LEVEL
LWS	LOW VOLUME SELECTOR
LX	LEVEL TEST POINT
M	MOTOR
M/A	MANUAL OR AUTO STATION

COMP CODE	COMPONENT IDENTIFICATION
MC	MOISTURE CONTROLLER
MC	MOTOR CONTROL CENTER
ME	MOISTURE ELEMENT
MI	MOISTURE INDICATOR
MIC	MOISTURE INDIC CONTROLLER
MIS	MOISTURE INDICATING SWITCH
MO	MOTOR OPERATOR
MR	MOISTURE RECORDER
MS	MOISTURE SEPARATOR
MT	MOISTURE TRANSMITTER
MV/I	M/VOLT TO CURRENT CONVERTER
MV/P	MILLIVOLT TO PNEUMATIC CONVE
MX	MIXER
MZ	MULTIZONE AIR CONDITIONER
N	NOZZLE
NR	NEUTRAL GROUNDING RESISTOR
OSC	OSCILLOGRAPH
O2R	OXYGEN RECORDER
P	PUMP
PBU	SEISMIC PLAYBACK UNIT
PC	PRESSURE CONTROLLER
PCV	PRESSURE CONTROL VALVE
PH	PH ANALYZER
PHE	PH ELEMENT
PHIC	PH INDICATING CONTROLLER
PHIT	PH INDICATING TRANSMITTER
PHRC	PH RECORDING CONTROLLER
PHT	PH TRANSMITTER
PI	PRESSURE INDICATOR
PIC	PRESS INDICATING CONTROLLER
PIS	PRESSURE INDICATING SWITCH
POE	POSITION INDICATION ELEMENT
POI	POSITION INDICATOR
POS	POSITION SWITCH
POT	POSITION TRANSMITTER
POTR	POTENTIOMETER,*CL.1E ONLY*
PP	PUMP PACKAGE
PP	POWER PANEL
PR	PRESSURE RECORDER
PROG	PROGRAMMER
PRV	PRESSURE REDUCING VALVE
PS	PRESSURE SWITCH
PSV	SOLENOID PILOT VALVE
PT	POTENTIAL TRANSFORMER
PT	PRESSURE TRANSMITTER
PTD	PRESSURE TRANSDUCER
PUI	PURITY INDICATOR
PUIT	PURITY INDIC TRANSMITTER
PUS	PURITY SWITCH
PV	PILOT VALVE
PWC	DEW POINT TRANSMITTER
PWS	PIPE WHIP RESTRAINT
PX	PRESSURE TEST POINT

COMP CODE	COMPONENT IDENTIFICATION
QDC	QUICK DISCONNECT COUPLING
QHM	RUN TIME METER
QSV	QUICK ACTING SOLENOID PILOT
R/I	RESISTANCE/CURRENT CONVER
RAM	RADIATION AMPLIFIER
RC	REMOTE CAPPER
RC	RADIATION CONTROLLER
RC	RECOMBINER
RD	RUPTURE DISC
RE	RADIATION ELEMENT
REL	FLOW BALANCING RELAY
RES	ESISTOR,*CL.1E ONLY*
RF	REFRIGERATION MACHINE
RI	RADIATION INDICATOR
RIS	RADIATION INDICATING SWITCH
RLY	RELAY
RMC	REMOTE MANUAL CONTROLLER
RMS	REMOTE MANUAL CONTROL SWITCH
RO	RESTRICTING ORIFICE
ROD	ROD
RPV	REACTOR PRESSURE VESSEL
RR	RADIATION RECORDER
RS	RADIATION SWITCH
RSA	RESPONSE SPECTRUM ANNUNCIATO
RSM	RADIATION SAMPLER
RSR	TRIAXIAL RESPONSE SPECTRUM R
RSRT	RSR TRANSDUCER FOR RSA
RST	RESIN TRAP
RT	RADIATION TRANSMITTER
RV	RELIEF VALVE
RVT	ROOF VENTILATOR
S	ELECTRONIC TRIP UNIT
S	SILENCER
SC	SPEED CONTROLLER
SCR	SCREEN
SE	SPEED ELEMENT
SEW	SAFETY EYE WASH
SH	6.9 KV SWITCH GEAR
SI	SPEED INDICATOR
SIOA	SILICON AND OXYGEN ANALYZER
SL	480VOLT SWITCH GEAR
SM	4.16KV SWITCH GEAR
SMA	TRIAXIAL ACCELERATION SENSOR
SMD	SMOKE DETECTOR
SMX	STATIC MIXER
SNB	SNUBBER
SP	SAMPLE POINT
SPV	SOLENIOD PILOT VALVE
SQRT	SQUARE ROOT EXTRACTOR
SR	SAMPLE RACK
SS	SELECTOR SWITCH
SS	SPEED SWITCH
ST	STRAINER

COMP CODE	COMPONENT IDENTIFICATION
ST	SEISMIC TRIGGER
SUH	STEAM UNIT HEATER
SUM	SUMMER
SUMP	SUMP
SV	SOLENOID OPERATED VALVE
T	TRAP
T/SS	(TEMP) SELECTOR SWITCH
TA	TRIP AUXILIARY UNIT
TAPE	MAGNETIC TAPE UNIT
TBE	TURBIDITY ELEMENT
TBIT	TURBIDITY INDICATING TRANS
TBR	TURBIDITY RECORDER
TBS	TURBIDITY SWITCH
TBT	TURBIDITY TRANSMITTER
TC	TEMPERATURE CONTROLLER
TCV	TEMPERATURE CONTROL VALVE
TD	TIME DELAY RELAY
TD	TRANSFER DOLLY
TDS	TIME DELAY SWITCH
TE	TEMPERATURE ELEMENT
TI	TEMPERATURE INDICATOR
TIC	TEMP INDICATING CONTROLLER
TIS	TEMP INDICATING SWITCH
TK	TANK
TM	TIMER
TQ	TIME TOTALIZER
TQR	TORQUE RECORDER
TQS	TORQUE SWITCH
TQT	TORQUE TRANSMITTER
TR	TRANSFORMER
TR	TEMPERATURE RECORDER
TR	TRIAXIAL RECORDER
TRB	TERMINAL BLOCK/STRIP*CL.1E*
TRL	TRANSLATOR
TRS	TEMPERATURE RECORDING SWITCH
TS	TEMPERATURE SWITCH
TSC	TEMPERATURE SCANNER
TT	TEMPERATURE TRANSMITTER
TV	TEST VALVE
TX	THERMOWELL
TY	RELAY,PNEUMATIC CONTROL
UFM	UNIPLEX FIELD MODULE
V	VALVE
V	USE EI FOR MEL(B&R USE ONLY)
VARM	VAR METER
VATD	TRANSDUCER,VAR
VB	VACUUM BREAKER
VBAM	VIBRATION AMPLIFIER
VBE	VIBRATION ELEMENT
VBEC	VIBRATION/ECCENTRICITY INDIC
VBIS	VIBRATION INDICATING SWITCH
VBS	VIBRATION SWITCH
VD	VIEWING DEVICE

COMP CODE	COMPONENT IDENTIFICATION
VX	INSTRUMENT ISOLATION VALVE
VZ	VAPORIZER
W	USE JI FOR MEL(B&R USE ONLY)
WDR	WIND DIRECTION RECORDER
WDT	WIND DIRECTION TRANSMITTER
WHM	WATT-HOUR METER
WSR	WIND SPEED RECORDER
WST	WIND SPEED TRANSMITTER
WTD	WATT TRANSDUCER
WUH	WATER UNIT HEATER
X	PRIMARY CONTAINMENT PENETRAT
XE	ELEMENT, SPECIAL TYPES
XR	RECORDER,SPECIAL TYPES
XT	TRANSMITTER, SPECIAL TYPES
33C	VLV TRVL POS SW CLOSED
33IC	VLV TRVL POS SW INTER CLOSED
33IO	VLV TRVL POS SW INTER OPEN
33O	VLV TRVL POS SW OPEN
33TC	VLV TRVL POS SW TORQ CLOSED
33TO	VLV TRVL POS SW TORQ OPEN
42	ELECTRICAL MOTOR START COIL

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TH	HL
CAC-EV-1A+	COMPOSITE FOR AFTERCOOLER 1A				1 0							
1												
CAC-EV-1B+	COMPOSITE FOR AFTERCOOLER 1B				1 0							
1												
CAC-FCV-1A	2.5" (EHO) FLOW CONTROL FROM X-99	42A	133001	M	1 0		0 1					N
2	R 575 M2/5.2	F130			53A5659							
CAC-FCV-1B	2.5" (EHO) FLOW CONTROL FROM X-97	42A	133001	M	1 0		0 1					N
2	R 564 J.6/6.7	F130			53A5659							
CAC-FCV-2A	2.5" (EHO) FLOW CONTROL TO X-96	42A	133004	M	1 0		0 1					N
2	R 560 M.1/7.7	F130			AU6185							
CAC-FCV-2B	2.5" (EHO) FLOW CONTROL TO X-98	42A	133004	M	1 0		0 1					N
2	R 558 M.5/6.6	F130			AU6185							
CAC-FCV-3A	2.5" (EHO) FLOW CONTROL FROM X-105	42A	133001	M	1 0		0 1					N
2	R 495 M.8/4.7	F130			53A5659							
CAC-FCV-3B	2.5" (EHO) FLOW CONTROL FROM X-104	42A	133001	M	1 0		0 1					N
2	R 496 J.0/7.4	F130			53A5659							
CAC-FCV-4A	2.5" (EHO) FLOW CONTROL TO X-102	42A	133001	M	1 0		0					N
2	R 495 N.4/6.0	F130			53A5659-6							
CAC-FCV-4B	2.5" (EHO) FLOW CONTROL TO X-103	42A	133001	M	1 0		0					N
2	R 495 N.4/6.0	F130			53A5659							
CAC-FCV-5A	1.0" GLOBE CAC-AW-1A S.W. INLET	71	133005	A	1 0	2 1						N
2	R 572 M.6/6.4	C678			47							
CAC-FCV-5A+	COMPOSITE FOR CAC-FCV-5A				1 0							
1	M.6/6.4											
CAC-FCV-5B	1.0" GLOBE CAC-AW-1B S.W. INLET	71	133005	A	1 0	2 1					F	N
2	R 573 M.6/7.5	C678			48							
CAC-FCV-5B+	COMPOSITE FOR CAC-FCV-5B				1 0							
1	R 573 M.6/7.5											
CAC-FCV-6A	2.0" EHO GLOBE CAC-FN-1A RECIRC.	71	133005	A	1 0	2 1					F	N
2	R 572 M.6/6.4	C678			50							
CAC-FCV-6A+	COMPOSITE FOR CAC-FCV-6A				1 0							
1	M.6/6.4											
CAC-FCV-6B	2.0" EHO GLOBE CAC-FN-1B RECIRC.	71	133005	A	1 0	2 1					F	N
2	R 573 M.6/7.5	C678			49							
CAC-FCV-6B+	COMPOSITE FOR CAC-FCV-6B				1 0							
1	M.6/7.5											
CAC-FN-1A	BLOWER 25 HP	71	145021	A	1 0	2 1					F	N
2	R 572 M.5/6.6	A136			01.14							
CAC-FN-1B	BLOWER 25 HP	71	145021	A	1 0	2 1					F	N
2	R 572 M.5/7.4	A136			01.14							
CAC-RV-63A	1" X 2" RELIEF CAC-EV-1A S.W.	71	297003	A	1 0	2 1					F	N
2	R 573 M.5/6.6	L263			0300							
CAC-RV-63B	1" X 2" RELIEF CAC-EV-1B S.W.	71	297003	A	1 0	2 1					F	N
2	R 573 M.5/6.6	L263			0300							
CAC-RV-65A	RELIEF CAC-EV-1A DISCH 1 1/2" X 3"		297016	A	1 0	2 1					F	N
2	R 573 M.5/6.6	A415			830SH153							
CAC-RV-65B	RELIEF CAC-EV-1A DISCH 1 1/2" X 3"		297016	A	1 0	2 1					F	N
2	R 573 M.5/6.6	A415			830SH152							
CAC-TCV-4A	2.0" GLOBE CAC-EV-1A SW IN (EHO)	71	335005	A	1 0	2 1					F	N

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EQUIPMENT NO.	LV	DESCRIPTION	PLANT LOCATION	CONTRACT	MFG	QID	QS	USE	MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
	2		R 572 M.6/6.4		C678				46							
CAC-TCV-4A+	1	COMPOSITE FOR CAC-TCV-4A	R 572 M6/6.4					1 0								
CAC-TCV-4B	2	2.0" GLOBE CAC-EV-1B S.W. INLET	R 573 M.6/7.5	71	C678		A	1 0		2 1	4				F	N
CAC-TCV-4B+	1	COMPOSITE FOR CAC-TCV-4B	M.6/7.5					1 0								
CAC-V-1A	2	2" SAUNDERS TO CAC-AW-1A (EHD)	R 572 M.6/6.4	71	I207	361943	A	1 0	NH-95C2670F3L2	2 1					F	N
CAC-V-1A+	1	COMPOSITE FOR CAC-V-1A	M.6/6.4					1 0								
CAC-V-1B	2	2" SAUNDERS TO CAC-AW-1B (EHD)	R 573 M.6/7.5	71	I207	361943	A	1 0	NH-95C2670F3L2	2 1					F	N
CAC-V-1B+	1	COMPOSITE FOR CAC-V-1B	M.6/7.5					1 0								
CAC-V-11	2	4.0" GATE CAC LINE TO (X-98)	R 558 M.4/6.4	41A	V085	361703	M	1 0	DWG P23311N7		0 1			58		N
CAC-V-13	2	4.0" GATE CAC LINE TO (X-103)	R 495 N.4/6.0	41A	V085	361703	B	1 0	DWG P2-3311-N-7		0 1			58		N
CAC-V-15	2	4.0" GATE CAC LINE FROM (X-97)	R 564 J.6/6.8	41A	V085	361703	B	1 0	DWG P2-3311-N7		0 1			58		N
CAC-V-17	2	4.0" GATE CAC LINE FROM (X-104)	R 496 J.0/7.4	41A	V085	361703	B	1 0	DWG P2-3311-N-7		0 1			58		N
CAC-V-2	2	4.0" GATE CAC LINE TO (X-96)	R 560 L.2/7.1	41A	V085	361703	A	1 0	DWG P2-3311-N-7		0 1			58		N
CAC-V-2A	2	2.0" SAUNDERS (E10)	R 572 M.6/6.4	71	I207	361944	A	1 0	NH-91C2070F3L2	2 1					F	N
CAC-V-2A+	1	COMPOSITE FOR CAC-V-2A	M.6/6.4					1 0								
CAC-V-2B	2	2.0" SAUNDERS (E10)	R 573 M.6/7.5	71	I207	361944	A	1 0	NH-91C2070F3L2	2 1					F	N
CAC-V-2B+	1	COMPOSITE FOR CAC-V-2B	M.6/7.5					1 0								
CAC-V-3A	2	0.75" GLOBE CAC-MS-1A DRAIN	R 572 M.6/6.4	71	I207	361945	A	1 0	NH-95C1670F3L3	2 1					F	N
CAC-V-3A+	1	COMPOSITE FOR CAC-V-3A	M.6/6.4					1 0								
CAC-V-3B	2	0.75" GLOBE CAC-MS-1B DRAIN	R 573 M.6/7.5	71	I207	361945	A	1 0	NH-95C1670F3L3	2 1					F	N
CAC-V-3B+	1	COMPOSITE FOR CAC-V-3B	R 573 M6/7.5					1 0								
CAC-V-4	2	4.0" GATE CAC LINE TO (X-102)	R 491 M.9/8.7	41A	V085	361703	C	1 0	P23311-N-7		0 1			58		N
CAC-V-6	2	4.0" GATE CAC LINE FROM (X-99)	R 514 L.7/5.5	41A	V085	361703	B	1 0	DWG P2-3311-N-7		0 1			58		N
CAC-V-8	2	4.0" GATE CAC LINE FROM (X-105)	R 492 M.7/4.7	41A	V085	361703	B	1 0	DWG P2-3311-N-7							
CAS-V-453	2	1" SO GLOBE ROOT CTRL WW VAC BRKRS		215				2 0								

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EQUIPMENT NO. LV	DESCRIPTION PLANT LOCATION	CONTRACT MFG	QID	QS	USE MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TN	HL
CEP-AO-1A	AIR OPERATOR FOR CEP-V-1A	68		R	2 3							
2	R 560 J.4/5.4											
CEP-AO-1B	AIR OPERATOR FOR CEP-V-1B	68		R	2 3							
2	R 558 J.4/5.3											
CEP-AO-2A	AIR OPERATOR FOR CEP-V-2A		018001	R	2 3							
2	R 558 J.4/5.4	M322			DWG A838							
CEP-AO-2B	AIR OPERATOR FOR CEP-V-2B	68		R	2 3							
2	R 558 J.4/5.3											
CEP-AO-3A	AIR OPERATOR FOR CEP-V-3A	68	018001	R	2 3							
2	R 497 H.5/5.4	M322			A838							
CEP-AO-3B	AIR OPERATOR FOR CEP-V-3B	68		R	2 3							
2	R 495 H.5/5.7	I206			DWG V502L119A							
CEP-AO-4A	AIR OPERATOR FOR CEP-V-4A	68	018001	R	2 3							
2	R 497 H.5/5.4	M322			A838							
CEP-AO-4B	AIR OPERATOR FOR CEP-V-4B	68		R	2 3							
2	R 498 H.5/5.4	I206			CAT 502JGE62EAZ0/							
CEP-V-1A	30.0" BFLY(AO) DRYWELL EXHAUST	68	361104	M	2 3							
2	R 558 J.4/5.4	B250			DWG A-206763							
CEP-V-1A+	COMPOSITE FOR VALVE CEP-V-1A	68			2 3							
1	J.4/5.4											
CEP-V-1B	2" GATE CEP-V-1A BYPASS	68	361402	N	2 3		0 1					Y
2	R 558 J.4/5.3	I208			73/9249/001							
CEP-V-1B+	COMPOSITE FOR VALVE CEP-V-1B+				2 3							
1	J.4/5.3											
CEP-V-2A	30.0" BLFY DRYWELL EXHAUST(AO)	68	361104	M	2 3							
2	R 558 J.4/5.4	B250			DWG A-206763							
CEP-V-2A+	COMPOSITE FOR VALVE CEP-V-2A	68			2 3							
1	J.4/5.4											
CEP-V-2B	2" GATE CEP-V-2A BYPASS	68	361402	N	2 3		0 1					Y
2	R 558 J.4/5.3	I208			DWG V-502L-119A							
CEP-V-2B+	COMPOSITE FOR VALVE CEP-V-2B	68			2 3							
1	J.4/5.3											
CEP-V-3A	24.0" BLFY SUPP. CHAMBER EXHAUST	68	361105	M	2 3		0 1					N
2	R 495 H.5/5.4	B250			DWG A-206764							
CEP-V-3A+	COMPOSITE FOR VALVE CEP-V-3A	68			2 3							
1	R 495 H.5/5.4											
CEP-V-3B	2.0" GATE CEP-V-3A BYPASS	68	361402	T	2 3		0 1					N
2	R 495 H.7/5.6	I208			DWG V502L119A							
CEP-V-3B+	COMPOSITE FOR VALVE CEP-V-3B	68			2 3							
1	R 475 H.7/5.6											
CEP-V-4A	24.0" BFLY SUPP.CHAMBER EXHAUST	69	361105	M	2 3		0 1					N
2	R 495 H.5/5.4.	B250			DWG A-206764							
CEP-V-4A+	COMPOSITE FOR VALVE CEP-V-4A	68			2 3							
1	H.5/5.7											
CEP-V-4B	2.0" GATE CEP-V-4A BYPASS	69	361402	T	2 3		0 1					N
2	R 495 H.5/5.7	I208			V-502L-119A							
CEP-V-4B+	COMPOSITE FOR VALVE CEP-V-4B	69			2 3							
1	H.5/5.7											
CIA-V-20	.75"GLB.(MO)OUTERMOST ISOLATION	215	361201	M	1 3		0 1			36		N

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT	MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 540 J.5/7.1		B350			DWG 3040CAB3-001							
CIA-V-20+	COMPOSITE FOR CIA-V-20					1 3							
1	R 540 J.5/7.1												
CIA-V-30A	.5"(MO) GLB. N2 OUTER ISOL (X-89)	215		361203	N	1 3		0 1			49		N
2	R 540 J.5/4.3		B350			DWG 82110							
CIA-V-30A+		215				1 3							
1	R 540 J.5/4.3												
CIA-V-30B	.5"(MO) GLB N2 OUTER ISOL (X-91)	215		361203	N	1 3		0 1			49		N
2	R 545 M.5/7.0		B350			DWG 82110							
CIA-V-30B+		215				1 3							
1	R 545 M.5/7.0												
CRA-AD-1A1	CRA-FC-1A DISCHARGE	216			R	3 3							
2	C 520 60 D AZ R19		P295										
CRA-AD-1A1+						3 3							
1	C 520 60 D AZ R19												
CRA-AD-1A2	CRA-FC-1A2 DISCHARGE	216			R	3 3							
2	C 516 60 D AZ R19		P295										
CRA-AD-1A2+						3 3							
1	C 516 60 D AZ R19												
CRA-AD-1B1	CRA-FC-1B DESCHARGE	216			R	3 3							
2	C 514 200 D AZ R19		P295										
CRA-AD-1B1+						3 3							
1	C 514 200 D AZ R19												
CRA-AD-1B2	AIR DAMPER (EHO) TO CRA-FC-1B	216			R	3 3							
2	C 509 210 D AZ R18		P295										
CRA-AD-1B2+						3 3							
1	C 509 210 D AZ R18												
CRA-AD-1C1	CRA-FC-1C DISCHARGE	216			R	3 3							
2	C 520 293 D AZ R21		P295										
CRA-AD-1C1+						3 3							
1	C 520 290 D AZ R21												
CRA-AD-1C2	CRA-FC-1C DISCHARGE	216			R	3 3							
2	C 515 295 D AZ R21		P295										
CRA-AD-1C2+						3 3							
1	C 515 290 D AZ R21												
CRA-AD-2A	CRA-FC-2A DISCHARGE	216		011002	R	3 3						D	
2	C 556 345 D AZ R22		P295			NH95							
CRA-AD-2A+													
1	C 556 345 D AZ R22												
CRA-AD-2B	CRA-FC-2B DISCHARGE	216		011002	R	3 3						D	
2	C 556 200 D AZ R22		P295			NH95							
CRA-AD-2B+	COMPOSITE OF CRA-AD-2B					3 3							
1													
CRA-CC-1A	FOR CRA-FC-1A COOLING COIL	67		037001	H	3 3		0 1			21		Y
2	C 501 64 D AZ R30		C780										
CRA-CC-1B	FOR CRA-FC-1B COOL. COIL	67		037001	H	3 3		0 1			21		Y
2	C 501 184 D AZ R30		C780										
CRA-CC-1C	FOR CRA-FC-1C COOL. COIL	67		037001	H	3 3		0 1			21		Y
2	C 501 273 D AZ R30		C780										

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
CRA-CC-2A	FOR CRA-FC-2A COOL. COIL	67	037001	M	3 3		0 1			21		Y
2	C 545 0 D AZ R23	C780										
CRA-CC-2B	FOR CRA-FC-2B COOL. COIL	67	037001	M	3 3		0 1			21		Y
2	C 541 217 D AZ R23	C780										
CRA-FC-1A	LOWER LEVEL FAN COIL UNIT	67	130004	M	3 3		0 1			21	F	Y
2	C 501 64 D AZ R30	P295			AX-560							
CRA-FC-1A+	LOWER LEVEL FAN COIL UNIT				3 3							
1	C 501 64 D AZ R30											
CRA-FC-1B	LOWER LEVEL FAN COIL UNIT	67	130004	M	3 3		0 1			21	F	Y
2	C 501 184 D AZ R30	P295			AX-560							
CRA-FC-1B+	LOWER LEVEL FAN COIL UNIT				3 3							
1	C 501 184 D AZ R30											
CRA-FC-1C	LOWER LEVEL FAN COIL UNIT	67	130004	M	3 3		0 1			21	F	Y
2	C 501 273 D AZ R30	P295			AX-560							
CRA-FC-1C+	LOWER LEVEL FAN COIL UNIT				3 3							
1	C 501 273 D AZ R30											
CRA-FC-2A	UPPER LEVEL FAN COIL UNIT	67	130004	M	3 3		0 1			21		Y
2	C 545 0 D AZ R23	P295			AX-560							
CRA-FC-2A+	UPPER LEVEL FAN COIL UNIT				3 3							
1	C 545 0 D AZ R23											
CRA-FC-2B	UPPER LEVEL FAN COIL UNIT	67	130004	M	3 3		0 1			21		Y
2	C 541 217 D AZ R23	P295			AX-560							
CRA-FC-2B+	UPPER LEVEL FAN COIL UNIT				3 3							
1	C 541 217 D AZ R23											
CRA-FL-1A	CONST PERIOD ONLY FILTER CRA-FC-1A	67		M	3 3		0 1			21		Y
2	C 501 K2/4.8	P295										
CRA-FL-1B	CONST PERIOD ONLY FILTER CRA-FC-1B	67		M	3 3		0 1			21		Y
2	C 501 H5/6	P295										
CRA-FL-1C	CONST PERIOD ONLY FILTER CRA-FC-1C	67		M	3 3		0 1			21		Y
2	C 501 K8/7.7	P295										
CRA-FL-2A	CONST PERIOD ONLY FILTER CRA-FC-2A	67		M	3 3		0 1			21+		Y
2	C 541 K/6.1	P295										
CRA-FL-2B	CONST PERIOD ONLY FILTER CRA-FC-2B	67		M	3 3		0 1			21+		Y
2	C 541 L8/6.6	P295										
CRA-FN-1A1	PRI CONT FAN HC-7B ALL	67	145015	M	3 3		0 1			40	F	Y
2	C 506 62 D AZ R30	J127			36-26 1/2-1170							
CRA-FN-1A2	PRI CONT FAN HC-7B ALL	67	145015	M	3 3	1 1	0 1			64	F	Y
2	C 506 66 D AZ R30	J127			36-26 1/2-1770/1170							
CRA-FN-1B1	PRI CONT FAN HC-8B ALL	67	145015	M	3 3		0 1			40	F	Y
2	C 506 182 D AZ R30	J127			36-26 1/2-1170							
CRA-FN-1B2	PRI CONT FAN HC-8B ALL	67	145015	M	3 3	1 1	0 1			64	F	Y
2	C 506 186 D AZ R30	J127			36-26 1/2-1770/1170							
CRA-FN-1C1	PRI CONT FAN HC-8B ALL	67	145015	M	3 3		0 1			40	F	Y
2	C 506 271 D AZ R30	J127			36-26 1/2-1170							
CRA-FN-1C2	PRI CONT FAN HC-8B ALL	67	145015	M	3 3	1 1	0 1			64		Y
2	C 506 275 D AZ R30	J127			36-26 1/2-1770/1170							
CRA-FN-2A1	PRI CONT FAN HC-7B ALL	67	145019	M	3 3		0 1			52		N
2	C 551 358 D AZ R23	J127			38-261/2-1770							
CRA-FN-2A2	PRI CONT FAN HC-8B ALL	67	145020	M	3 3		0 1			77		Y

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TH	HL
2	C 551 2 D AZ R25	J127			23 1/4-17 1/2-3450							
CRA-FN-2B1	PRI CONT FAN MC-8B ALL	67	145019	M	3 3		0 1			52		[illegible]
2	C 547 215 D AZ R25	J127			38-261/2-1773							
CRA-FN-2B2	PRI CONT FAN MC 8B ALL	67	145020	M	3 3		0 1			92		Y
2	C 547 219 D AZ R25	J127			23 1/4-17 1/2-3450							
CRA-FN-3A	LOWER LEVEL RECIRC. FAN MC-7B	22A	145001	M	3 3		0 1				F	Y
2	C 534 50 D AZ R17	J127			500722-112							
CRA-FN-3A+					3 3							
1	C 534 50 D AZ R17											
CRA-FN-3B	LOWER LEVEL RECIRC. FAN MC-8B	22A	145001	M	3 3		0 1				F	Y
2	C 534 140 D AZ R17	J127			500722-112							
CRA-FN-3B+					3 3							
1	C 534 140 D AZ R17											
CRA-FN-3C	LOWER LEVEL RECIRC. FAN MC-8B	22A	145001	M	3 3		0 1				F	Y
2	C 534 60 D AZ R17	J127			500722-112							
CRA-FN-3C+					3 3							
1	C 534 60 D AZ R17											
CRA-FN-4A	RETURN AIR FAN MC-7B	22A	145002		3 3		0 1			71	F	Y
2	C 572 330 D AZ R17	J127			500722-113							
CRA-FN-4A+					3 3							
1	C 572 330 D AZ R17											
CRA-FN-4B	RETURN AIR FAN MC-8B	22A	145002		3 3		0 1			71	F	Y
2	C 572 206 D AZ R17	J127			500722-113							
CRA-FN-4B+					3 3							
1	C 572 206 D AZ R17											
CRA-FN-5A	UPPER LEVEL RECIRC. FAN MC-7B	22A	145001	M	3 3		0 1				F	Y
2	C 572 180 D AZ R17	J127			1388009-8							
CRA-FN-5A+	COMPOSITE OF CRA-FN-5A				3 3							
1	C 572 180 D AZ R17											
CRA-FN-5B	UPPER LEVEL RECIRC. FAN MC-8B	22A	145001	M	3 3		0 1				F	Y
2	C 572 20 D AZ R17	J127			1388009-8							
CRA-FN-5B+	COMPOSITE OF CRA-FN-5B				3 3							
1	C 572 20 D AZ R17											
CRA-FN-5C	UPPER LEVEL RECIRC. FAN MC-7B	22A	145001	M	3 3		0 1				F	Y
2	C 572 270 D AZ R17	J127			1388009-8							
CRA-FN-5C+	COMPOSITE OF CRA-FN-5C				3 3							
1	C 572 270 D AZ R17											
CRA-FN-5D	UPPER LEVEL RECIRC. FAN MC-8B	22A	145001	M	3 3		0 1				F	Y
2	C 572 90 D AZ R17	J127			1388009-8							
CRA-FN-5D+	COMPOSITE OF CRA-FN-5D				3 3							
1	C 572 90 D AZ R17											
CRD-AO-2A	AIR OPERATOR CRD-FCV-2A	02			2 1							
2	R 524 M.6/3.5	I208										
CRD-AO-2B	AIR OPERATOR CRD-FCV-2B	02			2 1							
2	R 524 M.6/3.5	I208										
CRD-DRVE-0219	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-0223	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							

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EQUIPMENT NO.	LV	DESCRIPTION	PLANT LOCATION	CONTRACT	MFG	QID	QS	USE	MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TH	HL
CRD-DRVE-0227	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02813	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-0231	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02813	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-0235	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02813	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-0239	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02813	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-0243	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02813	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-0615	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02813	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-0619	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02813	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-0623	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02813	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-0627	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02813	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-0631	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02813	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-0635	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02813	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-0639	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02813	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-0643	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02813	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-0647	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02813	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-1011	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02813	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-1015	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02813	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-1019	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02813	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-1023	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02813	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-1027	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02813	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-1031	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02813	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-1035	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02813	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-1039	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02813	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-1043	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02813	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-1047	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02813	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-1051		DRIVE ASSM. CNTRL. ROD DR.		02813		092001	A	1 3		1 1	0 2					Y

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TH	HL
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-1407	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-1411	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-1415	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-1419	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-1423	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-1427	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-1431	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-1435	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-1439	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-1443	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-1447	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-1451	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-1455	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-1803	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-1807	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-1811	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-1815	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-1819	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-1823	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-1827	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-1831	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-1835	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-1839	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-1843	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
CRD-DRVE-1847	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-1851	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-1855	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-1859	DRIVE ASSM. CNTR. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-2203	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-2207	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-2211	DRIVE ASSM. CNTR. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-2215	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-2219	DRIVE ASSM. CNTR. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-2223	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-2227	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-2231	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-2235	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-2239	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-2243	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-2247	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-2251	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-2255	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-2259	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-2603	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-2607	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-2611	DRIVE ASSM. CNTR. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-2615	DRIVE ASSM. CNTR. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-2619	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-2623	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-2627	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-2631	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-2635	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-2639	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-2643	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-2647	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-2651	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-2655	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-2659	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2		G080			7RDB144C							
CRD-DRVE-3003	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-3007	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-3011	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-3015	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-3019	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-3023	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-3027	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-3031	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-3035	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-3039	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-3043	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-3047	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-3051	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-3055	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-3059	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							

EQUIPMENT NO.	LV	DESCRIPTION	PLANT LOCATION	CONTRACT	MFG	QID	QS	USE	MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
CRD-DRVE-3403	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02B13	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-3407	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02B13	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-3411	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02B13	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-3415	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02B13	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-3419	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02B13	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-3423	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02B13	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-3427	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02B13	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-3431	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02B13	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-3435	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02B13	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-3439	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02B13	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-3443	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02B13	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-3447	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02B13	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-3451	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02B13	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-3455	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02B13	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-3459	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02B13	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-3803	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02B13	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-3807	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02B13	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-3811	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02B13	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-3815	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02B13	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-3819	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02B13	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-3823	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02B13	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-3827	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02B13	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-3831	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02B13	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-3835	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02B13	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-3839		DRIVE ASSM. CNTRL. ROD DR.		02B13		092001	A	1 3		1 1	0 2					Y

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-3843	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-3847	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-3851	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-3855	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-3859	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-4203	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-4207	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-4211	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-4215	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-4219	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-4223	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-4227	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-4231	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-4235	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-4239	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-4243	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-4247	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-4251	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-4255	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-4259	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-4607	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-4611	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-4615	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-4619	DRIVE ASSM. CNTRL. ROD DR.	02813	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							

EQUIPMENT NO.	LV	DESCRIPTION	PLANT LOCATION	CONTRACT	MFG	QIC	QS	USE	MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
CRD-DRVE-4623	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02813	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-4627	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02813	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-4631	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02813	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-4635	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02813	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-4639	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02813	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-4643	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02813	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-4647	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02813	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-4651	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02813	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-4655	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02813	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-5011	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02813	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-5015	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02813	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-5019	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02813	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-5023	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02813	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-5027	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02813	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-5031	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02813	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-5035	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02813	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-5039	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02813	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-5043	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02813	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-5047	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02813	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-5051	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02813	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-5415	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02813	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-5419	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02813	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-5423	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02813	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-5427	2	DRIVE ASSM. CNTRL. ROD DR.	C 501 UNDER VESSEL	02813	G080	092001	A	1 3	7RDB144C	1 1	0 2					Y
CRD-DRVE-5431		DRIVE ASSM. CNTRL. ROD DR.		02813		092001	A	1 3		1 1	0 2					Y

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-5435	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-5439	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-5443	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-5447	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-5819	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-5823	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-5827	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-5831	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-5835	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-5839	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-DRVE-5843	DRIVE ASSM. CNTRL. ROD DR.	02B13	092001	A	1 3	1 1	0 2					Y
2	C 501 UNDER VESSEL	G080			7RDB144C							
CRD-FCV-2A	1.5" GLOBE (AO) CRD FLOW CONTROL	02C12	133007		2 3							
2	R 523 H.6/3.5	H035			V-501L-1A							
CRD-FCV-2A+					2 3							
1	R 523 H.6/3.5											
CRD-FCV-2B	1.5" GLOBE (AO) CRD FLOW CONTROL	02C12	133007		2 3							
2	R 523 H.6/3.5	H035			V-501L-1A							
CRD-FCV-2B+					2 3							
1	R 523 H.6/3.5											
CRD-HCU-0219	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	G080			761E500G1							
CRD-HCU-0223	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	G080			761E500G1							
CRD-HCU-0227	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	G080			761E500G1							
CRD-HCU-0231	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	G080			761E500G1							
CRD-HCU-0235	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/8.4	G080			761E500G1							
CRD-HCU-0239	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/8.4	G080			761E500G1							
CRD-HCU-0243	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/8.4	G080			761E500G1							
CRD-HCU-0615	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	G080			761E500G1							
CRD-HCU-0619	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	G080			761E500G1							

EQUIPMENT NO.	LV	DESCRIPTION	PLANT LOCATION	CONTRACT	MFG	QID	QS	USE	TEST	ANL	F/O	C	FREQ	TM	HL	MFG MODEL NO.
CRD-HCU-0623	1	CRD HYDRAULIC CONTROL UNIT ASSY	R 522 L5/8.4	02C12	G080	167001	B	1 3	1 1	0 2			02		Y	761E500G1
CRD-HCU-0627	1	CRD HYDRAULIC CONTROL UNIT ASSY	R 522 L5/8.4	02C12	G080	167001	B	1 3	1 1	0 2			02		Y	761E500G1
CRD-HCU-0631	1	CRD HYDRAULIC CONTROL UNIT ASSY	R 522 L5/8.4	02C12	G080	167001	B	1 3	1 1	0 2			02		Y	761E500G1
CRD-HCU-0635	1	CRD HYDRAULIC CONTROL UNIT ASSY	R 522 K2/8.4	02C12	G080	167001	B	1 3	1 1	0 2			02		Y	761E500G1
CRD-HCU-0639	1	CRD HYDRAULIC CONTROL UNIT ASSY	R 522 K2/8.4	02C12	G080	167001	B	1 3	1 1	0 2			02		Y	761E500G1
CRD-HCU-0643	1	CRD HYDRAULIC CONTROL UNIT ASSY	R 522 K2/8.4	02C12	G080	167001	B	1 3	1 1	0 2			02		Y	761E500G1
CRD-HCU-0647	1	CRD HYDRAULIC CONTROL UNIT ASSY	R 522 K2/8.4	02C12	G080	167001	B	1 3	1 1	0 2			02		Y	761E500G1
CRD-HCU-1011	1	CRD HYDRAULIC CONTROL UNIT ASSY	R 522 L5/8.4	02C12	G080	167001	B	1 3	1 1	0 2			02		Y	761E500G1
CRD-HCU-1015	1	CRD HYDRAULIC CONTROL UNIT ASSY	R 522 L5/8.4	02C12	G080	167001	B	1 3	1 1	0 2			02		Y	761E500G1
CRD-HCU-1019	1	CRD HYDRAULIC CONTROL UNIT ASSY	R 522 L5/8.4	02C12	G080	167001	B	1 3	1 1	0 2			02		Y	761E500G1
CRD-HCU-1023	1	CRD HYDRAULIC CONTROL UNIT ASSY	R 522 L5/8.4	02C12	G080	167001	B	1 3	1 1	0 2			02		Y	761E500G1
CRD-HCU-1027	1	CRD HYDRAULIC CONTROL UNIT ASSY	R 522 L5/8.4	02C12	G080	167001	B	1 3	1 1	0 2			02		Y	761E500G1
CRD-HCU-1031	1	CRD HYDRAULIC CONTROL UNIT ASSY	R 522 L5/8.4	02C12	G080	167001	B	1 3	1 1	0 2			02		Y	761E500G1
CRD-HCU-1035	1	CRD HYDRAULIC CONTROL UNIT ASSY	R 522 K2/8.4	02C12	G080	167001	B	1 3	1 1	0 2			02		Y	761E500G1
CRD-HCU-1039	1	CRD HYDRAULIC CONTROL UNIT ASSY	R 522 K2/8.4	02C12	G080	167001	B	1 3	1 1	0 2			02		Y	761E500G1
CRD-HCU-1043	1	CRD HYDRAULIC CONTROL UNIT ASSY	R 522 K2/8.4	02C12	G080	167001	B	1 3	1 1	0 2			02		Y	761E500G1
CRD-HCU-1047	1	CRD HYDRAULIC CONTROL UNIT ASSY	R 522 K2/8.4	02C12	G080	167001	B	1 3	1 1	0 2			02		Y	761E500G1
CRD-HCU-1051	1	CRD HYDRAULIC CONTROL UNIT ASSY	R 522 K2/8.4	02C12	G080	167001	B	1 3	1 1	0 2			02		Y	761E500G1
CRD-HCU-1407	1	CRD HYDRAULIC CONTROL UNIT ASSY	R 522 L5/8.4	02C12	G080	167001	B	1 3	1 1	0 2			02		Y	761E500G1
CRD-HCU-1411	1	CRD HYDRAULIC CONTROL UNIT ASSY	R 522 L5/8.4	02C12	G080	167001	B	1 3	1 1	0 2			02		Y	761E500G1
CRD-HCU-1415	1	CRD HYDRAULIC CONTROL UNIT ASSY	R 522 L5/8.4	02C12	G080	167001	B	1 3	1 1	0 2			02		Y	761E500G1
CRD-HCU-1419	1	CRD HYDRAULIC CONTROL UNIT ASSY	R 522 L5/8.4	02C12	G080	167001	B	1 3	1 1	0 2			02		Y	761E500G1
CRD-HCU-1423	1	CRD HYDRAULIC CONTROL UNIT ASSY	R 522 L5/8.4	02C12	G080	167001	B	1 3	1 1	0 2			02		Y	761E500G1
CRD-HCU-1427	1	CRD HYDRAULIC CONTROL UNIT ASSY	R 522 L5/8.4	02C12	G080	167001	B	1 3	1 1	0 2			02		Y	761E500G1
CRD-HCU-1431		CRD HYDRAULIC CONTROL UNIT ASSY		02C12		167001	B	1 3	1 1	0 2			02		Y	

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TH	HL
1	R 522 L5/8.4	G081			761E500G1							
CRD-HCU-1435	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/8.4	G080			761E500G1							
CRD-HCU-1439	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/8.4	G090			761E500G1							
CRD-HCU-1443	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/8.4	G080			761E500G1							
CRD-HCU-1447	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/8.4	G080			761E500G1							
CRD-HCU-1451	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/8.4	G080			761E500G1							
CRD-HCU-1455	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/8.4	G080			761E500G1							
CRD-HCU-1803	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	G080			761E500G1							
CRD-HCU-1807	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	G080			761E500G1							
CRD-HCU-1811	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	G080			761E500G1							
CRD-HCU-1815	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	G080			761E500G1							
CRD-HCU-1819	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	G080			761E500G1							
CRD-HCU-1823	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	G080			761E500G1							
CRD-HCU-1827	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	G080			761E500G1							
CRD-HCU-1831	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	G080			761E500G1							
CRD-HCU-1835	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/6.4	G080			761E500G1							
CRD-HCU-1839	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/8.4	G080			761E500G1							
CRD-HCU-1843	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/8.4	G080			761E500G1							
CRD-HCU-1847	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/8.4	G081			761E500G1							
CRD-HCU-1851	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/8.4	G080			761E500G1							
CRD-HCU-1855	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/8.4	G080			761E500G1							
CRD-HCU-1859	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/8.4	G080			761E500G1							
CRD-HCU-2203	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	G080			761E500G1							
CRD-HCU-2207	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	G080			761E500G1							
CRD-HCU-2211	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	G080			761E500G1							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
CRD-HCU-2215	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	G080			761E500G1							
CRD-HCU-2219	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	G080			761E500G1							
CRD-HCU-2223	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	G080			761E500G1							
CRD-HCU-2227	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	G080			761E500G1							
CRD-HCU-2231	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	G080			761E500G1							
CRD-HCU-2235	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/8.4	G080			761E500G1							
CRD-HCU-2239	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/8.4	G080			761E500G1							
CRD-HCU-2243	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/8.4	G080			761E500G1							
CRD-HCU-2247	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/8.4	G080			761E500G1							
CRD-HCU-2251	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/8.4	G080			761E500G1							
CRD-HCU-2255	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/8.4	G080			761E500G1							
CRD-HCU-2259	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/8.4	G080			761E500G1							
CRD-HCU-2603	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	G080			761E500G1							
CRD-HCU-2607	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	G080			761E500G1							
CRD-HCU-2611	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	G080			761E500G1							
CRD-HCU-2615	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	G080			761E500G1							
CRD-HCU-2619	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	G080			761E500G1							
CRD-HCU-2623	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	G080			761E500G1							
CRD-HCU-2627	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	G080			761E500G1							
CRD-HCU-2631	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	G080			761E500G1							
CRD-HCU-2635	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/8.4	G080			761E500G1							
CRD-HCU-2639	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/8.4	G080			761E500G1							
CRD-HCU-2643	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/8.4	G080			761E500G1							
CRD-HCU-2647	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/8.4	G080			761E500G1							
CRD-HCU-2651	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TH	HL
1	R 522 K2/8.4	G080			761E500G1							
CRD-HCU-2655	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/8.4	G080			761E500G1							
CRD-HCU-2659	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/8.4	G080			761E500G1							
CRD-HCU-3003	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	G080			761E500G1							
CRD-HCU-3007	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	G080			761E500G1							
CRD-HCU-3011	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	G080			761E500G1							
CRD-HCU-3015	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	G080			761E500G1							
CRD-HCU-3019	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	G080			761E500G1							
CRD-HCU-3023	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	G080			761E500G1							
CRD-HCU-3027	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/8.4	G080			761E500G1							
CRD-HCU-3031	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/3.7	G080			761E500G1							
CRD-HCU-3035	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/3.7	G080			761E500G1							
CRD-HCU-3039	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/3.7	G080			761E500G1							
CRD-HCU-3043	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/3.7	G080			761E500G1							
CRD-HCU-3047	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/3.7	G080			761E500G1							
CRD-HCU-3051	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/3.7	G080			761E500G1							
CRD-HCU-3055	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/3.7	G080			761E500G1							
CRD-HCU-3059	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/3.7	G080			761E500G1							
CRD-HCU-3403	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/3.7	G080			761E500G1							
CRD-HCU-3407	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/3.7	G080			761E500G1							
CRD-HCU-3411	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/3.7	G080			761E500G1							
CRD-HCU-3415	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/3.7	G080			761E500G1							
CRD-HCU-3419	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/3.7	G080			761E500G1							
CRD-HCU-3423	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/3.7	G080			761E500G1							
CRD-HCU-3427	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/3.7	G080			761E500G1							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE	TEST	ANL	F/O	C	FREQ	TM	HL	MFG MODEL NO.
CRD-HCU-3431 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 K2/3.7	02C12 / G080	167001	B	1 3	1 1	0 2			02		Y	761E500G1
CRD-HCU-3435 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 K2/3.7	02C12 / G080	167001	B	1 3	1 1	0 2			02		Y	761E500G1
CRD-HCU-3439 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 K2/3.7	02C12 / G080	167001	B	1 3	1 1	0 2			02		Y	761E500G1
CRD-HCU-3443 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 K2/3.7	02C12 / G080	167001	B	1 3	1 1	0 2			02		Y	761E500G1
CRD-HCU-3447 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 K2/3.7	02C12 / G080	167001	B	1 3	1 1	0 2			02		Y	761E500G1
CRD-HCU-3451 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 K2/3.7	02C12 / G080	167001	B	1 3	1 1	0 2			02		Y	761E500G1
CRD-HCU-3455 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 K2/3.7	02C12 / G080	167001	B	1 3	1 1	0 2			02		Y	761E500G1
CRD-HCU-3459 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 K2/3.7	02C12 / G080	167001	B	1 3	1 1	0 2			02		Y	761E500G1
CRD-HCU-3803 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 L5/3.7	02C12 / G080	167001	B	1 3	1 1	0 2			02		Y	761E500G1
CRD-HCU-3807 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 L5/3.7	02C12 / G080	167001	B	1 3	1 1	0 2			02		Y	761E500G1
CRD-HCU-3811 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 L5/3.7	02C12 / G080	167001	B	1 3	1 1	0 2			02		Y	761E500G1
CRD-HCU-3815 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 L5/3.7	02C12 / G080	167001	B	1 3	1 1	0 2			02		Y	761E500G1
CRD-HCU-3819 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 L5/3.7	02C12 / G080	167001	B	1 3	1 1	0 2			02		Y	761E500G1
CRD-HCU-3823 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 L5/3.7	02C12 / G080	167001	B	1 3	1 1	0 2			02		Y	761E500G1
CRD-HCU-3827 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 L5/3.7	02C12 / G080	167001	B	1 3	1 1	0 2			02		Y	761E500G1
CRD-HCU-3831 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 K2/3.7	02C12 / G080	167001	B	1 3	1 1	0 2			02		Y	761E500G1
CRD-HCU-3835 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 K2/3.7	02C12 / G080	167001	B	1 3	1 1	0 2			02		Y	761E500G1
CRD-HCU-3839 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 K2/3.7	02C12 / G080	167001	B	1 3	1 1	0 2			02		Y	761E500G1
CRD-HCU-3843 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 K2/3.7	02C12 / G080	167001	B	1 3	1 1	0 2			02		Y	761E500G1
CRD-HCU-3847 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 K2/3.7	02C12 / G080	167001	B	1 3	1 1	0 2			02		Y	761E500G1
CRD-HCU-3851 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 K2/3.7	02C12 / G080	167001	B	1 3	1 1	0 2			02		Y	761E500G1
CRD-HCU-3855 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 K2/3.7	02C12 / G080	167001	B	1 3	1 1	0 2			02		Y	761E500G1
CRD-HCU-3859 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 K2/3.7	02C12 / G080	167001	B	1 3	1 1	0 2			02		Y	761E500G1
CRD-HCU-4203 / 1	CRD HYDRAULIC CONTROL UNIT ASSY / R 522 L5/3.7	02C12 / G080	167001	B	1 3	1 1	0 2			02		Y	761E500G1
CRD-HCU-4207	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y	

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EQUIPMENT NO.	LV	DESCRIPTION	PLANT LOCATION	CONTRACT	MFG	QID	QS	USE	TEST	MFG MODEL NO.	ANL	F/O	C	FREQ	TM	HL
	1		R 522 L5/3.7		G080					761E500G1						
CRD-HCU-4211	1	CRD HYDRAULIC CONTROL UNIT ASSY	R 522 L5/3.7	02C12	G080	167001	B	1 3	1 1	761E500G1	0 2			02		Y
CRD-HCU-4215	1	CRD HYDRAULIC CONTROL UNIT ASSY	R 522 L5/3.7	02C12	G080	167001	B	1 3	1 1	761E500G1	0 2			02		Y
CRD-HCU-4219	1	CRD HYDRAULIC CONTROL UNIT ASSY	R 522 L5/3.7	02C12	G080	167001	B	1 3	1 1	761E500G1	0 2			02		Y
CRD-HCU-4223	1	CRD HYDRAULIC CONTROL UNIT ASSY	R 522 L5/3.7	02C12	G080	167001	B	1 3	1 1	761E500G1	0 2			02		Y
CRD-HCU-4227	1	CRD HYDRAULIC CONTROL UNIT ASSY	R 522 L5/3.7	02C12	G080	167001	B	1 3	1 1	761E500G1	0 2			02		Y
CRD-HCU-4231	1	CRD HYDRAULIC CONTROL UNIT ASSY	R 522 K2/3.7	02C12	G080	167001	B	1 3	1 1	761E500G1	0 2			02		Y
CRD-HCU-4235	1	CRD HYDRAULIC CONTROL UNIT ASSY	R 522 K2/3.7	02C12	G080	167001	B	1 3	1 1	761E500G1	0 2			02		Y
CRD-HCU-4239	1	CRD HYDRAULIC CONTROL UNIT ASSY	R 522 K2/3.7	02C12	G080	167001	B	1 3	1 1	761E500G1	0 2			02		Y
CRD-HCU-4243	1	CRD HYDRAULIC CONTROL UNIT ASSY	R 522 K2/3.7	02C12	G080	167001	B	1 3	1 1	761E500G1	0 2			02		Y
CRD-HCU-4247	1	CRD HYDRAULIC CONTROL UNIT ASSY	R 522 K2/3.7	02C12	G080	167001	B	1 3	1 1	761E500G1	0 2			02		Y
CRD-HCU-4251	1	CRD HYDRAULIC CONTROL UNIT ASSY	R 522 K2/3.7	02C12	G080	167001	B	1 3	1 1	761E500G1	0 2			02		Y
CRD-HCU-4255	1	CRD HYDRAULIC CONTROL UNIT ASSY	R 522 K2/3.7	02C12	G080	167001	B	1 3	1 1	761E500G1	0 2			02		Y
CRD-HCU-4259	1	CRD HYDRAULIC CONTROL UNIT ASSY	R 522 K2/3.7	02C12	#	167001	B	1 3	1 1	761E500G1	0 2			02		Y
CRD-HCU-4607	1	CRD HYDRAULIC CONTROL UNIT ASSY	R 522 L5/3.7	02C12	G080	167001	B	1 3	1 1	761E500G1	0 2			02		Y
CRD-HCU-4611	1	CRD HYDRAULIC CONTROL UNIT ASSY	R 522 L5/3.7	02C12	G080	167001	B	1 3	1 1	761E500G1	0 2			02		Y
CRD-HCU-4615	1	CRD HYDRAULIC CONTROL UNIT ASSY	R 522 L5/3.7	02C12	G080	167001	B	1 3	1 1	761E500G1	0 2			02		Y
CRD-HCU-4619	1	CRD HYDRAULIC CONTROL UNIT ASSY	R 522 L5/3.7	02C12	G080	167001	B	1 3	1 1	761E500G1	0 2			02		Y
CRD-HCU-4623	1	CRD HYDRAULIC CONTROL UNIT ASSY	R 522 L5/3.7	02C12	G080	167001	B	1 3	1 1	761E500G1	0 2			02		Y
CRD-HCU-4627	1	CRD HYDRAULIC CONTROL UNIT ASSY	R 522 L5/3.7	02C12	G080	167001	B	1 3	1 1	761E500G1	0 2			02		Y
CRD-HCU-4631	1	CRD HYDRAULIC CONTROL UNIT ASSY	R 522 K2/3.7	02C12	G080	167001	B	1 3	1 1	761E500G1	0 2			02		Y
CRD-HCU-4635	1	CRD HYDRAULIC CONTROL UNIT ASSY	R 522 K2/3.7	02C12	G080	167001	B	1 3	1 1	761E500G1	0 2			02		Y
CRD-HCU-4639	1	CRD HYDRAULIC CONTROL UNIT ASSY	R 522 K2/3.7	02C12	G080	167001	B	1 3	1 1	761E500G1	0 2			02		Y
CRD-HCU-4643	1	CRD HYDRAULIC CONTROL UNIT ASSY	R 522 K2/3.7	02C12	G080	167001	B	1 3	1 1	761E500G1	0 2			02		Y
CRD-HCU-4647	1	CRD HYDRAULIC CONTROL UNIT ASSY	R 522 K2/3.7	02C12	G080	167001	B	1 3	1 1	761E500G1	0 2			02		Y

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE	TEST	ANL / MFG MODEL NO.	F/O	C	FREQ	TM	HL
CRD-HCU-4651	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/3.7	G080			761E500G1							
CRD-HCU-4655	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/3.7	G080			761E500G1							
CRD-HCU-5011	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/3.7	G080			761E500G1							
CRD-HCU-5015	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/3.7	G080			761E500G1							
CRD-HCU-5019	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/3.7	G080			761E500G1							
CRD-HCU-5023	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/3.7	G080			761E500G1							
CRD-HCU-5027	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/3.7	G080			761E500G1							
CRD-HCU-5031	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/3.7	G080			761E500G1							
CRD-HCU-5035	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/3.7	G080			761E500G1							
CRD-HCU-5039	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/3.7	G080			761E500G1							
CRD-HCU-5043	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/3.7	G080			761E500G1							
CRD-HCU-5047	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/3.7	G080			761E500G1							
CRD-HCU-5051	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/3.7	G080			761E500G1							
CRD-HCU-5415	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/3.7	G080			761E500G1							
CRD-HCU-5419	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/3.7	G080			761E500G1							
CRD-HCU-5423	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/3.7	G080			761E500G1							
CRD-HCU-5427	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/3.7	G080			761E500G1							
CRD-HCU-5431	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/3.7	G080			761E500G1							
CRD-HCU-5435	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/3.7	G080			761E500G1							
CRD-HCU-5439	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/3.7	G080			761E500G1							
CRD-HCU-5443	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/3.7	G080			761E500G1							
CRD-HCU-5447	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/3.7	G080			761E500G1							
CRD-HCU-5819	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/3.7	G080			761E500G1							
CRD-HCU-5823	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 L5/3.7	G080			761E500G1							
CRD-HCU-5827	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	GID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
1	R 522 L5/3.7	G080			761E500G1							
CRD-HCU-5831	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/3.7	G080			761E500G1							
CRD-HCU-5835	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/3.7	G083			761E500G1							
CRD-HCU-5839	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/3.7	G083			761E500G1							
CRD-HCU-5843	CRD HYDRAULIC CONTROL UNIT ASSY	02C12	167001	B	1 3	1 1	0 2			02		Y
1	R 522 K2/3.7	G080			761E500G1							
CRD-P-1A	CONTROL ROD DRIVE PUMP SH-7	02C12	233005		1 3							
2	R 422 N.6/4.1	U055			2X3HNB							
CRD-P-1A+	COMPOSITE FOR CRD-P-1A				1 3							
1	R 422 N.6/4.1											
CRD-P-1B	CONTROL ROD DRIVE PUMP SH-8	02C12	233005		1 3							
2	N.6/4.8	U055			2X3HNB							
CRD-P-1B+	COMPOSITE FOR CRD-P-1B				1 3							
1	R 422 N.6/4.8											
CRD-PI-131/0219	0-2500 ACCUMULATOR PRESSURE	02C12	167001	A B	3 3	1 1	0 1				F	N
2	R 522 L5/8.4											
CRD-PI-131/0223	0-2500 ACCUMULATOR PRESSURE	02C12	167001	A B	3 3	1 1	0 1				F	N
2	R 522 L5/8.4											
CRD-PI-131/0227	0-2500 ACCUMULATOR PRESSURE	02C12	167001	A B	3 3	1 1	0 1				F	N
2	R 522 L5/8.4											
CRD-PI-131/0231	0-2500 ACCUMULATOR PRESSURE	02C12	167001	A B	3 3	1 1	0 1				F	N
2	R 522 L5/8.4											
CRD-PI-131/0235	0-2500 ACCUMULATOR PRESSURE	02C12	167001	A B	3 3	1 1	0 1				F	N
2	R 522 K2/8.4											
CRD-PI-131/0239	0-2500 ACCUMULATOR PRESSURE	02C12	167001	A B	3 3	1 1	0 1				F	N
2	R 522 K2/8.4											
CRD-PI-131/0243	0-2500 ACCUMULATOR PRESSURE	02C12	167001	A B	3 3	1 1	0 1				F	N
2	R 522 K2/8.4											
CRD-PI-131/0615	0-2500 ACCUMULATOR PRESSURE	02C12	167001	A B	3 3	1 1	0 1				F	N
2	R 522 L5/8.4											
CRD-PI-131/0619	0-2500 ACCUMULATOR PRESSURE	02C12	167001	A B	3 3	1 1	0 1				F	N
2	R 522 L5/8.4											
CRD-PI-131/0623	0-2500 ACCUMULATOR PRESSURE	02C12	167001	A B	3 3	1 1	0 1				F	N
2	R 522 L5/8.4											
CRD-PI-131/0627	0-2500 ACCUMULATOR PRESSURE	02C12	167001	A B	3 3	1 1	0 1				F	N
2	R 522 L5/8.4											
CRD-PI-131/0631	0-2500 ACCUMULATOR PRESSURE	02C12	167001	A B	3 3	1 1	0 1				F	N
2	R 522 L5/8.4											
CRD-PI-131/0635	0-2500 ACCUMULATOR PRESSURE	02C12	167001	A B	3 3	1 1	0 1				F	N
2	R 522 K2/8.4											
CRD-PI-131/0639	0-2500 ACCUMULATOR PRESSURE	02C12	167001	A B	3 3	1 1	0 1				F	N
2	R 522 K2/8.4											
CRD-PI-131/0643	0-2500 ACCUMULATOR PRESSURE	02C12	167001	A B	3 3	1 1	0 1				F	N
2	R 522 K2/8.4											
CRD-PI-131/0647	0-2500 ACCUMULATOR PRESSURE	02C12	167001	A B	1 3	1 1	0 1				F	N
2	R 522 K2/8.4											

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE	TEST (MFG MODEL NO.)	ANL	F/O	C	FREQ	TM	HL
CRD-PI-131/1011 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/1015 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/1019 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/1023 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/1027 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/1031 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/1035 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/1039 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/1043 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/1047 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/1051 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/1407 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/1411 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/1415 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/1419 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/1423 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/1427 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/1431 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/1435 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/1439 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/1443 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/1447 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/1451 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/1455 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/1803	0-2500 ACCUMULATOR PRESSURE	02C12	167001	A B	3 3	1 1	0 1				F	N

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EQUIPMENT NO.	LV	DESCRIPTION	PLANT LOCATION	CONTRACT / MFG	QID	QS	USE	TEST (MFG MODEL NO.)	ANL	F/O	C	FREQ	TH	HL
	2		R 522 L5/8.4											
CRD-PI-131/1807	2	0-2500 ACCUMULATOR PRESSURE	R 522 L5/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/1811	2	0-2500 ACCUMULATOR PRESSURE	R 522 L5/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/1815	2	0-2500 ACCUMULATOR PRESSURE	R 522 L5/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/1819	2	0-2500 ACCUMULATOR PRESSURE	R 522 L5/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/1823	2	0-2500 ACCUMULATOR PRESSURE	R 522 L5/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/1827	2	0-2500 ACCUMULATOR PRESSURE	R 522 L5/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/1831	2	0-2500 ACCUMULATOR PRESSURE	R 522 L5/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/1835	2	0-2500 ACCUMULATOR PRESSURE	R 522 K2/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/1839	2	0-2500 ACCUMULATOR PRESSURE	R 522 K2/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/1843	2	0-2500 ACCUMULATOR PRESSURE	R 522 K2/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/1847	2	0-2500 ACCUMULATOR PRESSURE	R 522 K2/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/1851	2	0-2500 ACCUMULATOR PRESSURE	R 522 K2/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/1855	2	0-2500 ACCUMULATOR PRESSURE	R 522 K2/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/1859	2	0-2500 ACCUMULATOR PRESSURE	R 522 K2/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/2203	2	0-2500 ACCUMULATOR PRESSURE	R 522 L5/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/2207	2	0-2500 ACCUMULATOR PRESSURE	R 522 L5/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/2211	2	0-2500 ACCUMULATOR PRESSURE	R 522 L5/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/2215	2	0-2500 ACCUMULATOR PRESSURE	R 522 L5/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/2219	2	0-2500 ACCUMULATOR PRESSURE	R 522 L5/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/2223	2	0-2500 ACCUMULATOR PRESSURE	R 522 L5/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/2227	2	0-2500 ACCUMULATOR PRESSURE	R 522 L5/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/2231	2	0-2500 ACCUMULATOR PRESSURE	R 522 L5/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/2235	2	0-2500 ACCUMULATOR PRESSURE	R 522 K2/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/2239	2	0-2500 ACCUMULATOR PRESSURE	R 522 K2/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE	TEST / MFG MODEL NO.	ANL	F/O	C	FREQ	TH	HL
CRD-PI-131/2243 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/2247 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/2251 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/2255 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/2259 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/2603 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/2607 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/2611 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/2615 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/2619 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/2623 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/2627 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/2631 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/2635 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/2639 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/2643 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/2647 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/2651 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/2655 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/2659 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3003 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3007 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3011 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3015 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3019	0-2500 ACCUMULATOR PRESSURE	02C12	167001	A B	3 3	1 1	0 1				F	N

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE	TEST	AHL	F/O	C	FREQ	TM	HL
2	R 522 L5/8.4											
CRD-PI-131/3023 / 2	0-2500 ACCUMULATOR PRESSURE / R 522 L5/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3027 / 2	0-2500 ACCUMULATOR PRESSURE / R 522 L5/8.4	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3031 / 2	0-2500 ACCUMULATOR PRESSURE / R 522 K2/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3035 / 2	0-2500 ACCUMULATOR PRESSURE / R 522 K2/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3039 / 2	0-2500 ACCUMULATOR PRESSURE / R 522 K2/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3043 / 2	0-2500 ACCUMULATOR PRESSURE / R 522 K2/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3047 / 2	0-2500 ACCUMULATOR PRESSURE / R 522 K2/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3051 / 2	0-2500 ACCUMULATOR PRESSURE / R 522 K2/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3055 / 2	0-2500 ACCUMULATOR PRESSURE / R 522 K2/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3059 / 2	0-2500 ACCUMULATOR PRESSURE / R 522 K2/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3403 / 2	0-2500 ACCUMULATOR PRESSURE / R 522 L5/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3407 / 2	0-2500 ACCUMULATOR PRESSURE / R 522 L5/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3411 / 2	0-2500 ACCUMULATOR PRESSURE / R 522 L5/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3415 / 2	0-2500 ACCUMULATOR PRESSURE / R 522 L5/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3419 / 2	0-2500 ACCUMULATOR PRESSURE / R 522 L5/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3423 / 2	0-2500 ACCUMULATOR PRESSURE / R 522 L5/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3427 / 2	0-2500 ACCUMULATOR PRESSURE / R 522 L5/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3431 / 2	0-2500 ACCUMULATOR PRESSURE / R 522 K2/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3435 / 2	0-2500 ACCUMULATOR PRESSURE / R 522 K2/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3439 / 2	0-2500 ACCUMULATOR PRESSURE / R 522 K2/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3443 / 2	0-2500 ACCUMULATOR PRESSURE / R 522 K2/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3447 / 2	0-2500 ACCUMULATOR PRESSURE / R 522 K2/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3451 / 2	0-2500 ACCUMULATOR PRESSURE / R 522 K2/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3455 / 2	0-2500 ACCUMULATOR PRESSURE / R 522 K2/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE	TEST / MFG MODEL NO.	ANL	F/O	C	FREQ	TM	HL
CRD-PI-131/3459 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3803 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3807 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3811 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3815 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3819 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3823 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3827 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3831 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3835 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3839 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3843 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3847 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3851 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3855 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/3859 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/4203 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/4207 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/4211 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/4215 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/4219 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/4223 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/4227 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/4231 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/4235	0-2500 ACCUMULATOR PRESSURE	02C12	167001	A B	3 3	1 1	0 1				F	N

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EQUIPMENT NO. LV	DESCRIPTION PLANT LOCATION	CONTRACT MFG	QID	QS	USE	TEST MFG MODEL NO.	ANL	F/O	C	FREQ	TM	HL
2	R 522 K2/3.7											
CRD-PI-131/4239 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/4243 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/4247 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/4251 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/4255 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/4259 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/4607 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/4611 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/4615 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/4619 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/4623 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/4627 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/4631 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/4635 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/4639 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/4643 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/4647 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/4651 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/4655 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/5011 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/5015 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/5019 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/5023 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/5027 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N

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EQUIPMENT NO. LV	DESCRIPTION PLANT LOCATION	CONTRACT MFG	QID	QS	USE MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
CRD-PI-131/5031 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/5035 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/5039 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/5043 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/5047 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/5051 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/5415 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/5419 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/5423 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/5427 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/5431 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/5435 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/5439 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/5443 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/5447 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/5819 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/5823 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/5827 2	0-2500 ACCUMULATOR PRESSURE R 522 L5/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/5831 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/5835 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/5839 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-PI-131/5843 2	0-2500 ACCUMULATOR PRESSURE R 522 K2/3.7	02C12	167001	A B	3 3	1 1	0 1				F	N
CRD-V-117 2	4" GATE CRD-FU-1? BYPASS R 424 V5/3.6	43 W030	361980		2 0 A-7512-M-166							
CRD-V-117/0219 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 L5/8.4	02C12 C257		B	1 3 HVA904052-J	1 1	0 2			02	Y	
CRD-V-117/0223	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02	Y	

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE	TEST / MFG MODEL NO.	ANL	F/O	C	FREQ	TH	HL
2	R 522 L5/8.4	C257			HVA904052-J							
CRD-V-117/0227	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	C257			HVA904052-J							
CRD-V-117/0231	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	C257			HVA904052-J							
CRD-V-117/0235	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	C257			HVA904052-J							
CRD-V-117/0239	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	C257			HVA904052-J							
CRD-V-117/0243	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	C257			HVA904052-J							
CRD-V-117/0615	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	C257			HVA904052-J							
CRD-V-117/0619	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	C257			HVA904052-J							
CRD-V-117/0623	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	C257			HVA904052-J							
CRD-V-117/0627	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	C257			HVA904052-J							
CRD-V-117/0631	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	C257			HVA904052-J							
CRD-V-117/0635	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	C257			HVA904052-J							
CRD-V-117/0639	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	C257			HVA904052-J							
CRD-V-117/0643	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	C257			HVA904052-J							
CRD-V-117/0647	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	C257			HVA904052-J							
CRD-V-117/1011	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	C257			HVA904052-J							
CRD-V-117/1015	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	C257			HVA904052-J							
CRD-V-117/1019	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	C257			HVA904052-J							
CRD-V-117/1023	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	C257			HVA904052-J							
CRD-V-117/1027	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	C257			HVA904052-J							
CRD-V-117/1031	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	C257			HVA904052-J							
CRD-V-117/1035	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	C257			HVA904052-J							
CRD-V-117/1039	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/6.4	C257			HVA904052-J							
CRD-V-117/1043	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	C257			HVA904052-J							
CRD-V-117/1047	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	C257			HVA904052-J							

EQUIPMENT NO.	LV	DESCRIPTION	PLANT LOCATION	CONTRACT	MFG	QID	QS	USE	MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	FM	HL
CRD-V-117/1651	2	SCRAM SOLENOID PILOT CRD-V-126&127	R 522 K2/8.4	02C12	C257		B	1 3	HVA904052-J	1 1	0 2			02		Y
CRD-V-117/1407	2	SCRAM SOLENOID PILOT CRD-V-126&127	R 522 L5/8.4	02C12	C257		B	1 3	HVA904052-J	1 1	0 2			02		Y
CRD-V-117/1411	2	SCRAM SOLENOID PILOT CRD-V-126&127	R 522 L5/8.4	02C12	C257		B	1 3	HVA904052-J	1 1	0 2			02		Y
CRD-V-117/1415	2	SCRAM SOLENOID PILOT CRD-V-126&127	R 522 L5/8.4	02C12	C257		B	1 3	HVA904052-J	1 1	0 2			02		Y
CRD-V-117/1419	2	SCRAM SOLENOID PILOT CRD-V-126&127	R 522 L5/8.4	02C12	C257		B	1 3	HVA904052-J	1 1	0 2			02		Y
CRD-V-117/1423	2	SCRAM SOLENOID PILOT CRD-V-126&127	R 522 L5/8.4	02C12	C257		B	1 3	HVA904052-J	1 1	0 2			02		Y
CRD-V-117/1427	2	SCRAM SOLENOID PILOT CRD-V-126&127	R 522 L5/8.4	02C12	C257		A	1 3	HVA904052-J							
CRD-V-117/1431	2	SCRAM SOLENOID PILOT CRD-V-126&127	R 522 L5/8.4	02C12	C257		A	1 3	HVA904052-J							
CRD-V-117/1435	2	SCRAM SOLENOID PILOT CRD-V-126&127	R 522 K2/8.4	02C12	C257		A	1 3	HVA904052-J							
CRD-V-117/1439	2	SCRAM SOLENOID PILOT CRD-V-126&127	R 522 K2/8.4	02C12	C257		A	1 3	HVA904052-J							
CRD-V-117/1443	2	SCRAM SOLENOID PILOT CRD-V-126&127	R 522 K2/8.4	02C12	C257		A	1 3	HVA904052-J							
CRD-V-117/1447	2	SCRAM SOLENOID PILOT CRD-V-126&127	R 522 K2/8.4	02C12	C257		A	1 3	HVA904052-J							
CRD-V-117/1451	2	SCRAM SOLENOID PILOT CRD-V-126&127	R 522 K2/8.4	02C12	C257		A	1 3	HVA904052-J							
CRD-V-117/1455	2	SCRAM SOLENOID PILOT CRD-V-126&127	R 522 K2/8.4	02C12	C257		A	1 3	HVA904052-J							
CRD-V-117/1803	2	SCRAM SOLENOID PILOT CRD-V-126&127	R 522 L5/8.4	02C12	C257		A	1 3	HVA904052-J							
CRD-V-117/1807	2	SCRAM SOLENOID PILOT CRD-V-126&127	R 522 L5/8.4	02C12	C257		A	1 3	HVA904052-J							
CRD-V-117/1811	2	SCRAM SOLENOID PILOT CRD-V-126&127	R 522 L5/8.4	02C12	C257		A	1 3	HVA904052-J							
CRD-V-117/1815	2	SCRAM SOLENOID PILOT CRD-V-126&127	R 522 L5/8.4	02C12	C257		A	1 3	HVA904052-J							
CRD-V-117/1819	2	SCRAM SOLENOID PILOT CRD-V-126&127	R 522 L5/8.4	02C12	C257		A	1 3	HVA904052-J							
CRD-V-117/1823	2	SCRAM SOLENOID PILOT CRD-V-126&127	R 522 L5/8.4	02C12	C257		A	1 3	HVA904052-J							
CRD-V-117/1827	2	SCRAM SOLENOID PILOT CRD-V-126&127	R 522 L5/8.4	02C12	C257		A	1 3	HVA904052-J							
CRD-V-117/1831	2	SCRAM SOLENOID PILOT CRD-V-126&127	R 522 L5/8.4	02C12	C257		A	1 3	HVA904052-J							
CRD-V-117/1835	2	SCRAM SOLENOID PILOT CRD-V-126&127	R 522 K2/8.4	02C12	C257		A	1 3	HVA904052-J							
CRD-V-117/1839	2	SCRAM SOLENOID PILOT CRD-V-126&127	R 522 K2/8.4	02C12	C257		A	1 3	HVA904052-J							
CRD-V-117/1843		SCRAM SOLENOID PILOT CRD-V-126&127		02C12			A	1 3								

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 522 K2/8.4	C257			HVA904052-J							
CRD-V-117/1847	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/8.4	C257			HVA904052-J							
CRD-V-117/1851	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/8.4	C257			HVA904052-J							
CRD-V-117/1855	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/6.4	C257			HVA904052-J							
CRD-V-117/1859	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/8.4	C257			HVA904052-J							
CRD-V-117/2203	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 L5/8.4	C257			HVA904052-J							
CRD-V-117/2207	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 L5/8.4	C257			HVA904052-J							
CRD-V-117/2211	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 L5/8.4	C257			HVA904052-J							
CRD-V-117/2215	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 L5/8.4	C257			HVA904052-J							
CRD-V-117/2219	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 L5/8.4	C257			HVA904052-J							
CRD-V-117/2223	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	C257			HVA904052-J							
CRD-V-117/2227	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	C257			HVA904052-J							
CRD-V-117/2231	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	C257			HVA904052-J							
CRD-V-117/2235	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	C257			HVA904052-J							
CRD-V-117/2239	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	C257			HVA904052-J							
CRD-V-117/2243	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	C257			HVA904052-J							
CRD-V-117/2247	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	C257			HVA904052-J							
CRD-V-117/2251	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	C257			HVA904052-J							
CRD-V-117/2255	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	C257			HVA904052-J							
CRD-V-117/2259	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	C257			HVA904052-J							
CRD-V-117/2603	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	C257			HVA904052-J							
CRD-V-117/2607	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	C257			HVA904052-J							
CRD-V-117/2611	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	C257			HVA904052-J							
CRD-V-117/2615	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	C257			HVA904052-J							
CRD-V-117/2619	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	C257			HVA904052-J							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QIC	QS	USE	TEST / MFG MODEL NO.	ANL	F/O	C	FREQ	TM	HL
CRD-V-117/2623	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	C257			HVA904052-J							
CRD-V-117/2627	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	C257			HVA904052-J							
CRD-V-117/2631	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	C257			HVA904052-J							
CRD-V-117/2635	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	C257			HVA904052-J							
CRD-V-117/2639	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	C257			HVA904052-J							
CRD-V-117/2643	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	C257			HVA904052-J							
CRD-V-117/2647	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	C257			HVA904052-J							
CRD-V-117/2651	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	C257			HVA904052-J							
CRD-V-117/2655	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	C257			HVA904052-J							
CRD-V-117/2659	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	C257			HVA904052-J							
CRD-V-117/3003	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	C257			HVA904052-J							
CRD-V-117/3007	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	C257			HVA904052-J							
CRD-V-117/3011	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	C257			HVA904052-J							
CRD-V-117/3015	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	C257			HVA904052-J							
CRD-V-117/3019	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	C257			HVA904052-J							
CRD-V-117/3023	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	C257			HVA904052-J							
CRD-V-117/3027	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	C257			HVA904052-J							
CRD-V-117/3031	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	C257			HVA904052-J							
CRD-V-117/3035	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	C257			HVA904052-J							
CRD-V-117/3039	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	C257			HVA904052-J							
CRD-V-117/3043	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	C257			HVA904052-J							
CRD-V-117/3047	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	C257			HVA904052-J							
CRD-V-117/3051	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	C257			HVA904052-J							
CRD-V-117/3055	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	C257			HVA904052-J							
CRD-V-117/3059	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	OID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TH	HL
2	R 522 K2/3.7	C257			HVA904052-J							
CRD-V-117/3403	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	C257			HVA904052-J							
CRD-V-117/3407	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	C257			HVA904052-J							
CRD-V-117/3411	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	C257			HVA904052-J							
CRD-V-117/3415	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	C257			HVA904052-J							
CRD-V-117/3419	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	C257			HVA904052-J							
CRD-V-117/3423	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	C257			HVA904052-J							
CRD-V-117/3427	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	C257			HVA904052-J							
CRD-V-117/3431	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	C257			HVA904052-J							
CRD-V-117/3435	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	C257			HVA904052-J							
CRD-V-117/3439	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	C257			HVA904052-J							
CRD-V-117/3443	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	C257			HVA904052-J							
CRD-V-117/3447	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	C257			HVA904052-J							
CRD-V-117/3451	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	C257			HVA904052-J							
CRD-V-117/3455	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	C257			HVA904052-J							
CRD-V-117/3459	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	C257			HVA904052-J							
CRD-V-117/3803	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	C257			HVA904052-J							
CRD-V-117/3807	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	C257			HVA904052-J							
CRD-V-117/3811	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	C257			HVA904052-J							
CRD-V-117/3815	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	C257			HVA904052-J							
CRD-V-117/3819	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	C257			HVA904052-J							
CRD-V-117/3823	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	C257			HVA904052-J							
CRD-V-117/3827	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	C257			HVA904052-J							
CRD-V-117/3831	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	C257			HVA904052-J							
CRD-V-117/3835	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	C257			HVA904052-J							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	AVL	F/O	C	FREQ	TM	HL
CRD-V-117/3839	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	C257			HVA904052-J							
CRD-V-117/3843	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	C257			HVA904052-J							
CRD-V-117/3847	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	C257			HVA904052-J							
CRD-V-117/3851	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	C257			HVA904052-J							
CRD-V-117/3855	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	C257			HVA904052-J							
CRD-V-117/3859	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	C257			HVA904052-J							
CRD-V-117/4203	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	C257			HVA904052-J							
CRD-V-117/4207	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	C257			HVA904052-J							
CRD-V-117/4211	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	C257			HVA904052-J							
CRD-V-117/4215	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	C257			HVA904052-J							
CRD-V-117/4219	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	C257			HVA904052-J							
CRD-V-117/4223	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	C257			HVA904052-J							
CRD-V-117/4227	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	C257			HVA904052-J							
CRD-V-117/4231	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	C257			HVA904052-J							
CRD-V-117/4235	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	C257			HVA904052-J							
CRD-V-117/4239	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	C257			HVA904052-J							
CRD-V-117/4243	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	C257			HVA904052-J							
CRD-V-117/4247	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	C257			HVA904052-J							
CRD-V-117/4251	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	C257			HVA904052-J							
CRD-V-117/4255	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	C257			HVA904052-J							
CRD-V-117/4259	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	C257			HVA904052-J							
CRD-V-117/4607	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	C257			HVA904052-J							
CRD-V-117/4611	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	C257			HVA904052-J							
CRD-V-117/4615	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	C257			HVA904052-J							
CRD-V-117/4619	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TN	HL
2	R 522 L5/3.7	C257			HVA904052-J							
CRD-V-117/4623	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	C257			HVA904052-J							
CRD-V-117/4627	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	C257			HVA904052-J							
CRD-V-117/4631	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	C257			HVA904052-J							
CRD-V-117/4635	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	C257			HVA904052-J							
CRD-V-117/4639	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	C257			HVA904052-J							
CRD-V-117/4643	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	C257			HVA904052-J							
CRD-V-117/4647	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	C257			HVA904052-J							
CRD-V-117/4651	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	C257			HVA904052-J							
CRD-V-117/4655	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	C257			HVA904052-J							
CRD-V-117/5011	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	C257			HVA904052-J							
CRD-V-117/5015	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	C257			HVA904052-J							
CRD-V-117/5019	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	C257			HVA904052-J							
CRD-V-117/5023	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	C257			HVA904052-J							
CRD-V-117/5027	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	C257			HVA904052-J							
CRD-V-117/5031	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	C257			HVA904052-J							
CRD-V-117/5035	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	C257			HVA904052-J							
CRD-V-117/5039	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	C257			HVA904052-J							
CRD-V-117/5043	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	C257			HVA904052-J							
CRD-V-117/5047	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	C257			HVA904052-J							
CRD-V-117/5051	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	C257			HVA904052-J							
CRD-V-117/5415	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	C257			HVA904052-J							
CRD-V-117/5419	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	C257			HVA904052-J							
CRD-V-117/5423	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	C257			HVA904052-J							
CRD-V-117/5427	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	C257			HVA904052-J							

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EQUIPMENT NO. LV	DESCRIPTION PLANT LOCATION	CONTRACT MFG	QID	QS	USE MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
CRD-V-117/5431 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 K2/3.7	02C12 C257			1 3 HVA904052-J							
CRD-V-117/5435 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 K2/3.7	02C12 C257		B	1 3 HVA904052-J	1 1	0 2			02		Y
CRD-V-117/5439 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 K2/3.7	02C12 C257		B	1 3 HVA904052-J	1 1	0 2			02		Y
CRD-V-117/5443 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 K2/3.7	02C12 C257		B	1 3 HVA904052-J	1 1	0 2			02		Y
CRD-V-117/5447 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 K2/3.7	02C12 C257		B	1 3 HVA904052-J	1 1	0 2			02		Y
CRD-V-117/5819 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 L5/3.7	02C12 C257		B	1 3 HVA904052-J	1 1	0 2			02		Y
CRD-V-117/5823 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 L5/3.7	02C12 C257		B	1 3 HVA904052-J	1 1	0 2			02		Y
CRD-V-117/5827 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 L5/3.7	02C12 C257		B	1 3 HVA904052-J	1 1	0 2			02		Y
CRD-V-117/5831 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 K2/3.7	02C12 C257		B	1 3 HVA904052-J	1 1	0 2			02		Y
CRD-V-117/5835 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 K2/3.7	02C12 C257		B	1 3 HVA904052-J	1 1	0 2			02		Y
CRD-V-117/5839 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 K2/3.7	02C12 C257		B	1 3 HVA904052-J	1 1	0 2			02		Y
CRD-V-117/5843 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 K2/3.7	02C12 C257		B	1 3 HVA904052-J	1 1	0 2			02		Y
CRD-V-118/0219 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 L5/8.4	02C12 A610		A	1 3 HVA904052-J							
CRD-V-118/0223 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 L5/8.4	02C12 A610		A	1 3 HVA904052-J							
CRD-V-118/0227 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 L5/8.4	02C12 A610		A	1 3 HVA904052-J							
CRD-V-118/0231 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 L5/8.4	02C12 A610		A	1 3 HVA904052-J							
CRD-V-118/0235 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 K2/8.4	02C12 A610		A	1 3 HVA904052-J							
CRD-V-118/0239 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 K2/8.4	02C12 A610		A	1 3 HVA904052-J							
CRD-V-118/0243 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 K2/8.4	02C12 A610		A	1 3 HVA904052-J							
CRD-V-118/0615 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 L5/8.4	02C12 A610		A	1 3 HVA904052-J							
CRD-V-118/0619 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 L5/8.4	02C12 A610		A	1 3 HVA904052-J							
CRD-V-118/0623 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 L5/8.4	02C12 A610		A	1 3 HVA904052-J							
CRD-V-118/0627 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 L5/8.4	02C12 A610		A	1 3 HVA904052-J							
CRD-V-118/0631 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 L5/8.4	02C12 A610		A	1 3 HVA904052-J							
CRD-V-118/0635	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							

EQUIPMENT NO. LV	DESCRIPTION PLANT LOCATION.	CONTRACT MFG	QID	QS	USE MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
CRD-V-118/1447 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 K2/8.4	02C12 A610		A	1 3 HVA904052-J							
CRD-V-118/1451 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 K2/8.4	02C12 A610		A	1 3 HVA904052-J							
CRD-V-118/1455 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 K2/8.4	02C12 A610		A	1 3 HVA904052-J							
CRD-V-118/1803 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 L5/8.4	02C12 A610		A	1 3 HVA904052-J							
CRD-V-118/1807 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 L5/8.4	02C12 A610		A	1 3 HVA904052-J							
CRD-V-118/1811 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 L5/8.4	02C12 A610		A	1 3 HVA904052-J							
CRD-V-118/1815 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 L5/8.4	02C12 A610		A	1 3 HVA904052-J							
CRD-V-118/1819 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 L5/8.4	02C12 A610		A	1 3 HVA904052-J							
CRD-V-118/1823 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 L5/8.4	02C12 A610		A	1 3 HVA904052-J							
CRD-V-118/1827 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 L5/8.4	02C12 A610		A	1 3 HVA904052-J							
CRD-V-118/1831 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 L5/8.4	02C12 A610		A	1 3 HVA904052-J							
CRD-V-118/1835 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 K2/8.4	02C12 A610		A	1 3 HVA904052-J							
CRD-V-118/1839 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 K2/8.4	02C12 A610		A	1 3 HVA904052-J							
CRD-V-118/1843 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 K2/8.4	02C12 A610		A	1 3 HVA904052-J							
CRD-V-118/1847 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 K2/8.4	02C12 A610		A	1 3 HVA904052-J							
CRD-V-118/1851 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 K2/8.4	02C12 A610		A	1 3 HVA904052-J							
CRD-V-118/1855 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 K2/8.4	02C12 A610		A	1 3 HVA904052-J							
CRD-V-118/1859 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 K2/8.4	02C12 A610		A	1 3 HVA904052-J							
CRD-V-118/2203 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 L5/8.4	02C12 A610		A	1 3 HVA904052-J							
CRD-V-118/2207 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 L5/8.4	02C12 A610		A	1 3 HVA904052-J							
CRD-V-118/2211 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 L5/8.4	02C12 A610		A	1 3 HVA904052-J							
CRD-V-118/2215 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 L5/8.4	02C12 A610		A	1 3 HVA904052-J							
CRD-V-118/2219 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 L5/8.4	02C12 A610		A	1 3 HVA904052-J							
CRD-V-118/2223 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 L5/8.4	02C12 A610		A	1 3 HVA904052-J							
CRD-V-118/2227	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 522 K2/8.4	A610			HVA904052-J							
CRD-V-118/0639	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/8.4	A610			HVA904052-J							
CRD-V-118/0643	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/8.4	A610			HVA904052-J							
CRD-V-118/0647	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/8.4	A610			HVA904052-J							
CRD-V-118/1011	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 L5/8.4	A610			HVA904052-J							
CRD-V-118/1015	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 L5/8.4	A610			HVA904052-J							
CRD-V-118/1019	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 L5/8.4	A610			HVA904052-J							
CRD-V-118/1023	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 L5/8.4	A610			HVA904052-J							
CRD-V-118/1027	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 L5/8.4	A610			HVA904052-J							
CRD-V-118/1031	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 L5/8.4	A610			HVA904052-J							
CRD-V-118/1035	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/8.4	A610			HVA904052-J							
CRD-V-118/1039	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/8.4	A610			HVA904052-J							
CRD-V-118/1043	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/8.4	A610			HVA904052-J							
CRD-V-118/1047	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/8.4	A610			HVA904052-J							
CRD-V-118/1051	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/8.4	A610			HVA904052-J							
CRD-V-118/1407	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 L5/8.4	A610			HVA904052-J							
CRD-V-118/1411	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 L5/8.4	A610			HVA904052-J							
CRD-V-118/1415	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 L5/8.4	A610			HVA904052-J							
CRD-V-118/1419	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 L5/8.4	A610			HVA904052-J							
CRD-V-118/1423	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 L5/8.4	A610			HVA904052-J							
CRD-V-118/1427	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 L5/8.4	A610			HVA904052-J							
CRD-V-118/1431	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 L5/8.4	A610			HVA904052-J							
CRD-V-118/1435	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/8.4	A610			HVA904052-J							
CRD-V-118/1439	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/8.4	A610			HVA904052-J							
CRD-V-118/1443	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/8.4	A610			HVA904052-J							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	US	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TH	HL
2	R 522 L5/8.4	A610			HVA904052-J							
CRD-V-118/2231	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 L5/8.4	A610			HVA904052-J							
CRD-V-118/2235	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/8.4	A610			HVA904052-J							
CRD-V-118/2239	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/8.4	A610			HVA904052-J							
CRD-V-118/2243	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/8.4	A610			HVA904052-J							
CRD-V-118/2247	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/8.4	A610			HVA904052-J							
CRD-V-118/2251	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/8.4	A610			HVA904052-J							
CRD-V-118/2255	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/8.4	A610			HVA904052-J							
CRD-V-118/2259	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/8.4	A610			HVA904052-J							
CRD-V-118/2603	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 L5/8.4	A610			HVA904052-J							
CRD-V-118/2607	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 L5/8.4	A610			HVA904052-J							
CRD-V-118/2611	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 L5/8.4	A610			HVA904052-J							
CRD-V-118/2615	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 L5/8.4	A610			HVA904052-J							
CRD-V-118/2619	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 L5/8.4	A610			HVA904052-J							
CRD-V-118/2623	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 L5/8.4	A610			HVA904052-J							
CRD-V-118/2627	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 L5/8.4	A610			HVA904052-J							
CRD-V-118/2631	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 L5/8.4	A610			HVA904052-J							
CRD-V-118/2635	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/8.4	A610			HVA904052-J							
CRD-V-118/2639	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/8.4	A610			HVA904052-J							
CRD-V-118/2643	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/8.4	A610			HVA904052-J							
CRD-V-118/2647	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/8.4	A610			HVA904052-J							
CRD-V-118/2651	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/8.4	A610			HVA904052-J							
CRD-V-118/2655	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/8.4	A610			HVA904052-J							
CRD-V-118/2659	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/8.4	A610			HVA904052-J							
CRD-V-118/3003	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 L5/8.4	A610			HVA904052-J							

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EQUIPMENT NO. LV	DESCRIPTION PLANT LOCATION	CONTRACT MFG	QID	QS	USE TEST MFG MODEL NO.	ANL	F/O	C	FREQ	TM	HL
CRD-V-118/3007 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 L5/8.4	02C12 A610		A	1 3 HVA904052-J						
CRD-V-118/3011 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 L5/8.4	02C12 A610		A	1 3 HVA904052-J						
CRD-V-118/3015 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 L5/8.4	02C12 A610		A	1 3 HVA904052-J						
CRD-V-118/3019 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 L5/8.4	02C12 A610		A	1 3 HVA904052-J						
CRD-V-118/3023 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 L5/8.4	02C12 A610		A	1 3 HVA904052-J						
CRD-V-118/3027 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 L5/8.4	02C12 A610		A	1 3 HVA904052-J						
CRD-V-118/3031 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 K2/3.7	02C12 A610		A	1 3 HVA904052-J						
CRD-V-118/3035 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 K2/3.7	02C12 A610		A	1 3 HVA904052-J						
CRD-V-118/3039 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 K2/3.7	02C12 A610		A	1 3 HVA904052-J						
CRD-V-118/3043 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 K2/3.7	02C12 A610		A	1 3 HVA904052-J						
CRD-V-118/3047 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 K2/3.7	02C12 A610		A	1 3 HVA904052-J						
CRD-V-118/3051 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 K2/3.7	02C12 A610		A	1 3 HVA904052-J						
CRD-V-118/3055 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 K2/3.7	02C12 A610		A	1 3 HVA904052-J						
CRD-V-118/3059 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 K2/3.7	02C12 A610		A	1 3 HVA904052-J						
CRD-V-118/3403 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 L5/3.7	02C12 A610		A	1 3 HVA904052-J						
CRD-V-118/3407 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 L5/3.7	02C12 A610		A	1 3 HVA904052-J						
CRD-V-118/3411 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 L5/3.7	02C12 A610		A	1 3 HVA904052-J						
CRD-V-118/3415 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 L5/3.7	02C12 A610		A	1 3 HVA904052-J						
CRD-V-118/3419 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 L5/3.7	02C12 A610		A	1 3 HVA904052-J						
CRD-V-118/3423 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 L5/3.7	02C12 A610		A	1 3 HVA904052-J						
CRD-V-118/3427 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 L5/3.7	02C12 A610		A	1 3 HVA904052-J						
CRD-V-118/3431 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 K2/3.7	02C12 A610		A	1 3 HVA904052-J						
CRD-V-118/3435 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 K2/3.7	02C12 A610		A	1 3 HVA904052-J						
CRD-V-118/3439 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 K2/3.7	02C12 A610		A	1 3 HVA904052-J						
CRD-V-118/3443	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3						

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / TEST / MFG MODEL NO.	ANL	F/O	C	FREQ	TN	HL
2	R 522 K2/3.7	A610			HVA904052-J						
CRD-V-118/3447	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3						
2	R 522 K2/3.7	A610			HVA904052-J						
CRD-V-118/3451	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3						
2	R 522 K2/3.7	A610			HVA904052-J						
CRD-V-118/3455	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3						
2	R 522 K2/3.7	A610			HVA904052-J						
CRD-V-118/3459	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3						
2	R 522 K2/3.7	A610			HVA904052-J						
CRD-V-118/3803	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3						
2	R 522 L5/3.7	A610			HVA904052-J						
CRD-V-118/3807	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3						
2	R 522 L5/3.7	A610			HVA904052-J						
CRD-V-118/3811	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3						
2	R 522 L5/3.7	A610			HVA904052-J						
CRD-V-118/3815	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3						
2	R 522 L5/3.7	A610			HVA904052-J						
CRD-V-118/3819	SCRAM SOLENOID PILOT CRD-V-126&127	02C12			1 3						
2	R 522 L5/3.7	A610		A	HVA904052-J						
CRD-V-118/3823	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3						
2	R 522 L5/3.7	A610			HVA904052-J						
CRD-V-118/3827	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3						
2	R 522 L5/3.7	A610			HVA904052-J						
CRD-V-118/3831	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3						
2	R 522 K2/3.7	A610			HVA904052-J						
CRD-V-118/3835	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3						
2	R 522 K2/3.7	A610			HVA904052-J						
CRD-V-118/3839	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3						
2	R 522 K2/3.7	A610			HVA904052-J						
CRD-V-118/3843	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3						
2	R 522 K2/3.7	A610			HVA904052-J						
CRD-V-118/3847	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3						
2	R 522 K2/3.7	A610			HVA904052-J						
CRD-V-118/3851	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3						
2	R 522 K2/3.7	A610			HVA904052-J						
CRD-V-118/3855	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3						
2	R 522 K2/3.7	A610		A	HVA904052-J						
CRD-V-118/3859	SCRAM SOLENOID PILOT CRD-V-126&127	02C12			1 3						
2	R 522 K2/3.7	A610			HVA904052-J						
CRD-V-118/4203	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3						
2	R 522 L5/3.7	A610			HVA904052-J						
CRD-V-118/4207	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3						
2	R 522 L5/3.7	A610			HVA904052-J						
CRD-V-118/4211	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3						
2	R 522 L5/3.7	A610			HVA904052-J						
CRD-V-118/4215	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3						
2	R 522 L5/3.7	A610			HVA904052-J						
CRD-V-118/4219	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3						
2	R 522 L5/3.7	A610			HVA904052-J						

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	OID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
CRD-V-118/4223	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 L5/3.7	A610			HVA904052-J							
CRD-V-118/4227	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 L5/3.7	A610			HVA904052-J							
CRD-V-118/4231	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/3.7	A610			HVA904052-J							
CRD-V-118/4235	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/3.7	A610			HVA904052-J							
CRD-V-118/4239	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/3.7	A610			HVA904052-J							
CRD-V-118/4243	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/3.7	A610			HVA904052-J							
CRD-V-118/4247	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/3.7	A610			HVA904052-J							
CRD-V-118/4251	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/3.7	A610			HVA904052-J							
CRD-V-118/4255	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/3.7	A610			HVA904052-J							
CRD-V-118/4259	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/3.7	A610			HVA904052-J							
CRD-V-118/4607	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 L5/3.7	A610			HVA904052-J							
CRD-V-118/4611	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 L5/3.7	A610			HVA904052-J							
CRD-V-118/4615	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 L5/3.7	A610			HVA904052-J							
CRD-V-118/4619	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 L5/3.7	A610			HVA904052-J							
CRD-V-118/4623	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 L5/3.7	A610			HVA904052-J							
CRD-V-118/4627	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 L5/3.7	A610			HVA904052-J							
CRD-V-118/4631	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/3.7	A610			HVA904052-J							
CRD-V-118/4635	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/3.7	A610			HVA904052-J							
CRD-V-118/4639	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/3.7	A610			HVA904052-J							
CRD-V-118/4643	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/3.7	A610			HVA904052-J							
CRD-V-118/4647	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/3.7	A610			HVA904052-J							
CRD-V-118/4651	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/3.7	A610			HVA904052-J							
CRD-V-118/4655	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/3.7	A610			HVA904052-J							
CRD-V-118/5011	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 L5/3.7	A610			HVA904052-J							
CRD-V-118/5015	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QIC	QS	USE / MFG MODEL NO.	TEST	ANL	F/U	C	FREQ	TN	HL
2	R 522 L5/3.7	A610			HVA904052-J							
CRD-V-118/5019	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 L5/3.7	A610			HVA904052-J							
CRD-V-118/5023	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 L5/3.7	A610			HVA904052-J							
CRD-V-118/5027	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 L5/3.7	A610			HVA904052-J							
CRD-V-118/5031	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/3.7	A610			HVA904052-J							
CRD-V-118/5035	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/3.7	A610			HVA904052-J							
CRD-V-118/5039	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/3.7	A610			HVA904052-J							
CRD-V-118/5043	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/3.7	A610			HVA904052-J							
CRD-V-118/5047	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/3.7	A610			HVA904052-J							
CRD-V-118/5051	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/3.7	A610			HVA904052-J							
CRD-V-118/5415	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 L5/3.7	A610			HVA904052-J							
CRD-V-118/5419	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 L5/3.7	A610			HVA904052-J							
CRD-V-118/5423	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 L5/3.7	A610			HVA904052-J							
CRD-V-118/5427	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 L5/3.7	A610			HVA904052-J							
CRD-V-118/5431	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/3.7	A610			HVA904052-J							
CRD-V-118/5435	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/3.7	A610			HVA904052-J							
CRD-V-118/5439	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/3.7	A610			HVA904052-J							
CRD-V-118/5443	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/3.7	A610			HVA904052-J							
CRD-V-118/5447	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/3.7	A610			HVA904052-J							
CRD-V-118/5819	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 L5/3.7	A610			HVA904052-J							
CRD-V-118/5823	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 L5/3.7	A610			HVA904052-J							
CRD-V-118/5827	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 L5/3.7	A610			HVA904052-J							
CRD-V-118/5831	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/3.7	A610			HVA904052-J							
CRD-V-118/5835	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/3.7	A610			HVA904052-J							
CRD-V-118/5839	SCRAM SOLENOID PILOT CRD-V-126&127	02C12		A	1 3							
2	R 522 K2/3.7	A610			HVA904052-J							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QIC	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
CRD-V-118/5843 2	SCRAM SOLENOID PILOT CRD-V-126&127 R 522 K2/3.7	02C12 A610		A	1 3 HVA904052-J							
CRD-V-120 2	1"CHK.SCRAM DISCH.HDR VAC.BKR. R 544 J.1/5.1	215 V135		A	2 3 B-35772							
CRD-V-120/0219 2	.5"SOLENOID WITHDRAW EXHAUST VALVE R 522 L5/8.4	02C12 A610		B	1 3 HVA1709662A	1 1	0 2			02		Y
CRD-V-120/0223 2	.5"SOLENOID WITHDRAW EXHAUST VALVE R 522 L5/8.4	02C12 A610		B	1 3 HVA1709662A	1 1	0 2			02		Y
CRD-V-120/0227 2	.5"SOLENOID WITHDRAW EXHAUST VALVE R 522 L5/8.4	02C12 A610		B	1 3 HVA1709662A	1 1	0 2			02		Y
CRD-V-120/0231 2	.5"SOLENOID WITHDRAW EXHAUST VALVE R 522 L5/8.4	02C12 A610		B	1 3 HVA1709662A	1 1	0 2			02		Y
CRD-V-120/0235 2	.5"SOLENOID WITHDRAW EXHAUST VALVE R 522 K2/8.4	02C12 A610		B	1 3 HVA1709662A	1 1	0 2			02		Y
CRD-V-120/0239 2	.5"SOLENOID WITHDRAW EXHAUST VALVE R 522 K2/8.4	02C12 A610		B	1 3 HVA1709662A	1 1	0 2			02		Y
CRD-V-120/0243 2	.5"SOLENOID WITHDRAW EXHAUST VALVE R 522 K2/8.4	02C12 A610		B	1 3 HVA1709662A	1 1	0 2			02		Y
CRD-V-120/0615 2	.5"SOLENOID WITHDRAW EXHAUST VALVE R 522 L5/8.4	02C12 A610		B	1 3 HVA1709662A	1 1	0 2			02		Y
CRD-V-120/0619 2	.5"SOLENOID WITHDRAW EXHAUST VALVE R 522 L5/8.4	02C12 A610		B	1 3 HVA1709662A	1 1	0 2			02		Y
CRD-V-120/0623 2	.5"SOLENOID WITHDRAW EXHAUST VALVE R 522 L5/8.4	02C12 A610		B	1 3 HVA1709662A	1 1	0 2			02		Y
CRD-V-120/0627 2	.5"SOLENOID WITHDRAW EXHAUST VALVE R 522 L5/8.4	02C12 A610		B	1 3 HVA1709662A	1 1	0 2			02		Y
CRD-V-120/0631 2	.5"SOLENOID WITHDRAW EXHAUST VALVE R 522 L5/8.4	02C12 A610		B	1 3 HVA1709662A	1 1	0 2			02		Y
CRD-V-120/0635 2	.5"SOLENOID WITHDRAW EXHAUST VALVE R 522 K2/8.4	02C12 A610		B	1 3 HVA1709662A	1 1	0 2			02		Y
CRD-V-120/0639 2	.5"SOLENOID WITHDRAW EXHAUST VALVE R 522 K2/8.4	02C12 A610		B	1 3 HVA1709662A	1 1	0 2			02		Y
CRD-V-120/0643 2	.5"SOLENOID WITHDRAW EXHAUST VALVE R 522 K2/8.4	02C12 A610		B	1 3 HVA1709662A	1 1	0 2			02		Y
CRD-V-120/0647 2	.5"SOLENOID WITHDRAW EXHAUST VALVE R 522 K2/8.4	02C12 A610		B	1 3 HVA1709662A	1 1	0 2			02		Y
CRD-V-120/1011 2	.5"SOLENOID WITHDRAW EXHAUST VALVE R 522 L5/8.4	02C12 A610		B	1 3 HVA1709662A	1 1	0 2			02		Y
CRD-V-120/1015 2	.5"SOLENOID WITHDRAW EXHAUST VALVE R 522 L5/8.4	02C12 A610		B	1 3 HVA1709662A	1 1	0 2			02		Y
CRD-V-120/1019 2	.5"SOLENOID WITHDRAW EXHAUST VALVE R 522 L5/8.4	02C12 A610		B	1 3 HVA1709662A	1 1	0 2			02		Y
CRD-V-120/1023 2	.5"SOLENOID WITHDRAW EXHAUST VALVE R 522 L5/8.4	02C12 A610		B	1 3 HVA1709662A	1 1	0 2			02		Y
CRD-V-120/1027 2	.5"SOLENOID WITHDRAW EXHAUST VALVE R 522 L5/8.4	02C12 A610		B	1 3 HVA1709662A	1 1	0 2			02		Y
CRD-V-120/1031 2	.5"SOLENOID WITHDRAW EXHAUST VALVE R 522 L5/8.4	02C12 A610		B	1 3 HVA1709662A	1 1	0 2			02		Y
CRD-V-120/1035	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE	TEST / MFG MODEL NO.	ANL	F/O	C	FREQ	TH	HL
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-120/1039	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-120/1043	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-120/1047	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-120/1051	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-120/1407	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-120/1411	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-120/1415	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-120/1419	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-120/1423	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-120/1427	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-120/1431	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-120/1435	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-120/1439	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-120/1443	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-120/1447	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-120/1451	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-120/1455	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-120/1803	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-120/1807	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-120/1811	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-120/1815	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-120/1819	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-120/1823	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-120/1827	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							

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EQUIPMENT NO.	LV	DESCRIPTION	PLANT LOCATION	CONTRACT	MFG	QID	QS	USE	TEST	MFG MODEL NO.	ANL	F/O	C	FREQ	TH	HL
CRD-V-120/1831	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 L5/8.4	02C12	A610		B	1 3	1 1	HVA1709662A	0 2			02		Y
CRD-V-120/1835	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 K2/8.4	02C12	A610		B	1 3	1 1	HVA1709662A	0 2			02		Y
CRD-V-120/1839	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 K2/8.4	02C12	A610		B	1 3	1 1	HVA1709662A	0 2			02		Y
CRD-V-120/1843	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 K2/8.4	02C12	A610		B	1 3	1 1	HVA1709662A	0 2			02		Y
CRD-V-120/1847	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 K2/8.4	02C12	A610		B	1 3	1 1	HVA1709662A	0 2			02		Y
CRD-V-120/1851	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 K2/8.4	02C12	A610		B	1 3	1 1	HVA1709662A	0 2			02		Y
CRD-V-120/1855	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 K2/8.4	02C12	A610		B	1 3	1 1	HVA1709662A	0 2			02		Y
CRD-V-120/1859	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 K2/8.4	02C12	A610		B	1 3	1 1	HVA1709662A	0 2			02		Y
CRD-V-120/2203	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 L5/8.4	02C12	A610		B	1 3	1 1	HVA1709662A	0 2			02		Y
CRD-V-120/2207	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 L5/8.4	02C12	A610		B	1 3	1 1	HVA1709662A	0 2			02		Y
CRD-V-120/2211	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 L5/8.4	02C12	A610		B	1 3	1 1	HVA1709662A	0 2			02		Y
CRD-V-120/2215	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 L5/8.4	02C12	A610		B	1 3	1 1	HVA1709662A	0 2			02		Y
CRD-V-120/2219	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 L5/8.4	02C12	A610		B	1 3	1 1	HVA1709662A	0 2			02		Y
CRD-V-120/2223	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 L5/8.4	02C12	A610		B	1 3	1 1	HVA1709662A	0 2			02		Y
CRD-V-120/2227	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 L5/8.4	02C12	A610		B	1 3	1 1	HVA1709662A	0 2			02		Y
CRD-V-120/2231	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 L5/8.4	02C12	A610		B	1 3	1 1	HVA1709662A	0 2			02		Y
CRD-V-120/2235	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 K2/8.4	02C12	A610		B	1 3	1 1	HVA1709662A	0 2			02		Y
CRD-V-120/2239	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 K2/8.4	02C12	A610		B	1 3	1 1	HVA1709662A	0 2			02		Y
CRD-V-120/2243	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 K2/8.4	02C12	A610		B	1 3	1 1	HVA1709662A	0 2			02		Y
CRD-V-120/2247	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 K2/8.4	02C12	A610		B	1 3	1 1	HVA1709662A	0 2			02		Y
CRD-V-120/2251	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 K2/8.4	02C12	A610		B	1 3	1 1	HVA1709662A	0 2			02		Y
CRD-V-120/2255	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 K2/8.4	02C12	A610		B	1 3	1 1	HVA1709662A	0 2			02		Y
CRD-V-120/2259	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 K2/8.4	02C12	A610		B	1 3	1 1	HVA1709662A	0 2			02		Y
CRD-V-120/2603	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 L5/8.4	02C12	A610		B	1 3	1 1	HVA1709662A	0 2			02		Y
CRD-V-120/2607		.5"SOLENOID WITHDRAW EXHAUST VALVE		02C12			B	1 3	1 1		0 2			02		Y

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE	TEST / MFG MODEL NO.	ANL	F/O	C	FREQ	IM	HL
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-120/2611	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-120/2615	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-120/2619	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-120/2623	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-120/2627	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-120/2631	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-120/2635	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-120/2639	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-120/2643	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-120/2647	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-120/2651	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-120/2655	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-120/2659	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-120/3003	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-120/3007	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-120/3011	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-120/3015	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-120/3019	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-120/3023	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-120/3027	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-120/3031	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-120/3035	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-120/3039	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-120/3043	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							

EQUIPMENT NO.	LV	DESCRIPTION	PLANT LOCATION	CONTRACT	MFG	OID	QS	USE	TEST	ANL	F/O	C	FREQ	TM	HL	MFG MODEL NO.
CRD-V-120/3047	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 K2/3.7	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-120/3051	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 K2/3.7	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-120/3055	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 K2/3.7	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-120/3059	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 K2/3.7	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-120/3403	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 L5/3.7	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-120/3407	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 L5/3.7	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-120/3411	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 L5/3.7	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-120/3415	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 L5/3.7	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-120/3419	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 L5/3.7	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-120/3423	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 L5/3.7	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-120/3427	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 L5/3.7	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-120/3431	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 K2/3.7	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-120/3435	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 K2/3.7	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-120/3439	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 K2/3.7	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-120/3443	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 K2/3.7	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-120/3447	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 K2/3.7	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-120/3451	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 K2/3.7	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-120/3455	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 K2/3.7	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-120/3459	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 K2/3.7	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-120/3803	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 L5/3.7	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-120/3807	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 L5/3.7	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-120/3811	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 L5/3.7	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-120/3815	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 L5/3.7	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-120/3819	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 L5/3.7	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-120/3823		.5"SOLENOID WITHDRAW EXHAUST VALVE		02C12			B	1 3	1 1	0 2			02		Y	

271.002-194

WNP-2

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	GIO	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-120/3827	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	P 522 L5/3.7	A610			HVA1709662A							
CRD-V-120/3831	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-120/3835	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-120/3839	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-120/3843	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-120/3847	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-120/3851	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-120/3855	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-120/3859	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-120/4203	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-120/4207	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-120/4211	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-120/4215	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-120/4219	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-120/4223	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-120/4227	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-120/4231	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-120/4235	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-120/4239	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-120/4243	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-120/4247	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-120/4251	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-120/4255	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-120/4259	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							

EQUIPMENT NO.	LV	DESCRIPTION	PLANT LOCATION	CONTRACT	MFG	QID	QS	USE	TEST	MFG MODEL NO.	ANL	F/O	C	FREQ	TM	HL
CRD-V-120/4607	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 L5/3.7	02C12	A610		B	1 3	1 1	HVA1709662A	0 2			02		Y
CRD-V-120/4611	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 L5/3.7	02C12	A610		B	1 3	1 1	HVA1709662A	0 2			02		Y
CRD-V-120/4615	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 L5/3.7	02C12	A610		B	1 3	1 1	HVA1709662A	0 2			02		Y
CRD-V-120/4619	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 L5/3.7	02C12	A610		B	1 3	1 1	HVA1709662A	0 2			02		Y
CRD-V-120/4623	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 L5/3.7	02C12	A610		B	1 3	1 1	HVA1709662A	0 2			02		Y
CRD-V-120/4627	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 L5/3.7	02C12	A610		B	1 3	1 1	HVA1709662A	0 2			02		Y
CRD-V-120/4631	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 K2/3.7	02C12	A610		B	1 3	1 1	HVA1709662A	0 2			02		Y
CRD-V-120/4635	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 K2/3.7	02C12	A610		B	1 3	1 1	HVA1709662A	0 2			02		Y
CRD-V-120/4639	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 K2/3.7	02C12	A610		B	1 3	1 1	HVA1709662A	0 2			02		Y
CRD-V-120/4643	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 K2/3.7	02C12	A610		B	1 3	1 1	HVA1709662A	0 2			02		Y
CRD-V-120/4647	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 K2/3.7	02C12	A610		B	1 3	1 1	HVA1709662A	0 2			02		Y
CRD-V-120/4651	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 K2/3.7	02C12	A610		B	1 3	1 1	HVA1709662A	0 2			02		Y
CRD-V-120/4655	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 K2/3.7	02C12	A610		B	1 3	1 1	HVA1709662A	0 2			02		Y
CRD-V-120/5011	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 L5/3.7	02C12	A610		B	1 3	1 1	HVA1709662A	0 2			02		Y
CRD-V-120/5015	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 L5/3.7	02C12	A610		B	1 3	1 1	HVA1709662A	0 2			02		Y
CRD-V-120/5019	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 L5/3.7	02C12	A610		B	1 3	1 1	HVA1709662A	0 2			02		Y
CRD-V-120/5023	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 L5/3.7	02C12	A610		B	1 3	1 1	HVA1709662A	0 2			02		Y
CRD-V-120/5027	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 L5/3.7	02C12	A610		B	1 3	1 1	HVA1709662A	0 2			02		Y
CRD-V-120/5031	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 K2/3.7	02C12	A610		B	1 3	1 1	HVA1709662A	0 2			02		Y
CRD-V-120/5035	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 K2/3.7	02C12	A610		B	1 3	1 1	HVA1709662A	0 2			02		Y
CRD-V-120/5039	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 K2/3.7	02C12	A610		B	1 3	1 1	HVA1709662A	0 2			02		Y
CRD-V-120/5043	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 K2/3.7	02C12	A610		B	1 3	1 1	HVA1709662A	0 2			02		Y
CRD-V-120/5047	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 K2/3.7	02C12	A610		B	1 3	1 1	HVA1709662A	0 2			02		Y
CRD-V-120/5051	2	.5"SOLENOID WITHDRAW EXHAUST VALVE	R 522 K2/3.7	02C12	A610		B	1 3	1 1	HVA1709662A	0 2			02		Y
CRD-V-120/5415		.5"SOLENOID WITHDRAW EXHAUST VALVE		02C12			B	1 3	1 1		0 2			02		Y

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-120/5419	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-120/5423	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-120/5427	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-120/5431	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-120/5435	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-120/5439	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-120/5443	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-120/5447	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-120/5819	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-120/5823	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-120/5827	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-120/5831	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-120/5835	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-120/5839	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-120/5843	.5"SOLENOID WITHDRAW EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-121/0219	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-121/0223	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-121/0227	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-121/0231	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-121/0235	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-121/0239	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-121/0243	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-121/0615	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-121/0619	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	US	USE	TEST / MFG MODEL NO.	ANL	F/O	C	FREQ	TM	HL
CRD-V-121/0623 2	.5" SOLENOID INSERT EXHAUST VALVE R 522 L5/8.4	02C12 A610		B	1 3	1 1 HVA1709662A	0 2			02		Y
CRD-V-121/0627 2	.5" SOLENOID INSERT EXHAUST VALVE R 522 L5/8.4	02C12 A610		B	1 3	1 1 HVA1709662A	0 2			02		Y
CRD-V-121/0631 2	.5" SOLENOID INSERT EXHAUST VALVE R 522 L5/8.4	02C12 A610		B	1 3	1 1 HVA1709662A	0 2			02		Y
CRD-V-121/0635 2	.5" SOLENOID INSERT EXHAUST VALVE R 522 K2/8.4	02C12 A610		B	1 3	1 1 HVA1709662A	0 2			02		Y
CRD-V-121/0639 2	.5" SOLENOID INSERT EXHAUST VALVE R 522 K2/8.4	02C12 A610		B	1 3	1 1 HVA1709662A	0 2			02		Y
CRD-V-121/0643 2	.5" SOLENOID INSERT EXHAUST VALVE R 522 K2/8.4	02C12 A610		B	1 3	1 1 HVA1709662A	0 2			02		Y
CRD-V-121/0647 2	.5" SOLENOID INSERT EXHAUST VALVE R 522 K2/8.4	02C12 A610		B	1 3	1 1 HVA1709662A	0 2			02		Y
CRD-V-121/1011 2	.5" SOLENOID INSERT EXHAUST VALVE R 522 L5/8.4	02C12 A610		B	1 3	1 1 HVA1709662A	0 2			02		Y
CRD-V-121/1015 2	.5" SOLENOID INSERT EXHAUST VALVE R 522 L5/8.4	02C12 A610		B	1 3	1 1 HVA1709662A	0 2			02		Y
CRD-V-121/1019 2	.5" SOLENOID INSERT EXHAUST VALVE R 522 L5/8.4	02C12 A610		B	1 3	1 1 HVA1709662A	0 2			02		Y
CRD-V-121/1023 2	.5" SOLENOID INSERT EXHAUST VALVE R 522 L5/8.4	02C12 A610		B	1 3	1 1 HVA1709662A	0 2			02		Y
CRD-V-121/1027 2	.5" SOLENOID INSERT EXHAUST VALVE R 522 L5/8.4	02C12 A610		B	1 3	1 1 HVA1709662A	0 2			02		Y
CRD-V-121/1031 2	.5" SOLENOID INSERT EXHAUST VALVE R 522 L5/8.4	02C12 A610		B	1 3	1 1 HVA1709662A	0 2			02		Y
CRD-V-121/1035 2	.5" SOLENOID INSERT EXHAUST VALVE R 522 K2/8.4	02C12 A610		B	1 3	1 1 HVA1709662A	0 2			02		Y
CRD-V-121/1039 2	.5" SOLENOID INSERT EXHAUST VALVE R 522 K2/8.4	02C12 A610		B	1 3	1 1 HVA1709662A	0 2			02		Y
CRD-V-121/1043 2	.5" SOLENOID INSERT EXHAUST VALVE R 522 K2/8.4	02C12 A610		B	1 3	1 1 HVA1709662A	0 2			02		Y
CRD-V-121/1047 2	.5" SOLENOID INSERT EXHAUST VALVE R 522 K2/8.4	02C12 A610		B	1 3	1 1 HVA1709662A	0 2			02		Y
CRD-V-121/1051 2	.5" SOLENOID INSERT EXHAUST VALVE R 522 K2/8.4	02C12 A610		B	1 3	1 1 HVA1709662A	0 2			02		Y
CRD-V-121/1407 2	.5" SOLENOID INSERT EXHAUST VALVE R 522 L5/8.4	02C12 A610		B	1 3	1 1 HVA1709662A	0 2			02		Y
CRD-V-121/1411 2	.5" SOLENOID INSERT EXHAUST VALVE R 522 L5/8.4	02C12 A610		B	1 3	1 1 HVA1709662A	0 2			02		Y
CRD-V-121/1415 2	.5" SOLENOID INSERT EXHAUST VALVE R 522 L5/8.4	02C12 A610		B	1 3	1 1 HVA1709662A	0 2			02		Y
CRD-V-121/1419 2	.5" SOLENOID INSERT EXHAUST VALVE R 522 L5/8.4	02C12 A610		B	1 3	1 1 HVA1709662A	0 2			02		Y
CRD-V-121/1423 2	.5" SOLENOID INSERT EXHAUST VALVE R 522 L5/8.4	02C12 A610		B	1 3	1 1 HVA1709662A	0 2			02		Y
CRD-V-121/1427 2	.5" SOLENOID INSERT EXHAUST VALVE R 522 L5/8.4	02C12 A610		B	1 3	1 1 HVA1709662A	0 2			02		Y
CRD-V-121/1431	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-121/1435	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-121/1439	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-121/1443	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-121/1447	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-121/1451	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-121/1455	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-121/1803	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-121/1807	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-121/1811	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-121/1815	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-121/1819	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-121/1823	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-121/1827	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-121/1831	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-121/1835	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-121/1839	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-121/1843	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-121/1847	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-121/1851	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-121/1855	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-121/1859	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-121/2203	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-121/2207	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-121/2211	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							

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EQUIPMENT NO.	LV	DESCRIPTION	PLANT LOCATION	CONTRACT	MFG	OID	QS	USE	TEST	ANL	MFG MODEL NO.	F/O	C	FREQ	TM	HL
CRD-V-121/2215	2	.5" SOLENOID INSERT EXHAUST VALVE	R 522 L5/8.4	02C12	A610		B	1 3	1 1	0 2	HVA1709662A			02		Y
CRD-V-121/2219	2	.5" SOLENOID INSERT EXHAUST VALVE	R 522 L5/8.4	02C12	A610		B	1 3	1 1	0 2	HVA1709662A			02		Y
CRD-V-121/2223	2	.5" SOLENOID INSERT EXHAUST VALVE	R 522 L5/8.4	02C12	A610		B	1 3	1 1	0 2	HVA1709662A			02		Y
CRD-V-121/2227	2	.5" SOLENOID INSERT EXHAUST VALVE	R 522 L5/8.4	02C12	A610		B	1 3	1 1	0 2	HVA1709662A			02		Y
CRD-V-121/2231	2	.5" SOLENOID INSERT EXHAUST VALVE	R 522 L5/8.4	02C12	A610		B	1 3	1 1	0 2	HVA1709662A			02		Y
CRD-V-121/2235	2	.5" SOLENOID INSERT EXHAUST VALVE	R 522 K2/8.4	02C12	A610		B	1 3	1 1	0 2	HVA1709662A			02		Y
CRD-V-121/2239	2	.5" SOLENOID INSERT EXHAUST VALVE	R 522 K2/8.4	02C12	A610		B	1 3	1 1	0 2	HVA1709662A			02		Y
CRD-V-121/2243	2	.5" SOLENOID INSERT EXHAUST VALVE	R 522 K2/8.4	02C12	A610		B	1 3	1 1	0 2	HVA1709662A			02		Y
CRD-V-121/2247	2	.5" SOLENOID INSERT EXHAUST VALVE	R 522 K2/8.4	02C12	A610		B	1 3	1 1	0 2	HVA1709662A			02		Y
CRD-V-121/2251	2	.5" SOLENOID INSERT EXHAUST VALVE	R 522 K2/8.4	02C12	A610		B	1 3	1 1	0 2	HVA1709662A			02		Y
CRD-V-121/2255	2	.5" SOLENOID INSERT EXHAUST VALVE	R 522 K2/8.4	02C12	A610		B	1 3	1 1	0 2	HVA1709662A			02		Y
CRD-V-121/2259	2	.5" SOLENOID INSERT EXHAUST VALVE	R 522 K2/8.4	02C12	A610		B	1 3	1 1	0 2	HVA1709662A			02		Y
CRD-V-121/2603	2	.5" SOLENOID INSERT EXHAUST VALVE	R 522 L5/8.4	02C12	A610		B	1 3	1 1	0 2	HVA1709662A			02		Y
CRD-V-121/2607	2	.5" SOLENOID INSERT EXHAUST VALVE	R 522 L5/8.4	02C12	A610		B	1 3	1 1	0 2	HVA1709662A			02		Y
CRD-V-121/2611	2	.5" SOLENOID INSERT EXHAUST VALVE	R 522 L5/8.4	02C12	A610		B	1 3	1 1	0 2	HVA1709662A			02		Y
CRD-V-121/2615	2	.5" SOLENOID INSERT EXHAUST VALVE	R 522 L5/8.4	02C12	A610		B	1 3	1 1	0 2	HVA1709662A			02		Y
CRD-V-121/2619	2	.5" SOLENOID INSERT EXHAUST VALVE	R 522 L5/8.4	02C12	A610		B	1 3	1 1	0 2	HVA1709662A			02		Y
CRD-V-121/2623	2	.5" SOLENOID INSERT EXHAUST VALVE	R 522 L5/8.4	02C12	A610		B	1 3	1 1	0 2	HVA1709662A			02		Y
CRD-V-121/2627	2	.5" SOLENOID INSERT EXHAUST VALVE	R 522 L5/8.4	02C12	A610		B	1 3	1 1	0 2	HVA1709662A			02		Y
CRD-V-121/2631	2	.5" SOLENOID INSERT EXHAUST VALVE	R 522 L5/8.4	02C12	A610		B	1 3	1 1	0 2	HVA1709662A			02		Y
CRD-V-121/2635	2	.5" SOLENOID INSERT EXHAUST VALVE	R 522 K2/8.4	02C12	A610		B	1 3	1 1	0 2	HVA1709662A			02		Y
CRD-V-121/2639	2	.5" SOLENOID INSERT EXHAUST VALVE	R 522 K2/8.4	02C12	A610		B	1 3	1 1	0 2	HVA1709662A			02		Y
CRD-V-121/2643	2	.5" SOLENOID INSERT EXHAUST VALVE	R 522 K2/8.4	02C12	A610		B	1 3	1 1	0 2	HVA1709662A			02		Y
CRD-V-121/2647	2	.5" SOLENOID INSERT EXHAUST VALVE	R 522 K2/8.4	02C12	A610		B	1 3	1 1	0 2	HVA1709662A			02		Y
CRD-V-121/2651		.5" SOLENOID INSERT EXHAUST VALVE		02C12			B	1 3	1 1	0 2				02		Y

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE	TEST	ANL	F/O	C	FREQ	TM	HL
					MFG MODEL NO.							
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-121/2655	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/6.4	A610			HVA1709662A							
CRD-V-121/2659	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/6.4	A610			HVA1709662A							
CRD-V-121/3003	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-121/3007	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-121/3011	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-121/3015	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-121/3019	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-121/3023	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/6.4	A610			HVA1709662A							
CRD-V-121/3027	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-121/3031	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-121/3035	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-121/3039	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-121/3043	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-121/3047	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-121/3051	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-121/3055	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-121/3059	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-121/3403	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-121/3407	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-121/3411	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-121/3415	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-121/3419	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-121/3423	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-121/3427	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
CRD-V-121/3431	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-121/3435	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-121/3439	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-121/3443	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-121/3447	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-121/3451	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-121/3455	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-121/3459	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-121/3803	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-121/3807	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-121/3811	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-121/3815	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-121/3819	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-121/3823	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-121/3827	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-121/3831	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-121/3835	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-121/3839	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-121/3843	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-121/3847	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-121/3851	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-121/3855	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-121/3859	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-121/4203	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-121/4207	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-121/4211	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-121/4215	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-121/4219	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-121/4223	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-121/4227	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-121/4231	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-121/4235	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-121/4239	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-121/4243	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-121/4247	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-121/4251	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-121/4255	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-121/4259	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-121/4607	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-121/4611	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-121/4615	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-121/4619	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-121/4623	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-121/4627	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-121/4631	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-121/4635	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-121/4639	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-121/4643	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-121/4647	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TH	HL
CRD-V-121/4651 / 2	.5" SOLENOID INSERT EXHAUST VALVE / R 522 K2/3.7	02C12 / A610		B	1 3 / HVA1709662A	1 1	0 2			02		Y
CRD-V-121/4655 / 2	.5" SOLENOID INSERT EXHAUST VALVE / R 522 K2/3.7	02C12 / A610		B	1 3 / HVA1709662A	1 1	0 2			02		Y
CRD-V-121/5011 / 2	.5" SOLENOID INSERT EXHAUST VALVE / R 522 L5/3.7	02C12 / A610		B	1 3 / HVA1709662A	1 1	0 2			02		Y
CRD-V-121/5015 / 2	.5" SOLENOID INSERT EXHAUST VALVE / R 522 L5/3.7	02C12 / A610		B	1 3 / HVA1709662A	1 1	0 2			02		Y
CRD-V-121/5019 / 2	.5" SOLENOID INSERT EXHAUST VALVE / R 522 L5/3.7	02C12 / A610		B	1 3 / HVA1709662A	1 1	0 2			02		Y
CRD-V-121/5023 / 2	.5" SOLENOID INSERT EXHAUST VALVE / R 522 L5/3.7	02C12 / A610		B	1 3 / HVA1709662A	1 1	0 2			02		Y
CRD-V-121/5027 / 2	.5" SOLENOID INSERT EXHAUST VALVE / R 522 L5/3.7	02C12 / A610		B	1 3 / HVA1709662A	1 1	0 2			02		Y
CRD-V-121/5031 / 2	.5" SOLENOID INSERT EXHAUST VALVE / R 522 K2/3.7	02C12 / A610		B	1 3 / HVA1709662A	1 1	0 2			02		Y
CRD-V-121/5035 / 2	.5" SOLENOID INSERT EXHAUST VALVE / R 522 K2/3.7	02C12 / A610		B	1 3 / HVA1709662A	1 1	0 2			02		Y
CRD-V-121/5039 / 2	.5" SOLENOID INSERT EXHAUST VALVE / R 522 K2/3.7	02C12 / A610		B	1 3 / HVA1709662A	1 1	0 2			02		Y
CRD-V-121/5043 / 2	.5" SOLENOID INSERT EXHAUST VALVE / R 522 K2/3.7	02C12 / A610		B	1 3 / HVA1709662A	1 1	0 2			02		Y
CRD-V-121/5047 / 2	.5" SOLENOID INSERT EXHAUST VALVE / R 522 K2/3.7	02C12 / A610		B	1 3 / HVA1709662A	1 1	0 2			02		Y
CRD-V-121/5051 / 2	.5" SOLENOID INSERT EXHAUST VALVE / R 522 K2/3.7	02C12 / A610		B	1 3 / HVA1709662A	1 1	0 2			02		Y
CRD-V-121/5415 / 2	.5" SOLENOID INSERT EXHAUST VALVE / R 522 L5/3.7	02C12 / A610		B	1 3 / HVA1709662A	1 1	0 2			02		Y
CRD-V-121/5419 / 2	.5" SOLENOID INSERT EXHAUST VALVE / R 522 L5/3.7	02C12 / A610		B	1 3 / HVA1709662A	1 1	0 2			02		Y
CRD-V-121/5423 / 2	.5" SOLENOID INSERT EXHAUST VALVE / R 522 L5/3.7	02C12 / A610		B	1 3 / HVA1709662A	1 1	0 2			02		Y
CRD-V-121/5427 / 2	.5" SOLENOID INSERT EXHAUST VALVE / R 522 L5/3.7	02C12 / A610		B	1 3 / HVA1709662A	1 1	0 2			02		Y
CRD-V-121/5431 / 2	.5" SOLENOID INSERT EXHAUST VALVE / R 522 K2/3.7	02C12 / A610		B	1 3 / HVA1709662A	1 1	0 2			02		Y
CRD-V-121/5435 / 2	.5" SOLENOID INSERT EXHAUST VALVE / R 522 K2/3.7	02C12 / A610		B	1 3 / HVA1709662A	1 1	0 2			02		Y
CRD-V-121/5439 / 2	.5" SOLENOID INSERT EXHAUST VALVE / R 522 K2/3.7	02C12 / A610		B	1 3 / HVA1709662A	1 1	0 2			02		Y
CRD-V-121/5443 / 2	.5" SOLENOID INSERT EXHAUST VALVE / R 522 K2/3.7	02C12 / A610		B	1 3 / HVA1709662A	1 1	0 2			02		Y
CRD-V-121/5447 / 2	.5" SOLENOID INSERT EXHAUST VALVE / R 522 K2/3.7	02C12 / A610		B	1 3 / HVA1709662A	1 1	0 2			02		Y
CRD-V-121/5819 / 2	.5" SOLENOID INSERT EXHAUST VALVE / R 522 L5/3.7	02C12 / A610		B	1 3 / HVA1709662A	1 1	0 2			02		Y
CRD-V-121/5823 / 2	.5" SOLENOID INSERT EXHAUST VALVE / R 522 L5/3.7	02C12 / A610		B	1 3 / HVA1709662A	1 1	0 2			02		Y
CRD-V-121/5827	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-121/5831	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-121/5835	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-121/5839	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-121/5843	.5" SOLENOID INSERT EXHAUST VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-122/0219	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-122/0223	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-122/0227	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-122/0231	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-122/0235	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-122/0239	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-122/0243	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-122/0615	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-122/0619	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-122/0623	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-122/0627	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-122/0631	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-122/0635	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-122/0639	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-122/0643	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-122/0647	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-122/1011	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-122/1015	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-122/1019	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-122/1023	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							

EQUIPMENT NO.	LV	DESCRIPTION	PLANT LOCATION	CONTRACT	MFG	QID	QS	USE	TEST	ANL	F/O	C	FREQ	TM	HL	MFG MODEL NO.
CRD-V-122/1027	2	.5" SOLENOID WITHDRAW DRIVE VALVE	R 522 L5/8.4	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-122/1031	2	.5" SOLENOID WITHDRAW DRIVE VALVE	R 522 L5/8.4	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-122/1035	2	.5" SOLENOID WITHDRAW DRIVE VALVE	R 522 K2/8.4	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-122/1039	2	.5" SOLENOID WITHDRAW DRIVE VALVE	R 522 K2/8.4	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-122/1043	2	.5" SOLENOID WITHDRAW DRIVE VALVE	R 522 K2/8.4	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-122/1047	2	.5" SOLENOID WITHDRAW DRIVE VALVE	R 522 K2/8.4	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-122/1051	2	.5" SOLENOID WITHDRAW DRIVE VALVE	R 522 K2/8.4	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-122/1407	2	.5" SOLENOID WITHDRAW DRIVE VALVE	R 522 L5/8.4	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-122/1411	2	.5" SOLENOID WITHDRAW DRIVE VALVE	R 522 L5/8.4	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-122/1415	2	.5" SOLENOID WITHDRAW DRIVE VALVE	R 522 L5/8.4	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-122/1419	2	.5" SOLENOID WITHDRAW DRIVE VALVE	R 522 L5/8.4	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-122/1423	2	.5" SOLENOID WITHDRAW DRIVE VALVE	R 522 L5/8.4	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-122/1427	2	.5" SOLENOID WITHDRAW DRIVE VALVE	R 522 L5/8.4	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-122/1431	2	.5" SOLENOID WITHDRAW DRIVE VALVE	R 522 L5/8.4	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-122/1435	2	.5" SOLENOID WITHDRAW DRIVE VALVE	R 522 K2/8.4	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-122/1439	2	.5" SOLENOID WITHDRAW DRIVE VALVE	R 522 K2/8.4	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-122/1443	2	.5" SOLENOID WITHDRAW DRIVE VALVE	R 522 K2/8.4	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-122/1447	2	.5" SOLENOID WITHDRAW DRIVE VALVE	R 522 K2/8.4	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-122/1451	2	.5" SOLENOID WITHDRAW DRIVE VALVE	R 522 K2/8.4	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-122/1455	2	.5" SOLENOID WITHDRAW DRIVE VALVE	R 522 K2/8.4	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-122/1803	2	.5" SOLENOID WITHDRAW DRIVE VALVE	R 522 L5/8.4	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-122/1807	2	.5" SOLENOID WITHDRAW DRIVE VALVE	R 522 L5/8.4	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-122/1811	2	.5" SOLENOID WITHDRAW DRIVE VALVE	R 522 L5/8.4	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-122/1815	2	.5" SOLENOID WITHDRAW DRIVE VALVE	R 522 L5/8.4	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-122/1819		.5" SOLENOID WITHDRAW DRIVE VALVE		02C12			B	1 3	1 1	0 2			02		Y	

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE	TEST	ANL	F/O	C	FREQ	TM	HL	MFG MODEL NO.
2	R 522 L5/8.4	A610											HVA1709662A
CRD-V-122/1823 2	.5" SOLENOID WITHDRAW DRIVE VALVE R 522 L5/8.4	02C12 A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-122/1827 2	.5" SOLENOID WITHDRAW DRIVE VALVE R 522 L5/8.4	02C12 A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-122/1831 2	.5" SOLENOID WITHDRAW DRIVE VALVE R 522 L5/8.4	02C12 A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-122/1835 2	.5" SOLENOID WITHDRAW DRIVE VALVE R 522 K2/8.4	02C12 A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-122/1839 2	.5" SOLENOID WITHDRAW DRIVE VALVE R 522 K2/8.4	02C12 A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-122/1843 2	.5" SOLENOID WITHDRAW DRIVE VALVE R 522 K2/8.4	02C12 A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-122/1847 2	.5" SOLENOID WITHDRAW DRIVE VALVE R 522 K2/8.4	02C12 A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-122/1851 2	.5" SOLENOID WITHDRAW DRIVE VALVE R 522 K2/6.4	02C12 A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-122/1855 2	.5" SOLENOID WITHDRAW DRIVE VALVE R 522 K2/8.4	02C12 A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-122/1859 2	.5" SOLENOID WITHDRAW DRIVE VALVE R 522 K2/8.4	02C12 A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-122/2203 2	.5" SOLENOID WITHDRAW DRIVE VALVE R 522 L5/8.4	02C12 A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-122/2207 2	.5" SOLENOID WITHDRAW DRIVE VALVE R 522 L5/8.4	02C12 A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-122/2211 2	.5" SOLENOID WITHDRAW DRIVE VALVE R 522 L5/8.4	02C12 A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-122/2215 2	.5" SOLENOID WITHDRAW DRIVE VALVE R 522 L5/8.4	02C12 A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-122/2219 2	.5" SOLENOID WITHDRAW DRIVE VALVE R 522 L5/8.4	02C12 A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-122/2223 2	.5" SOLENOID WITHDRAW DRIVE VALVE R 522 L5/8.4	02C12 A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-122/2227 2	.5" SOLENOID WITHDRAW DRIVE VALVE R 522 L5/8.4	02C12 A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-122/2231 2	.5" SOLENOID WITHDRAW DRIVE VALVE R 522 L5/8.4	02C12 A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-122/2235 2	.5" SOLENOID WITHDRAW DRIVE VALVE R 522 K2/8.4	02C12 A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-122/2239 2	.5" SOLENOID WITHDRAW DRIVE VALVE R 522 K2/8.4	02C12 A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-122/2243 2	.5" SOLENOID WITHDRAW DRIVE VALVE R 522 K2/8.4	02C12 A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-122/2247 2	.5" SOLENOID WITHDRAW DRIVE VALVE R 522 K2/8.4	02C12 A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-122/2251 2	.5" SOLENOID WITHDRAW DRIVE VALVE R 522 K2/8.4	02C12 A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-122/2255 2	.5" SOLENOID WITHDRAW DRIVE VALVE R 522 K2/8.4	02C12 A610		B	1 3	1 1	0 2			02		Y	HVA1709662A

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EQUIPMENT NO. LV	DESCRIPTION PLANT LOCATION	CONTRACT MFG	QID	QS	USE MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
CRD-V-122/2259 2	.5" SOLENOID WITHDRAW DRIVE VALVE R 522 K2/8.4	02C12 A610		B	1 3 HVA1709662A	1 1	0 2			02		Y
CRD-V-122/2603 2	.5" SOLENOID WITHDRAW DRIVE VALVE R 522 L5/8.4	02C12 A610		B	1 3 HVA1709662A	1 1	0 2			02		Y
CRD-V-122/2607 2	.5" SOLENOID WITHDRAW DRIVE VALVE R 522 L5/8.4	02C12 A610		B	1 3 HVA1709662A	1 1	0 2			02		Y
CRD-V-122/2611 2	.5" SOLENOID WITHDRAW DRIVE VALVE R 522 L5/8.4	02C12 A610		B	1 3 HVA1709662A	1 1	0 2			02		Y
CRD-V-122/2615 2	.5" SOLENOID WITHDRAW DRIVE VALVE R 522 L5/8.4	02C12 A610		B	1 3 HVA1709662A	1 1	0 2			02		Y
CRD-V-122/2619 2	.5" SOLENOID WITHDRAW DRIVE VALVE R 522 L5/8.4	02C12 A610		B	1 3 HVA1709662A	1 1	0 2			02		Y
CRD-V-122/2623 2	.5" SOLENOID WITHDRAW DRIVE VALVE R 522 L5/8.4	02C12 A610		B	1 3 HVA1709662A	1 1	0 2			02		Y
CRD-V-122/2627 2	.5" SOLENOID WITHDRAW DRIVE VALVE R 522 L5/8.4	02C12 A610		B	1 3 HVA1709662A	1 1	0 2			02		Y
CRD-V-122/2631 2	.5" SOLENOID WITHDRAW DRIVE VALVE R 522 L5/8.4	02C12 A610		B	1 3 HVA1709662A	1 1	0 2			02		Y
CRD-V-122/2635 2	.5" SOLENOID WITHDRAW DRIVE VALVE R 522 K2/8.4	02C12 A610		B	1 3 HVA1709662A	1 1	0 2			02		Y
CRD-V-122/2639 2	.5" SOLENOID WITHDRAW DRIVE VALVE R 522 K2/8.4	02C12 A610		B	1 3 HVA1709662A	1 1	0 2			02		Y
CRD-V-122/2643 2	.5" SOLENOID WITHDRAW DRIVE VALVE R 522 K2/8.4	02C12 A610		B	1 3 HVA1709662A	1 1	0 2			02		Y
CRD-V-122/2647 2	.5" SOLENOID WITHDRAW DRIVE VALVE R 522 K2/8.4	02C12 A610		B	1 3 HVA1709662A	1 1	0 2			02		Y
CRD-V-122/2651 2	.5" SOLENOID WITHDRAW DRIVE VALVE R 522 K2/8.4	02C12 A610		B	1 3 HVA1709662A	1 1	0 2			02		Y
CRD-V-122/2655 2	.5" SOLENOID WITHDRAW DRIVE VALVE R 522 K2/8.4	02C12 A610		B	1 3 HVA1709662A	1 1	0 2			02		Y
CRD-V-122/2659 2	.5" SOLENOID WITHDRAW DRIVE VALVE R 522 K2/8.4	02C12 A610		B	1 3 HVA1709662A	1 1	0 2			02		Y
CRD-V-122/3003 2	.5" SOLENOID WITHDRAW DRIVE VALVE R 522 L5/8.4	02C12 A610		B	1 3 HVA1709662A	1 1	0 2			02		Y
CRD-V-122/3007 2	.5" SOLENOID WITHDRAW DRIVE VALVE R 522 L5/8.4	02C12 A610		B	1 3 HVA1709662A	1 1	0 2			02		Y
CRD-V-122/3011 2	.5" SOLENOID WITHDRAW DRIVE VALVE R 522 L5/8.4	02C12 A610		B	1 3 HVA1709662A	1 1	0 2			02		Y
CRD-V-122/3015 2	.5" SOLENOID WITHDRAW DRIVE VALVE R 522 L5/8.4	02C12 A610		B	1 3 HVA1709662A	1 1	0 2			02		Y
CRD-V-122/3019 2	.5" SOLENOID WITHDRAW DRIVE VALVE R 522 L5/8.4	02C12 A610		B	1 3 HVA1709662A	1 1	0 2			02		Y
CRD-V-122/3023 2	.5" SOLENOID WITHDRAW DRIVE VALVE R 522 L5/8.4	02C12 A610		B	1 3 HVA1709662A	1 1	0 2			02		Y
CRD-V-122/3027 2	.5" SOLENOID WITHDRAW DRIVE VALVE R 522 L5/8.4	02C12 A610		B	1 3 HVA1709662A	1 1	0 2			02		Y
CRD-V-122/3031 2	.5" SOLENOID WITHDRAW DRIVE VALVE R 522 K2/3.7	02C12 A610		B	1 3 HVA1709662A	1 1	0 2			02		Y
CRD-V-122/3035	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TH	HL
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-122/3039	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-122/3043	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-122/3047	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-122/3051	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-122/3055	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-122/3059	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-122/3403	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-122/3407	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-122/3411	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-122/3415	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-122/3419	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-122/3423	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-122/3427	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-122/3431	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-122/3435	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-122/3439	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-122/3443	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-122/3447	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-122/3451	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-122/3455	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-122/3459	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-122/3803	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-122/3807	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-122/3811	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE	TEST / MFG MODEL NO.	ANL	F/O	C	FREQ	TM	HL
CRD-V-122/3815	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610				HVA1709662A						
CRD-V-122/3819	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610				HVA1709662A						
CRD-V-122/3823	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610				HVA1709662A						
CRD-V-122/3827	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610				HVA1709662A						
CRD-V-122/3831	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		A	1 3							
2	R 522 K2/3.7	A610				HVA1705662A						
CRD-V-122/3835	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610				HVA1709662A						
CRD-V-122/3839	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610				HVA1709662A						
CRD-V-122/3843	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610				HVA1709662A						
CRD-V-122/3847	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610				HVA1709662A						
CRD-V-122/3851	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610				HVA1709662A						
CRD-V-122/3855	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610				HVA1709662A						
CRD-V-122/3859	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610				HVA1709662A						
CRD-V-122/4203	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610				HVA1709662A						
CRD-V-122/4207	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610				HVA1709662A						
CRD-V-122/4211	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610				HVA1709662A						
CRD-V-122/4215	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610				HVA1709662A						
CRD-V-122/4219	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610				HVA1709662A						
CRD-V-122/4223	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610				HVA1709662A						
CRD-V-122/4227	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610				HVA1709662A						
CRD-V-122/4231	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610				HVA1709662A						
CRD-V-122/4235	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610				HVA1709662A						
CRD-V-122/4239	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610				HVA1709662A						
CRD-V-122/4243	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610				HVA1709662A						
CRD-V-122/4247	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610				HVA1709662A						
CRD-V-122/4251	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-122/4255	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-122/4259	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-122/4607	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-122/4611	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-122/4615	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-122/4619	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-122/4623	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-122/4627	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-122/4631	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-122/4635	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-122/4639	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-122/4643	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-122/4647	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-122/4651	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-122/4655	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-122/5011	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-122/5015	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-122/5019	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-122/5023	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-122/5027	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-122/5031	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-122/5035	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-122/5039	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-122/5043	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
CRD-V-122/5047	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-122/5051	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-122/5415	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-122/5419	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-122/5423	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-122/5427	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-122/5431	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-122/5435	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-122/5439	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-122/5443	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-122/5447	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-122/5819	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-122/5823	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-122/5827	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-122/5831	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-122/5835	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-122/5839	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-122/5843	.5" SOLENOID WITHDRAW DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-123/0219	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-123/0223	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-123/0227	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-123/0231	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-123/0235	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-123/0239	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-123/0243	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y

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EQUIPMENT NO.	LV	DESCRIPTION	PLANT LOCATION	CONTRACT	MFG	QID	QS	USE	TEST	ANL	F/O	C	FREQ	TM	HL	MFG MODEL NO.
	2		R 522 K2/8.4		A610											HVA1709662A
CRD-V-123/0615	2	.5" SOLENOID INSERT DRIVE VALVE	R 522 L5/8.4	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-123/0619	2	.5" SOLENOID INSERT DRIVE VALVE	R 522 L5/8.4	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-123/0623	2	.5" SOLENOID INSERT DRIVE VALVE	R 522 L5/8.4	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-123/0627	2	.5" SOLENOID INSERT DRIVE VALVE	R 522 L5/8.4	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-123/0631	2	.5" SOLENOID INSERT DRIVE VALVE	R 522 L5/8.4	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-123/0635	2	.5" SOLENOID INSERT DRIVE VALVE	R 522 K2/8.4	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-123/0639	2	.5" SOLENOID INSERT DRIVE VALVE	R 522 K2/8.4	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-123/0643	2	.5" SOLENOID INSERT DRIVE VALVE	R 522 K2/8.4	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-123/0647	2	.5" SOLENOID INSERT DRIVE VALVE	R 522 K2/8.4	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-123/1011	2	.5" SOLENOID INSERT DRIVE VALVE	R 522 L5/8.4	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-123/1015	2	.5" SOLENOID INSERT DRIVE VALVE	R 522 L5/8.4	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-123/1019	2	.5" SOLENOID INSERT DRIVE VALVE	R 522 L5/8.4	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-123/1023	2	.5" SOLENOID INSERT DRIVE VALVE	R 522 L5/8.4	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-123/1027	2	.5" SOLENOID INSERT DRIVE VALVE	R 522 L5/8.4	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-123/1031	2	.5" SOLENOID INSERT DRIVE VALVE	R 522 L5/8.4	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-123/1035	2	.5" SOLENOID INSERT DRIVE VALVE	R 522 K2/8.4	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-123/1039	2	.5" SOLENOID INSERT DRIVE VALVE	R 522 K2/8.4	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-123/1043	2	.5" SOLENOID INSERT DRIVE VALVE	R 522 K2/8.4	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-123/1047	2	.5" SOLENOID INSERT DRIVE VALVE	R 522 K2/8.4	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-123/1051	2	.5" SOLENOID INSERT DRIVE VALVE	R 522 K2/8.4	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-123/1407	2	.5" SOLENOID INSERT DRIVE VALVE	R 522 L5/8.4	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-123/1411	2	.5" SOLENOID INSERT DRIVE VALVE	R 522 L5/8.4	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-123/1415	2	.5" SOLENOID INSERT DRIVE VALVE	R 522 L5/8.4	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A
CRD-V-123/1419	2	.5" SOLENOID INSERT DRIVE VALVE	R 522 L5/8.4	02C12	A610		B	1 3	1 1	0 2			02		Y	HVA1709662A

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE	TEST / MFG MODEL NO.	ANL	F/O	C	FREQ	TM	HL
CRD-V-123/1423	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610				HVA1709662A						
CRD-V-123/1427	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610				HVA1709662A						
CRD-V-123/1431	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610				HVA1709662A						
CRD-V-123/1435	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610				HVA1709662A						
CRD-V-123/1439	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610				HVA1709662A						
CRD-V-123/1443	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610				HVA1709662A						
CRD-V-123/1447	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610				HVA1709662A						
CRD-V-123/1451	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610				HVA1709662A						
CRD-V-123/1455	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610				HVA1709662A						
CRD-V-123/1803	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610				HVA1709662A						
CRD-V-123/1807	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610				HVA1709662A						
CRD-V-123/1811	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610				HVA1709662A						
CRD-V-123/1815	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610				HVA1709662A						
CRD-V-123/1819	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610				HVA1709662A						
CRD-V-123/1823	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610				HVA1709662A						
CRD-V-123/1827	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610				HVA1709662A						
CRD-V-123/1831	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610				HVA1709662A						
CRD-V-123/1835	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610				HVA1709662A						
CRD-V-123/1839	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610				HVA1709662A						
CRD-V-123/1843	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610				HVA1709662A						
CRD-V-123/1847	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610				HVA1709662A						
CRD-V-123/1851	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610				HVA1709662A						
CRD-V-123/1855	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610				HVA1709662A						
CRD-V-123/1859	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610				HVA1709662A						
CRD-V-123/2203	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-123/2207	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-123/2211	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-123/2215	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-123/2219	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-123/2223	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-123/2227	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-123/2231	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-123/2235	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-123/2239	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-123/2243	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-123/2247	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-123/2251	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-123/2255	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-123/2259	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-123/2603	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-123/2607	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-123/2611	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-123/2615	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-123/2619	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-123/2623	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-123/2627	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-123/2631	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-123/2635	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/6.4	A610			HVA1709662A							
CRD-V-123/2639	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610			HVA1709662A							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TH	HL
CRD-V-123/2643	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-123/2647	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-123/2651	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-123/2655	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-123/2659	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/8.4	A610			HVA1709662A							
CRD-V-123/3003	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-123/3007	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-123/3011	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-123/3015	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-123/3019	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-123/3023	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-123/3027	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/8.4	A610			HVA1709662A							
CRD-V-123/3031	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-123/3035	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-123/3039	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-123/3043	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-123/3047	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-123/3051	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-123/3055	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-123/3059	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-123/3403	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-123/3407	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-123/3411	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-123/3415	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-123/3419	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE	TEST / MFG MODEL NO.	ANL	F/O	C	FREQ	TH	HL
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-123/3423	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-123/3427	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-123/3431	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-123/3435	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-123/3439	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-123/3443	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-123/3447	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-123/3451	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-123/3455	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-123/3459	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-123/3803	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-123/3807	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-123/3811	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-123/3815	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-123/3819	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-123/3823	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-123/3827	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-123/3831	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-123/3835	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-123/3839	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-123/3843	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-123/3847	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-123/3851	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-123/3855	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
CRD-V-123/3859	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-123/4203	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-123/4207	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-123/4211	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-123/4215	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-123/4219	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-123/4223	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-123/4227	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-123/4231	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-123/4235	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-123/4239	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-123/4243	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-123/4247	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-123/4251	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-123/4255	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-123/4259	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-123/4607	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-123/4611	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-123/4615	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-123/4619	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-123/4623	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-123/4627	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-123/4631	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-123/4635	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-123/4639	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TH	HL
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-123/4643	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-123/4647	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-123/4651	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-123/4655	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-123/5011	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-123/5015	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-123/5019	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-123/5023	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-123/5027	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-123/5031	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-123/5035	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-123/5039	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-123/5043	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-123/5047	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-123/5051	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-123/5415	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-123/5419	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-123/5423	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-123/5427	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-123/5431	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-123/5435	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-123/5439	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-123/5443	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-123/5447	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QIC	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TH	HL
CRD-V-123/5819	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-123/5823	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709662A							
CRD-V-123/5827	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 L5/3.7	A610			HVA1709652A							
CRD-V-123/5831	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-123/5835	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1705662A							
CRD-V-123/5839	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-123/5843	.5" SOLENOID INSERT DRIVE VALVE	02C12		B	1 3	1 1	0 2			02		Y
2	R 522 K2/3.7	A610			HVA1709662A							
CRD-V-123A	1.5" GATE CRD-P-1A DRAIN	215			2 0							
2	R 423 V.6/3.8	B350			DWG 38040-15J							
CRD-V-123B	1.5" GATE CRD-P-1B DRAIN	215			2 0							
2	R 423 V.6/4.7	B350			DWG 38040-15J							
CRD-V-7A	.75"GTE.(SVSO)VALVE CRD FLOW	02			3 0							
2	R 523 N.3/3.5	G080			DWG 112C2576G							
CRD-V-7B	.75"GATE VALVE CRD FLOW	02			3 0							
2	R 523 N.3/3.5	G080			DWG 112C2576G							
CSP-AO-1	AIR OPERATOR FOR CSP-V-1	68		R	2 3							
2	R 508 V.0/7.7											
CSP-AO-10	AIR OPERATOR FOR CSP-V-10	68			2 3							
2	R 491 151 DEG AZ											
CSP-AO-2	AIR OPERATOR FOR CSP-V-2	68		R	2 3							
2	R 508 7.7/N.0											
CSP-AO-3	AIR OPERATOR FOR CSP-V-3	68	018001	R	2 3							
2	R 481 M.6/7.6	M322			A838							
CSP-AO-4	AIR OPERATOR FOR CSP-V-4	68	018001	R	2 3							
2	R 478 M.6/7.6	M322			A838							
CSP-AO-5	AIR OPERATOR FOR CSP-V-5	68	018001	R	2 3							
2	R 475 M.7/8.3	M322			A838							
CSP-AO-6	AIR OPERATOR FOR CSP-V-6	68		R	2 3							
2	R 480 V.5/7.7											
CSP-AO-7	AIR OPERATOR FOR CSP-V-7	68			2 3							
2	R 475 N.5/7.7											
CSP-AO-8	AIR OPERATOR FOR CSP-V-8	68			2 3							
2	R 484 0 DEG AZ											
CSP-AO-9	AIR OPERATOR FOR CSP-V-9	68		R	2 3							
2	R 490 M.9/5.1											
CSP-V-1	30" BFLY CONTAINMENT ISOL VALVE	69	361104	M	2 3		0 1					N
2	R 508 M.5/7.6	B250			A-206763							
CSP-V-1+	COMPOSITE FOR CSP-V-1	68			2 3		0 1					
1	M.5/7.6											
CSP-V-10	24" VACUUM RELIEF VALVE	213	361901	Q	2 3							
2	R 491 151 DEG AZ	B250			CV1-L							
CSP-V-10+	COMPOSITE FOR CSP-V-10				2 3							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE TEST / MFG MODEL NO.	AVL	F/O	C	FREQ	TM	HL
1	R 491 151 DEG AZ										
CSP-V-2	30" BFLY CONTAINMENT ISOL VALVE	68	361104	M	2 3	0 1					N
2	R 509 M.5/7.4	B250			A-206765						
CSP-V-2+	COMPOSITE FOR CSP-V-2	68			2 3	0 1					
1	M.5/7.4										
CSP-V-3	24" BFLY CONTAINMENT ISOL VALVE	68	361105	M	2 3	0 1					N
2	R 481 M.6/7.6	B250			DWG A20764						
CSP-V-3+	COMPOSITE FOR CSP-V-3	68			2 3						
1	M.6/7.6										
CSP-V-4	24" BFLY CONTAINMENT ISOL VALVE	68	361105	M	2 3	0 1					N
2	R 478 7.6/M.6	B250			DWG A20764						
CSP-V-4+	COMPOSITE FOR CSP-V-4	68			2 3						
1	M.6/7.6										
CSP-V-5	24" BFLY CONTAINMENT ISOL VALVE	68	361106	M	2 3	0 1					N
2	R 475 M.7/8.3	B250			DWG A20765						
CSP-V-5+	COMPOSITE FOR CSP-V-5	68			2 3						
1	R 475 M.7/8.3										
CSP-V-6	24" BFLY CONTAINMENT ISOL VALVE	68	361106	M	2 3	0 1					N
2	R 480 M.5/7.7	B250			A-206765						
CSP-V-6+	COMPOSITE FOR CSP-V-6	68			2 3						
1	M.6/6.1										
CSP-V-7	24" CHECK VAC RELIEF TO SUPP CHAMB	213	361901	Q	2 3						
2	R 475 M.5/7.7	B250			CV1-L						
CSP-V-7+	COMPOSITE FOR CSP-V-7				2 3						
1	R 475 N.5/7.7										
CSP-V-8	24" VACUUM RELIEF VALVE	213	361901	Q	2 3						
2	0 DEG AZ	B250			CV1-L						
CSP-V-8+	COMPOSITE FOR CSP-V-8				2 3						
1	R 484 0 DEG AZ										
CSP-V-9	24"BFLY VAC RELIEF TO SUPP CHAMB	68	361106	M	2 3	0 1					Y
2	R 490 M.9/5.1	B250			DWG A20765						
CSP-V-9+	COMPOSITE FOR CSP-V-9	68			2 3						
1	R 490 M.9/5.1										
CVB-V-1A	24" CHK VAC RELIEF TO DRYWELL	213	361901	M	2 0	0 1				P	Y
2	C 492 6 D AZ R35	A415			CV1-L/TYPE						
CVB-V-1A+					2 0						
1	C 492 6 D AZ R35										
CVB-V-1B	24" CHK VAC RELIEF TO DRYWELL	213	361901	M	2 0	0 1				P	Y
2	C 492 6 D AZ R35	A415			CV1-L/TYPE						
CVB-V-1B+					2 0						
1	C 492 6 D AZ R35										
CVB-V-1C	24" CHK VAC RELIEF TO DRYWELL	213	361901	M	2 0	0 1				P	Y
2	C 492 27 D AZ R35	A415			CV1-L/TYPE						
CVB-V-1C+					2 0						
1	C 492 27 D AZ R35										
CVB-V-1D	24" CHK VAC RELIEF TO DRYWELL	213	361901	M	2 0	0 1				P	Y
2	C 492 27 D AZ R35	A415			CV1-L/TYPE						
CVB-V-1D+					2 0						
1	C 492 27 D AZ R35										

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
CVB-V-1E	24" CHK VAC RELIEF TO DRYWELL	213	361901	M	2 0		0 1				P	Y
2	C 492 90 D AZ R35	A415			CV1-L-TYPE							
CVB-V-1E+					2 0							
1	C 492 90 D AZ R35											
CVB-V-1F	24" CHK VAC RELIEF TO DRYWELL	213	361901	M	2 0		0 1				P	Y
2	C 492 90 D AZ R35	A415			CV1-L-TYPE							
CVB-V-1F+					2 0							
1	C 492 90 D AZ R35											
CVB-V-1G	24" CHK VAC RELIEF TO DRYWELL	213	361901	M	2 0		0 1				P	Y
2	C 441 153 D AZ R35	A415			CV1-L-TYPE							
CVB-V-1G+					2 0							
1	C 441 153 D AZ R35											
CVB-V-1H	24.0"CHK. VAC.RELIEF TO DRYWELL	213	361901	M	2 0		0 1				P	Y
2	C 492 153 D AZ R35	A415			CV1-L-TYPE							
CVB-V-1H+					2 0							
1	C 492 153 D AZ R35											
CVB-V-1J	24" CHECK VAC RELIEF TO DRYWELL	213	361901	M	2 0		0 1				P	Y
2	C 492 175 D AZ R35	A415			CV1-L-TYPE							
CVB-V-1J+					2 0							
1	C 492 175 D AZ R35											
CVB-V-1K	24" CHK VAC RELIEF TO DRYWELL	213	361901	M	2 0		0 1				P	Y
2	C 492 175 D AZ R35	A415			CV1-L-TYPE							
CVB-V-1K+					2 0							
1	C 492 175 D AZ R35											
CVB-V-1L	24" CHECK VAC RELIEF TO DRYWELL	213	361901	M	2 0		0 1				P	Y
2	C 492 196 D AZ R35	A415			CV1-L-TYPE							
CVB-V-1L+					2 0							
1	C 492 196 D AZ R35											
CVB-V-1M	24" CHECK VAC RELIEF TO DRYWELL	213	361901	M	2 0		0 1				P	Y
2	C 492 196 D AZ R35	A415			CV1-L-TYPE							
CVB-V-1M+					2 0							
1	C 492 196 D AZ R35											
CVB-V-1N	24" CHECK VAC RELIEF TO DRYWELL	213	361901	M	2 0		0 1				P	Y
2	C 492 260 D AZ R35	A415			CV1-L-TYPE							
CVB-V-1N+					2 0							
1	C 492 260 D AZ R35											
CVB-V-1P	24" CHECK VAC RELIEF TO DRYWELL	213	361901	M	2 0		0 1				P	Y
2	C 492 260 D AZ R35	A415			CV1-L-TYPE							
CVB-V-1P+					2 0							
1	C 492 260 D AZ R35											
CVB-V-1Q	24" CHECK VAC RELIEF TO DRYWELL	213	361901	M	2 0		0 1				P	Y
2	C 492 344 D AZ R35	A415			CV1-L-TYPE							
CVB-V-1Q+	COMPOSITE OF CVB-V-1Q				2 0							
1	C 492 344 D AZ R35											
CVB-V-1R	24" CHECK VAC RELIEF TO DRYWELL	213	361901	M	2 0		0 1				P	Y
2	C 492 344 D AZ R35	A415			CV1-L-TYPE							
CVB-V-1R+					2 0							
1	C 492 344 D AZ R35											
CVB-V-1S	24" CHK VAC RELIEF TO DRYWELL	213	361901	M	2 0		0 1				P	Y

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE TEST / MFG MODEL NO.	ANL	F/O	C	FREQ	TM	NL
2	C 492 281 D AZ R35	A415			CV1-L-TYPE						
CVB-V-1S+					2 0						
1	C 492 281 D AZ R35										
CVB-V-1T	24" CHK VAC RELIEF T) DRYWELL	213	361901	N	2 0	0 1				P	Y
2	C 492 281 D AZ R35	A415			CV1-L-TYPE						
CVB-V-1T+					2 0						
1	C 492 281 D AZ R35										
DCW-P-1A1	COOLING WATER TO DIESEL ENG A1	53	233001	N	4 0						N
2	D 441 Q/6.1	S407			P 8347007						
DCW-P-1A2	COOLING WATER TO DIESEL ENG A2	53	233001	N	4 0						N
2	D 441 R/6.1	S407			P 8347007						
DCW-P-1B1	COOLING WATER TO DIESEL ENG B1	53	233001	N	4 0						N
2	D 441 Q/7.8	S407			P 8347007						
DCW-P-1B2	COOLING WATER TO DIESEL ENG-B2	53	233001	N	4 0						N
2	D 441 R/7.8	S407			P 8347007						
DCW-P-1C	HPCS ENGINE DRIVER WATER PUMP	02	233001	N	4 0						
2	D 441 Q/5.1	S407			P 8347007						
DCW-P-2A1	COOLING WATER TO DIESEL ENG 1A	53	233002	N	4 0						N
2	D 441 Q/6.1	S407			P 8249001						
DCW-P-2A2	COOLING WATER TO DIESEL ENG A2	53	233002	N	4 0						N
2	D 441 R/6.1	S407			P 8249001						
DCW-P-2B1	COOLING WATER TO DIESEL ENG B1	53	233002	N	4 0						N
2	D 441 Q/7.8	S407			P 8249001						
DCW-P-2B2	COOLING WATER TO DIESEL ENG B2	53	233002	N	4 0						N
2	D 441 R/7.8	S407			P 8249001						
DCW-P-2C	HPCS ENGINE DRIVEN WATER PUMP	53	233002	N	4 0						N
2	D 441 Q/5.1	S407			P 8249001						
DEA-FN-11	EXHAUST FAN LOOP A D.G. ROOM	22A	145003	N	4 3	0 1			70		N
2	D 455 P3/6.8	J127			48-26.5 1170 A-P						
DEA-FN-11+	EXHAUST FAN D.G.RM LOOPA (DIV 1)				4 3						
1	D 455 P.3/6.8										
DEA-FN-12	EXHAUST FAN (DAY TANK ROOM)	28	145014	N	4 3	0 1			99+		N
2	D 441 Q.9/7.0	B515			745-9789						
DEA-FN-12+	EXHAUST FAN (DAY TK ROOM-LOOPA)				4 3						
1	D 441 Q.9/7.0										
DEA-FN-13	EXHAUST FAN (LOOP "A" PUMP ROOM)	28	145014	N	4 3	0 1			99+		N
2	D 441 P.7/3.4	B515			745-9789						
DEA-FN-13+	EXHAUST FAN (LOOP A PUMP ROOM)				4 3						
1	D 441 P.7/3.4										
DEA-FN-21	EXHAUST FAN LOOP B D.G. ROOM	22A	145003	N	4 3	0 1			70		N
2	D 455 P.3/8.4	J127			48-26.5 1170 A-P						
DEA-FN-21+	EXHAUST FAN D.G.ROOM (LOOP B) DIV2				4 3						
1	D 455 P.3/8.4										
DEA-FN-22	EXHAUST FAN (DAY TANK ROOM D-111)	28	145014	N	4 3	0 1			99+		N
2	D 441 Q.1/9.3	B515			745-9789						
DEA-FN-22+	EXHAUST FAN (LOOP B DAY TK ROOM)				4 3						
1	D 441 Q.1/9.3										
DEA-FN-23	EXHAUST FAN (LOOP "B" OIL ROOM)	28	145014	N	4 3	0 1			99+		N
2	D 441 P.7/3.4	B515			745-9789						

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EQUIPMENT NO. LV	DESCRIPTION PLANT LOCATION	CONTRACT MFG	QID	QS	USE TEST MFG MODEL NO.	ANL	F/O	C	FREQ	TM	HL
DEA-FN-23+ 1	EXHAUST FAN (LOO? 3 PUMP ROOM) D 441 P.7/3.4				4 3						
DEA-FN-31 2	EXHAUST FAN HPCS D.G. ROOM D 455 P.3/4.0	22A J127	145003	N	4 3 48-26.5 1170 A-P	0 1			70		N
DEA-FN-31+ 1	EXHAUST FAN HPCS DIESEL ROOM (DIV3 D 455 P.3/4.0				4 3						
DEA-FN-32 2	EXHAUST FAN (DAY TANK ROOM) D 455 Q.8/3.9	28 B515	145014	N	4 3 745-9789	0 1			99+		N
DEA-FN-32+ 1	EXHAUST FAN (HPCS ROOM DAY TK ROOM D 455 Q.8/3.9				4 3						
DEA-FN-33 2	EXHAUST FAN (HPCS OIL PUMP ROOM) D 441 R.3/3.4	28 B515	145014	N	4 3 745-9789	0 1			99+		N
DEA-FN-33+ 1	EXHAUST FAN (DIV 3 PUMP ROOM) D 441 R.3/3.4				4 3						
DEA-FN-51 2	EXHAUST D.G. BLDG. CORRIDOR D 455 P.1/3.8	22A J127	145005	A	4 3 18-14-1750 SER.1000	0 1			48		N
DEA-FN-51+ 1	EXHAUST FAN D.G. BLDG. CORRIDOR D 455 P.1/3.8				4 3						
DEA-FN-52 2	EXH.FAN STORAGE ROOM TO WASTE BLDG D 467 4.0/9.5	22A J127	145005	A	4 3 18-14-1750 SER.1000	0 1			48		N
DG-ENG-1A 2	UNIT A DIESEL GENERATOR ENG #1 D 441 R/5.6	53 E160	112001	N	4 0 20-645-E4						N
DG-ENG-1A+ 1	DIESEL GENERATOR DIVI D 441 R/5.6	A220			4 0 20-645-E4						
DG-ENG-1B 2	UNIT B DIESEL GENERATOR ENG. #1 D 441 R/7.4	53 E160	112001	N	4 0 20-645-E4						N
DG-ENG-1B+ 1	DIESEL GENERATOR DIV 2 D 441 Q/5.6	E160			4 0 20-645-E4						
DG-ENG-1C 2	DIESEL ENGINE FOR HPCS SYSTEM D 441 Q.8/5.0	02E22 G082	112001	R	4 0 20-624-E4						
DG-ENG-1C+ 1	DIESEL GENERATOR HPCS SYSTEM D 441 R/7.4	E160			4 0 20-624-E4						
DG-ENG-2A 2	UNIT A DIESEL GENERATOR ENG.#2 D 441 Q/5.6	53 E160	112001	N	4 0 20-624-E4						N
DG-ENG-2B 2	UNIT B DIESEL GENERATOR ENG. #2 D 441 Q/7.4	53 E160	112001	N	4 0 20-645-E4						N
DLO-?-1A1 2	SCAVENGING OIL PUMP DG-ENG-1A D 441 Q.0/6.1	53 S407	233018	N	4 0 P 8252842						N
DLO-?-1A2 2	SCAVENGING LUBE OIL PUMP DE-ENG-2A D 441 R.0/6.1	53 S407	233018	N	4 0 P 8252842						N
DLO-?-1B1 2	SCAVENGING LUBE OIL PUMP DG-ENG-1B D 441 Q.0/7.8	53 S407	233018	N	4 0 P 8252842						N
DLO-P-1B2 2	SCAVENGING LUBE OIL PUMP DG-ENG-2B D 441 R.0/7.8	53 S407	233018	N	4 0 P 8252842						N
DLO-?-2A1 2	SOAK-BACK LUBE OIL PUMP DG-ENG-1A D 441 Q/6	53 S407	233004	N	4 0 P 8336678						N
DLO-?-2A2 2	SOAK-BACK LUBE OIL PUMP DG-ENG-2A D 441 R2/6	53 S407	233004	N	4 0 P 8336678						N
DLO-?-2B1	SOAK-BACK LUBE OIL PUMP DG-ENG-1B	53	233004	N	4 0						N

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE TEST / MFG MODEL NO.	ANL	F/O	C	FREQ	TM	HL
2	D 441 Q/8	S407			P 8336678						
DLO-P-2B2	SOAK-BACK LUBE OIL PUMP DG-ENG-2B	53	233004	N	4 0						N
2	D 441 R2/8	S407			P 8336678						
DLO-P-3A1	CIRCULATE LUBE OIL PUMP DG-ENG-1A	53	233019	N	4 0						N
2	D 441 Q/6.1	V125			GB920-5089635						
DLO-P-3A2	CIRCULATE LUBE OIL PUMP DG-ENG-2A	53	233019	N	4 0						N
2	D 441 R/6.1	V125			GB920-5089635						
DLO-P-3B1	CIRCULATE LUBE OIL PUMP DG-ENG-1B	53	233019	N	4 0						N
2	D 441 Q/7.8	V125			GB920-5089635						
DLO-P-3B2	CIRCULATE LUBE OIL PUMP DG-ENG-2B	53	233019	N	4 0						N
2	D 441 R/7.8	V125			GB920-5089635						
DLO-P-4A1	MAIN LUBE PUMP DG-ENG-A1	53	233019	N	4 0						N
2	D 441 Q.0/6.1	S407			P 8360554						
DLO-P-4A2	MAIN LUBE PUMP DG-ENG-B1	53	233019	N	4 0						N
2	D 441 R.0/6.1	S407			P 8360554						
DLO-P-4B1	MAIN LUBE PUMP DG-ENG-B1	53	233019	N	4 0						N
2	D 441 Q.0/7.8	S407			P 8360554						
DLO-P-4B2	MAIN LUBE PUMP DG-ENG-B2	53	233019	N	4 0						N
2	D 441 R.0/7.8	S407			P 8360554						
DLO-P-5A1	PISTON COOLING PUMP DG-ENG-A1	53	233019	N	4 0						N
2	D 441 Q.0/6.1	S407			P 8360554						
DLO-P-5A2	PISTON COOLING PUMP DG-ENG-A2	53	233019	N	4 0						N
2	D 441 R.0/6.1	S407			P 8360554						
DLO-P-5B1	PISTON COOLING PUMP DG-ENG-B1	53	233019	N	4 0						N
2	D 441 Q.0/7.8	S407			P 8360554						
DLO-P-5B2	PISTON COOLING PUMP DG-ENG-B2	53	233019	N	4 0						N
2	D 441 Q.0/7.8	S407			P 8360554						
DLO-P-6	HPCS AUX.LUBE OIL TURBO.FILTR.PUMP	02		R	4 0						
2	D 441 Q.5/5.0										
DLO-P-7	HPCS OIL PRESS.TO TURBO.CHARGER	02		R	4 0						
2	D 441 Q.5/5.0										
DLO-P-8	HPCS PISTON COOLING PUMP	02	233019	R	4 0						
2	D 441 Q.5/5.0	A183			8360537						
DLO-P-9	HPCS SCAVENGING PUMP	02		R	4 0						
2	D 441 Q.5/5.0										
DMA-AD-11/1	(MO) INTAKE DAMPER DMA-FN-11	67	011003	M	4 3	0 1					N
2	D 455 Q5/7.2	P295			748744						
DMA-AD-11/1+	DIESEL AIR DAMPER				4 3						
1	D 455 Q.5/7.2										
DMA-AD-11/2	DIESEL AIR DAMPER	67	011003	M	4 3	0 1					N
2	D 455 Q5/7.2	P295			748744						
DMA-AD-11/2+	DIESEL AIR DAMPER										
1	D 455 Q.5/7.2										
DMA-AD-12/1	(MO) INTAKE DAMPER DMA-FN-12	67	011003	M	4 3	0 1					N
2	D 455 P5/7.2	P295			748741						
DMA-AD-12/1+	DIESEL AIR DAMPER				4 3						
1	D 455 P.5/7.2										
DMA-AD-12/2	(EHO) INTAKE DAMPER DMA-FN-12	67	011003	M	4 3	0 1					N
2	D 455 P5/7.2	P295			748742						

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
DMA-AD-12/2+	DIESEL AIR DAMPER				4 3							
1	D 455 P.5/7.2											
DMA-AD-21/1	(MO) INTAKE DAMPER DMA-FN-21	67	011003	M	4 3		0 1					N
2	D 455 Q5/9.2	P295			748743							
DMA-AD-21/1+	DIESEL AIR DAMPER				4 3							
1	D 455 Q.5/9.2											
DMA-AD-21/2	(EHO) INTAKE DAMPER DMA-FN-21	67	011003	M	4 3		0 1					N
2	D 455 Q5/9.2	P295			748744							
DMA-AD-21/2+	DIESEL AIR DAMPER				4 3							
1	D 455 Q.5/9.2											
DMA-AD-22/1	(MO) INTAKE DAMPER DMA-FN-22	67	011003	M	4 3		0 1					N
2	D 455 P5/9.2	P295			748741							
DMA-AD-22/1+	DIESEL AIR DAMPER				4 3							
1	D 455 P.5/9.2											
DMA-AD-22/2	(EHO) INTAKE DAMPER DMA-FN-22	67	011003	M	4 3		0 1					N
2	D 455 P5/9.2	P295			748742							
DMA-AD-22/2+	DIESEL AIR DAMPER				4 3							
1	D 455 P.5/9.2											
DMA-AD-31/1	(MO) INTAKE DAMPER DMA-FN-31	67	011003	M	4 3		0 1					N
2	D 455 Q5/4.2	P295			748743							
DMA-AD-31/1+	DIESEL AIR DAMPER				4 3							
1	D 455 Q.5/4.2											
DMA-AD-31/2	(EHO) AUTO INTAKE DAMPER DMA-FN-31	67	011003	M	4 3		0 1					N
2	D 455 Q5/4.2	P295			748744							
DMA-AD-31/2+	DIESEL AIR DAMPER				4 3							
1	D 455 Q.5/4.2											
DMA-AD-32/1	(MO) INTAKE DAMPER DMA-FN-32	67	011003	M	4 3		0 1					N
2	D 455 P5/4.2	P295			748741							
DMA-AD-32/1+	DIESEL AIR DAMPER				4 3							
1	D 455 P.5/4.2											
DMA-AD-32/2	(EHO) INTAKE DAMPER DMA-FN-32	67	011003	M	4 3		0 1					N
2	D 455 P5/4.2	P295			748742							
DMA-AD-32/2+	DIESEL AIR DAMPER				4 3							
1	D 455 P.5/4.2											
DMA-AD-51	(MO) INTAKE DAMPER DMA-FN-51	67		N	4 3		0 1					N
2	D 441 R.5/9.7											
DMA-AD-51+	DIESEL AIR DAMPER				4 3							
1												
DMA-AD-53	(MO) EXHAUST DAMPER DMA-FN-51	67	011001	N	4 3		0 1					N
2	D 464 P.1/9.5	P014			630-N-31408							
DMA-AD-53+	DIESEL AIR DAMPER				4 3							
1	D 464 P.1/9.5											
DMA-AH-11	SUPPLY DIV I EM. D-G ROOM COOLING	67	012003	M	4 3		0 1			16		N
2	D 455 Q.5/7.0	P295			CIW 53.1							
DMA-AH-11+	DIESEL AIR HANDLING UNIT				4 3							
1	D 455 Q.5/7.0											
DMA-AH-12	SUPPLY DIV I EM. D-G ROOM COOLING	67	012004	M	4 3		0 1			16		N
2	D 455 P.5/7.0	P295			N-30147							
DMA-AH-12+	DIESEL AIR HANDLING UNIT				4 3							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT	MFG	QID	QS	USE / MFG MODEL NO.	ANL	FREQ	HL
1	D 455 P.5/7.0								
DMA-AH-21	SUPPLY DIV II EM. D-G ROOM COOLING	67		012003	M	4 3	0 1	16	N
2	D 455 Q.5/9.0		P295			C1W-53.1			
DMA-AH-21+	DIESEL AIR HANDLING UNIT					4 3			
1	D 455 Q.5/9.0								
DMA-AH-22	SUPPLY DIV II EM. D-G ROOM COOLING	67		012004	M	4 3	0 1	16	N
2	D 455 P.5/9.0		P295			M-5040			
DMA-AH-22+	DIESEL AIR HANDLING UNIT					4 3			
1	D 455 P.5/9.0								
DMA-AH-31	SUPPLY HPCS D-G ROOM COOLING	67		012003	M	4 3	0 1	16	N
2	D 455 Q.5/4.0		P295			C1W-53.1			
DMA-AH-31+	DIESEL AIR HANDLING UNIT					4 3			
1	D 455 Q.5/4.0								
DMA-AH-32	SUPPLY HPCS D-G ROOM COOLING	67		012004	M	4 3	0 1	16	N
2	D 455 P.3/4.0		P295			DWG 73C3284-8			
DMA-AH-32+	DIESEL AIR HANDLING UNIT					4 3			
1	D 455 P.3/4.0								
DMA-AH-51	SUPPLY D-G CABLE CORRIDOR COOLING	67		012004	M	4 3	0 1	16	N
2	D 441 R.0/9.8		P295			M5-5048			
DMA-AH-51+	DIESEL AIR HANDLING UNIT					4 3			
1	D 441 R.0/9.8								
DMA-FN-11	SUPPLY FAN DMA-AH-11	67		145006	M	4 3	0 1	16	N
2	D 455 Q5/7		P295			P402			
DMA-FN-12	SUPPLY FAN DMA-AH-12	67		145007	M	4 3	0 1	16	N
2	D 455 P5/7		P295			P300-C11			
DMA-FN-21	SUPPLY FAN DMA-AH-21	67		145006	M	4 3	0 1	16	N
2	D 455 Q5/9		P295			P402			
DMA-FN-22	SUPPLY FAN DMA-AH-22	67		145007	M	4 3	0 1	16	N
2	D 455 P5/9		P295			P-300-C11			
DMA-FN-31	SUPPLY FAN DMA-FN-31	67		145006	M	4 3	0 1	16	N
2	D 460 Q5/4.2		P295			P402			
DMA-FN-32	SUPPLY FAN DMA-AH-32	67		145007	M	4 3	0 1	16	N
2	D 455 P5/4.2		P295			P-300-C11			
DMA-FN-51	FAN DMA-AH-51	67		145008	M	4 3	0 1	16	N
2	D 441 R/9.8		P295			165			
DO-P-1A+	DIESEL OIL TRANSFER PUMP 1A					4 0			
1									
DO-P-1B+	DIESEL OIL TRANSFER PUMP 1B					4 0			
1									
DO-P-2+	DIESEL OIL TRANSFER PUMP 2					4 0			
1									
DO-P-3B1	MOTOR DRIVEN BACKUP FUEL OIL PUMP	53		233022	N	4 0			N
2	D 441 Q.0/7.8		H272			FV813-84568			
DO-P-3B2	MOTOR DRIVEN BACKUP FUEL OIL PUMP	53		233022	N	4 0			N
2	D 441 R.0/7.8		H272			FV813-84568			
DO-P-4A1	ENGINE DRIVEN FUEL OIL PUMP	53		233023	N	4 0			N
2	D 441 Q.0/6.1		S407			P 8410219			
DO-P-4A2	ENGINE DRIVEN FUEL OIL PUMP	53		233023	N	4 0			N
2	D 441 R.0/6.1		S407			P 8410219			

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EQUIPMENT NO.	LV	DESCRIPTION	PLANT LOCATION	CONTRACT	MFG	QID	QS	USE TEST	MFG MODEL NO.	ANL	F/O	C	FREQ	TM	HL
DO-P-4B1	2	ENGINE DRIVEN FUEL OIL PUMP	D 441 D.3/7.8	53	S407	233023	N	4 0	P 8410219						N
DO-P-4B2	2	ENGINE DRIVEN FUEL OIL PUMP	D 441 R.0/7.8	53	S407	233023	N	4 0	P 8410219						N
DO-P-5	2	HPCS ENG DRIVEN FUEL OIL PUMP	D	02			R	4 0							
DO-P-6	2	DC MOTOR DRIVEN HPCS FUEL PUMP	D 441 P6/5	02			R	4 0							
DOA-AD-52	2	AUTOMATIC DAMPER TO DMA-AH-51	D 466 R.4/9.5		P014	011001	R	4 3	630-N-31408						
DOA-AD-52+	1	AUTOMATIC DAMPER TO DMA-AH-51						4 3							
DSA-AR-1A+	1							4 0							
DSA-AR-1B+	1							4 0							
DSA-C-1A1	2	STARTING AIR FOR DG-ENG-1A MC-7A-A	D 441 P.5/7.0	53	I075	033001	N	4 0	10T-2STAGE TYPE 30						N
DSA-C-1A2	2	STARTING AIR FOR DG-ENG-2A MC-7A-A	D 441 P.3/7.0	53	I075	033001	N	4 0	10T-2STAGE TYPE 30						N
DSA-C-1B1	2	STARTING AIR FOR DG-ENG-1B MC-8A-A	D 441 P.4/9.2	53	I075	033001	N	4 0	10T-2STAGE TYPE 30						N
DSA-C-1B2	2	STARTING AIR FOR DG-ENG-2B MC-8A-A	D 441 P.4/9.0	53	I075	033001	N	4 0	10T-2 STAGE TYPE 30						N
DSA-C-1C	2	STARTING AIR FOR HPCS DG-ENG-1C	D 441 P.6/3.9	02	L216	033002	R	4 0	32513						
DSA-C-1C+	1	COIPOSITE TO DSA-C-1C	D 441 P.6/3.9					4 0							
DSA-C-2C	2	STARTING AIR FOR HPCS DG-ENG-2C	D 441 P.3/4.0	02	L216	033002	R	4 0	30513						
DSA-C-2C+	1	COIPOSITE TO DSA-C-2C	D 441 P.3/4.0					4 0							
DSA-ENG-1A2	2	DSA-C-1A2 ENGINE	P 441 P.2/7.0	53	P182	112002	N	4 0	8A2R						N
DSA-ENG-1B2	2	DSA-C-1B2 ENGINE	P 443 P.7/8.7	53	P182	112002	N	4 0	3953-8A2R						N
DSA-PCV-1A	2	BACK-UP STARTING AIR PRESS CONTROL	D 444 P.4/7.3	53	G265	236007	N	4 0	80-886C						N
DSA-PCV-1B	2	BACK-UP STARTING AIR PRESS CONTROL	D 448 P.7/9.0	53	G265	236008	N	4 0	P-205001-A						N
DSA-PCV-2A	2	STARTING AIR PRESS CONTROL	D 447 P.4/7.3	53	G265	236007	N	4 0	80-886C						N
DSA-PCV-2B	2	STARTING AIR PRESS CONTROL	D 447 P.6/9.4	53	G265	236008	N	4 0	P-205001-A						N
DSA-RV-1A	2	RELIEF DSA-C-1A1 DISCH	D 444 P.4/7.3	53	S407	297014	N	4 0	FIG 105C						
EDR-AO-19	2	AIR OPERATOR EDR-V-19	C 467 M.5/4.7	41A	K125	018007	R	1 0							
EDR-AO-20		AIR OPERATOR EDR-V-20		41A		018007	R	1 0							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	C 467 M.5/4.7	K125										
EDR-V-19	3"AO GATE FROM DRYWELL SUMP	41A	361702	R	1 0							
2	R 467 M.5/4.7	V085			DWG M2-3311-N27							
EDR-V-19+					1 0							
2	R 467 M.5/4.7											
EDR-V-20	3" GATE FROM DRYWELL SUMP (AO)	41A	361702	R	1 0							
2	C 467 M.5/4.7	V085			NO TAG !							
EDR-V-20+					1 0							
2	C 467 M.5/4.7											
FDR-AO-3	AIR OPERATOR FDR-V-3	41A	018007	R	1 0							
2	R 467 M.0/4.1	K125			EVRP3/156							
FDR-AO-4	AIR OPERATOR FDR-V-4	41A	018007	R	1 0							
2	R 467 M.0/4.1	K125										
FDR-AO-601	AIR OPERATOR FDR-V-601	206		R	3 0							
2	R 428 H.7/9.4	M322										
FDR-AO-602	AIR OPERATOR FDR-V-602	206		R	3 0							
2	R 428 N.0/9.4	M322										
FDR-AO-603	AIR OPERATOR FDR-V-603	206		R	3 0							
2	R 428 V.0/3.4	M322										
FDR-AO-604	AIR OPERATOR FDR-V-604	206		R	3 0							
2	R 428 H.0/3.5	M322										
FDR-V-3	3 GATE	41A	361702	T	1 0							
2	R 467 M.0/4.1	V085			B10-000548-02WN							
FDR-V-3+	COMPOSITE FOR FDR-V-3				1 0							
1	R 467 M.0/4.1											
FDR-V-4	3" GATE CONT TO DRN FD-SUMP-R3 AO	41A	361702	T	1 0							
2	R 467 M.0/4.1	V085			B10-000548-02WN							
FDR-V-4+	COMPOSITE FOR FDR-V-4				1 0							
1	R 467 M.0/4.1											
FDR-V-601	6" GATE DRN HDR ISOL SUMP-R1 AO	206			2 0							
2	R											
FDR-V-601+	COMPOSITE FOR FDR-V-601				2 0							
1												
FDR-V-602	6" GATE DRN HDR ISOL SUMP-R2 AO	206			2 0							
2	R											
FDR-V-602+	COMPOSITE FOR FDR-V-602				2 0							
1												
FDR-V-603	6" GATE DRN HDR ISOL SUMP-R3 AO	206			2 0							
2	R											
FDR-V-603+	COMPOSITE FOR FDR-V-603				2 0							
1												
FDR-V-604	6" GATE DRN HDR ISOL SUMP-R4 AO	206			2 0							
2	R											
FDR-V-604+	COMPOSITE FOR FDR-V-604				2 0							
1												
FPC-P-1A	FUEL POOL CIRC PUMP 1A	21A	233007	R	2 3							
2	R 549 8.6/L.7	W318			3LR-9							
FPC-P-1A+	FUEL POOL COOLING PUMP				2 3							
1	R 549 L.7/8.6											

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
FPC-P-1B	FUEL POOL CIRC PUMP 1B	21A	233007	R	2 3							
2	R 549 L.7/8.8	4318			3LR-9							
FPC-P-1B+	FUEL POOL COOLING PUMP				2 3							
1	R 549 L.7/8.8											
FPC-V-1	6" GLOBE VLV FPC F/DM BYPASS	215			2 3							
2												
FPC-V-1+	6" DO GLOBE VLV FPC F/DM BYPASS				2 3							
1												
FPC-V-113+	6.0" SAUND FPC CLEANUP BYPASS			R	2 3							
1	R 551 L.7/9.1											
FPC-V-153	6" MO GATE FPC-P-3 SUCT SUPP POOL	41A	361704	R	2 3							
2	R 448 J.9/7.9	V085			DWG P2-3311-N9							
FPC-V-153+	6" GATE MO FPC-P-3 SUCT SUPP POOL				2 3							
1	R 448 J.9/7.9											
FPC-V-154	6" MO GATE FPC-P-3 SUCT SUPP POOL	41A	361704	R	2 3							
2	R 448 J.9/8.0	V085			DWG P2-3311-N9							
FPC-V-154+	6" MO GATE FPC-V-3 SUCTION ISOL				2 3							
1	R 448 J.9/8.0											
FPC-V-156	6" MO GATE SUPP POOL RETURN ISOL	41A	361704	R	2 3							
2	R 466 K.2/8.2	V085			DWG P2-3311-N9							
FPC-V-156+	6" MO GATE SUPP POOL RETURN ISOL				2 3							
1	R 466 K.2/8.2											
FPC-V-172	8" GATE VALVE MOTOR OPERATED	41A		R	2 3							
2	R 471 K9/9											
FPC-V-172+					1 3							
1	R 471 K9/9											
FPC-V-173	8" GATE VALVE MOTOR OPERATED	41A		R	2 3							
2	R 471 K/9.4											
FPC-V-173+					1 3							
1	R 471 K/9.4											
FPC-V-175	8" GATE VALVE MOTOR OPERATED	41A		R	2 3							
2	R 548											
FPC-V-175+					1 3							
1	R 548											
FPC-V-181A	8" GATE VALVE MOTOR OPERATED	41A		R	2 3							
2	R 548											
FPC-V-181A+	8" GATE VALVE MOTOR OPERATED				2 3							
1	R 548											
FPC-V-181B	8" GATE VALVE MOTOR OPERATED	41A		R	2 3							
2	R 548											
FPC-V-181B+	8" GATE VALVE MOTOR OPERATED				2 3							
1	R 548											
FPC-V-184	8" GATE VALVE MOTOR OPERATED	41A		R	2 3							
2	R 471 L/9.4											
FPC-V-184+	COMPOSITE TO FPC-V-184				2 3							
1	R 471 L/9.4											
HPCS-P-1	HPCS PUMP	02E22	233008	R	1 0					11		
2	R 423 M.3/3.6	I075			FIG B80570-351861171							
HPCS-P-1+	HPCS PUMP				1 0							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
1	R 423 M.3/3.6											
HPCS-P-2	HPCS DIESEL SERVICE WATER PUMP	02E22	233009	R	4 0							
2	A 448 A.8/1.9	P025			GX14M-WY-2ST							
HPCS-P-2+	HPCS DIESEL SERVICE WATER PUMP				4 0							
1	A 448 A.8/1.9											
HPCS-P-3	HPCS SYSTEM WATER LEG PUMP	35A	233014	B	1 0		0 1			82		N
2	R 423 L.6/3.5	C676			FIG 3065/1055-6599							
HPCS-P-3+	HPCS SYSTEM WATER LEG PUMP				1 0							
1	R 423 L.6/3.5											
HPCS-V-1	14" GATE/CONDST WATER INTO HPCS	02E22	361070	B	1 0		0 1			33+		N
2	R 435 M.0/3.9	A391			DWG 5310-2-1							
HPCS-V-1+					1 0							
1	R 435 M/3.9											
HPCS-V-10	10"MO GLOBE HPCS RETURN TO CST	02E22	361006	M	2 0		0 1			74+		N
2	R 448 L.9/3.7	A391			DWG 1927-3							
HPCS-V-10+	COMP FOR 10IN GLOBE RETURN TO CST				2 0							
1	R 448 L9/3.7											
HPCS-V-11	10" MO GLOBE HPCS RETURN TO CST	02E22	361006	M	2 0		0 1			74		N
2	R 448 L.9/3.7	A391			DWG 1927-3							
HPCS-V-11+	COMP FOR 10IN GLOBE RETURN TO CST				2 0							
1	R 448 L9/3.7											
HPCS-V-12	4"GATE HPCS-P-1 MIN FLOW (MO)	02E22	361060	B	1 0		0 1			33+		N
2	R 430 M.0/3.7	A391			94-13306							
HPCS-V-12+	COMP FOR 4IN GATE HPCS-P-1 MIN FLO				1 0							
1	R 449 L3/3.9											
HPCS-V-15	18"MO GATE SUPP POOL OUTLT TO HPCS	02	361075	B	1 0	0 1	0 1			33+		N
2	R 449 L.3/3.9	A391			94-13272							
HPCS-V-15+	18"MO GATE SUPP POOL OUTLT TO HPCS				1 0							
1	R 449 L3/3.9											
HPCS-V-23	12" MO GLOBE HPCS TEST LINE	02E22	361007	B	2 0		0 1			65		N
2	R 450 L.5/3.7	A391			DWG 1928-3							
HPCS-V-23+	12" MO TEST LINE COMPOSITE				2 0							
1	R 450 L5/3.7											
HPCS-V-4	12" GATE CONTAINMENT ISOL(MO)	02E22	361065	R	1 0		0 1			55		N
2	R 538 M.3/7.3	A391			DWG 94-13401							
HPCS-V-4+	12" MO CONTAINMENT ISO VLV COMP				1 0							
1	P 538 M3/7.3	A391										
HPCS-V-5+	12"&CHECK VLV CONTAINMENT ISO COMP			R	1 0							
1	C 549 244 D AZ R17											
HY-HP-3A	15HP/19A VALVE ACTUATOR HYDR.			R	3 3							
2	C 522 M.2/4.3	G080			5K254YK2246							
HY-HP-3A+	15HP/19A VALVE ACTUATOR HYDR.				3 3							
1	C 522 M.2/4.3	G080			5K254YK2246							
HY-HP-3B	15HP/19A VALVE ACTUATOR HYDR.			R	3 3							
2	C 522 J.7/7.6	G080			5K254YK2246							
HY-HP-3B+	15HP/19A VALVE ACTUATOR HYDR.				3 3							
1	C 522 J.7/7.6	G080			5K254YK2246							
HY-P-A1/3	PUMP HPJ 1800 PSI 8.7 GPM	02B35	233010	R	3 3							
2	R 522 M3/4.3	D122			PV-500							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
HY-P-A2/3	1800 PSI 3.76 PM HYD. CONTROL PUMP	02835	233010	R	3 3							
2	R 522 M3/4.3	D122			PV-500							
HY-P-B1/3	PUMP HPJ 1800 PSI 8.7 GPM	02835	233010	R	3 3							
2	R 522 J6/7.6	D122			PV-500							
HY-P-B2/3	1800 PSI 3.76 PM HYD. CONTROL PUMP	02835	233010	R	3 3							
2	522	D121			PVJ5-006-3QRV							
HY-TCV-A1/18	TEMP CONTROL VALVE 130DEGREES F	02835	335001	R	3 3							
2	C 522 M3/4.3	S405			R-151-E							
HY-TCV-A2/18	TEMP CONTROL VALVE 130DEGREES F	02835	335001	R	3 3							
2	C 522 M3/4.3	S405			R-151-E							
HY-TCV-B1/18	TEMP CONTROL VALVE 130 DEGREES F	02835	335001	R	3 3							
2	R 522 J8/7.6	S405			R-151-E							
HY-TCV-B2/18	TEMP CONTRL VALVE 130 DEGREES F	02835	335001	R	3 3							
2	R 522 J8/7.6	S405			R-151-E							
HY-V-A0/15	SHUTTLE VALVE	02835	361603	R	3 3							
2	C 501 L8/5.2	R197			419-8028							
HY-V-A1/10	SHUT OFF VALVE (2)	02835	361604	R	3 3							
2	C 522 M3/4.3	R197			8013B-10HS28							
HY-V-A1/11	0.5" CHECK SERVO-VALVE DRAIN	02835	361601	R	3 3							
2	C 522 M3/4.3	R197			A455-8S28-1							
HY-V-A1/35	4 WAY VALVE MAN. OPERATED	02835	361605	R	3 3							
2	C 522 M3/4.3	R197			8073B-10HS28							
HY-V-A1/6	4 WAY SOLENOID PUMP DISCH	02835	361976	R	3 3							
2	C 522 M3/4.3	V105			F3-DG4S4-016C-50							
HY-V-A1/7	4 WAY PILOT OPERATED	02835	361977	R	3 3							
2	C 522 M3/4.3	V105			F3-DG3S4-042C-3-20							
HY-V-A1/9	SERVO VALVE	02835	361978	R	3 3							
2	C 522 M3/4.3	V105			F3-SD4-03-620-004-10							
HY-V-A2/10	SHUT OFF VALVE (2)	02835	361604	R	3 3							
2	C 522 M3/4.3	R197			8013B-10HS28							
HY-V-A2/11	0.5" CHECK SERVO-VALVE DRAIN	02835	361601	R	3 3							
2	C 522 M3/4.3	R197			A455-8S28-1							
HY-V-A2/35	4 WAY VALVE MAN. OPERATED	02835	361605	R	3 3							
2	C 522 M3/4.3	R197			8073B-10HS28							
HY-V-A2/6	4 WAY SOLENOID PUMP DISCH	02835	361976	R	3 3							
2	C 522 M3/4.3	V105			F3-DG4S4-016C-50							
HY-V-A2/7	4 WAY PILOT OPERATED	02835	361977	R	3 3							
2	C 522 M3/4.3	V105			F3-DG3S4-042C-3-20							
HY-V-A2/9	SERVO VALVE	02835	361978	R	3 3							
2	C 522 M3/4.3	V105			F3-SD4-03-620-004-10							
HY-V-B1/6	4 WAY SOLENOID PUMP DISCH	02835	361976	R	3 3							
2	R 522 J8/7.6	V105			F3-DG4S4-016C-50							
HY-V-B1/7	4 WAY PILOT OPERATED	02835	361977	R	3 3							
2	R 522 J8/7.6	V105			F3-DG3S4-042C-3-20							
HY-V-B1/9	SERVO VALVE	02835	361978	R	3 3							
2	R 522 J8/7.6	V105			F3-SD4-03-620-004-10							
HY-V-B2/6	4 WAY SOLENOID PUMP DISCH	02835	361976	R	3 3							
2	R 522 J8/7.6	V105			F3-DG4S4-016C-50							
HY-V-B2/7	4 WAY PILOT OPERATED	02835	361977	R	3 3							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 522 J6/7.6	V105			F3-0G3S4-042C-3-20							
HY-V-B2/9	SERVO VALVE	02035	361978	R	3 3							
2	R 522 J8/7.6	V105			F3-S04-03-620-004-10							
LPCS-FCV-11	3" GLOBE LPCS-P-1 MIN FLOW MO	42A	133003	T	1 0		0 1					N
2	R 423 K1/3.5	F139			5248657							
LPCS-FCV-11+	3"MO GLOBE LPCS P-1 MIN FLOW RECIR				1 0							
1	R 423 K1/3.5											
LPCS-P-1	LPCS PUMP	02E21	233011	M	1 0		0 2			37		N
2	R 426 K.0/4.0	I075			29APKD-5 STAGE							
LPCS-P-1+	LPCS PUMP				1 0							
1	R 426 K.0/4.0											
LPCS-P-2	LPCS WATER LEG PUMP	35A	233006	A	1 0		0 1			82		N
2	R 424 J.7/3.6	C676			FIG 3065-1055-6599							
LPCS-P-2+	LPCS WATER LEG PUMP			R	1 0							
1	R 424 J.7/3.6											
LPCS-V-1	24" MO GATE SUPP POOL SUCTION	41A	361713	M	1 0		0 1			37		N
2	R 450 K.0/4.7	V085			DWG P2-3313-N-40							
LPCS-V-1+	24"MO SUPP POOL SUCTION VALVE			R	2 0							
1	R 450 K.0/4.7											
LPCS-V-12	TEST LINE TO SUPP POOL B	41B	361024	N	2 0		0 1			41		N
2	R 450 J.9/3.9	A391			DWG 2647-3							
LPCS-V-12+					2 0							
1	R 450 J.9/3.9											
LPCS-V-5	12" MO GATE TO REACTOR VESSEL	41A	361745	M	1 0	2 1	0 1			43		Y
2	R 525 M.0/4.5	V085			DWG P2-3311-N15							
LPCS-V-5+	12"MO GATE CONTAINMENT BOUNDARY VL			R	1 0							
1	R 525 M.0/4.5											
LPCS-V-6+	12" CHECK TO REACTOR VESSEL			R	1 0							
1	C 547 122 D AZ R16											
MS-AO-13A	AIR OPERATOR FOR MS-PCV-13A	02	018008		1 0							
2	C 547 AZ 35 R18	C710			C5246							
MS-AO-13B	RELIEF VLV AIR OPERATOR	02	018008		1 0							
2	C 547 AZ 45 R18	C710			C5246							
MS-AO-13C	RELIEF VLV AIR OPERATOR	02	018099		1 0							
2	C 547 AZ 321 R18	C710			C5246							
MS-AO-13D	RELIEF VLV AIR OPERATOR	02	018099		1 0							
2	C 547 AZ 305 R22	C710			C5246							
MS-AO-13E	RELIEF VLV AIR OPERATOR	02	018099		1 0							
2	C 547 AZ 45 R22	C710			C5246							
MS-AO-13F	RELIEF VLV AIR OPERATOR	02	018099		1 0							
2	C 547 AZ 60 R22	C710			C5246							
MS-AO-13G	RELIEF VLV AIR OPERATOR	02	018099		1 0							
2	C 547 AZ 293 R22	C710			C5246							
MS-AO-13H	RELIEF VLV AIR OPERATOR	02	018099		1 0							
2	C 547 AZ 67 R22	C710			C5246							
MS-AO-13J	RELIEF VLV AIR OPERATOR	02	018099		1 0							
2	C 547 AZ 24 R18	C710			C5246							
MS-AO-13K	RELIEF VLV AIR OPERATOR	02	018099		1 0							
2	C 547 AZ 333 R18	C710			C5246							

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EQUIPMENT NO. LV	DESCRIPTION PLANT LOCATION	CONTRACT MFG	QIC	QS	USE MFG MODEL NO.	TEST	AVL	F/O	C	FREQ	TM	HL
MS-AO-13L 2	RELIEF VLV AIR OPERATOR C 547 AZ 313 R22	02 C710	018099		1 0 C5246							
MS-AO-13M 2	RELIEF VLV AIR OPERATOR C 547 AZ 288 R22	02 C710	018099		1 0 C5246							
MS-AO-13N 2	RELIEF VLV AIR OPERATOR C 547 AZ 279 R22	02 C710	018099		1 0 C5246							
MS-AO-13P 2	RELIEF VLV AIR OPERATOR C 547 AZ 305 R18	02 C710	018099		1 0 C5246							
MS-AO-13R 2	RELIEF VLV AIR OPERATOR C 547 AZ 75 R22	02 C710	018099		1 0 C5246							
MS-AO-13S 2	RELIEF VLV AIR OPERATOR C 547 AZ 60 R18	02 C710	018099		1 0 C5246							
MS-AO-13U 2	RELIEF VLV AIR OPERATOR C 547 AZ 80 R22	02 C710	018099		1 0 C5246							
MS-AO-13V 2	RELIEF VLV AIR OPERATOR C 547 AZ 315 R18	02 C710		X	1 0 C5246							
MS-AO-22A 2	AIR OPERATOR MS-V-22A C 510 10 D AZ R30	02822 S157	018002	M	1 3 SA-A022		0 1			15	P	Y
MS-AO-22B 2	AIR OPERATOR MS-V-22B C 510 17 D AZ R30	02822 S157	018002	M	1 3 SA-A022		0 1			15	P	Y
MS-AO-22C 2	AIR OPERATOR MS-V-22C C 510 344 D AZ R30	02822 S157	018002	M	1 3 SA-A022		0 1			15	P	Y
MS-AO-22D 2	AIR OPERATOR MS-V-22D C 510 350 D AZ R30	02822 S157	018002	M	1 3 SA-A022		0 1			15	P	Y
MS-AO-28A 2	AIR OPERATOR MS-V-28A R 515 H.3/6.0	02822 S157	018002	M	1 3 SA-A022		0 1			15		Y
MS-AO-28B 2	AIR OPERATOR MS-V-28B R 515 H.3/6.0	02822 S157	018002	M	1 3 SA-A022		0 1			15		Y
MS-AO-28C 2	AIR OPERATOR MS-V-28C R 515 H.3/6.0	02822 S157	018002	M	1 3 SA-A022		0 1			15		Y
MS-AO-28D 2	AIR OPERATOR MS-V-28D R 515 H.3/6.0	02822 S157	018002	M	1 3 SA-A022		0 1			15		Y
MS-DPI-5 2	 R 471 H5/4.5	02 G080		R	2 0 0227							
MS-FE-5A 2	MAIN STM LINE A FLOW C 524 AZ 15 R25	02822 A510	134003	M	1 0 10505143 LINEA		0 0					N
MS-FE-5B 2	MAIN STM LINE B FLOW C 524 AZ 25 R25	02822 A510	134003	M	1 0 10505143 LINEB		0 0					N
MS-FE-5C 2	MAIN STM LINE C FLOW C 524 AZ 345 R25	02822 A510	134003	M	1 0 10505143 LINEC		0 0					N
MS-FE-5D 2	MAIN STM LINE D FLOW C 524 AZ 330 R25	02822 A510	134003	M	1 0 10505143 LINED		0 0					N
MS-RV-1A 2	6" X 10" MAIN STEAM SAFETY RELIEF C 547 AZ 24 R18	02822 C710	297009	B	1 0 6R10 HB-65-BP	2 1	0 0			15		Y
MS-RV-1A+ 1	MS RELIEF VLV C 547 AZ 24 R18				1 0							
MS-RV-1B 2	6" X 10" MS SAFETY RELIEF VALVE C 547 AZ 45 R22	02822 C710	297009	B	1 0 6R10 HB-65-BP	2 1	0 0			15		Y
MS-RV-1B+	MS-RELIEF VLV				1 0							

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QIO	QS	USE / MFG	TEST / MODEL NO.	ANL	F/O	C	FREQ	TM	HL
1	C 547 AZ 45 R22											
MS-RV-1C	6" X 10" MS SAFETY RELIEF VALVE	02B22	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 313 R22	C710			6R10	HB-65-BP						
MS-RV-1C+	MS-RELIEF VLV				1 0							
1	C 547 AZ 313 R22											
MS-RV-1D	6" X 10" MS SAFETY RELIEF VALVE	02B22	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 333 R18	C710			6R10	HB-65-BP						
MS-RV-1D+	MS-RELIEF VLV				1 0							
1	C 547 AZ 333 R18											
MS-RV-2A	6" X 10" MS SAFETY RELIEF VALVE	02B22	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 35 R18	C710			6R10	HB-65-BP						
MS-RV-2A+	MS-RELIEF VLV				1 0							
1	C 547 AZ 35 R18											
MS-RV-2B	6" X 10" MS SAFETY RELIEF VALVE	02B22	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 60 R22	C710			6R10	HB-65-BP						
MS-RV-2B+	MS-RELIEF VLV				1 0							
1	C 547 AZ 60 R22											
MS-RV-2C	6" X 10" MS SAFETY RELIEF VALVE	02B22	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 305 R22	C710			6R10	HB-65-BP						
MS-RV-2C+	MS-RELIEF VLV				1 0							
1	C 547 AZ 305 R22											
MS-RV-2D	6" X 10" MS SAFETY RELIEF VALVE	02B22	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 321 R18	C710			6R10	HB-65-BP						
MS-RV-2D+	MS-RELIEF VLV				1 0							
1	C 547 AZ 321 R18											
MS-RV-3A	6" X 10" MS SAFETY RELIEF VALVE	02B22	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 45 R18	C710			6R10	HB-65-BP						
MS-RV-3A+	MS-RELIEF VLV				1 0							
1	C 547 AZ 45 R18											
MS-RV-3B	6" X 10" MS SAFETY RELIEF VALVE	02B22	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 67 R22	C710			6R10	HB-65-BP						
MS-RV-3B+	MS-RELIEF VLV				1 0							
1	C 547 AZ 67 R22											
MS-RV-3C	6" X 10" MS SAFETY RELIEF VALVE	02B22	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 293 R22	C710			6R10	HB-65-BP						
MS-RV-3C+	MS-RELIEF VLV				1 0							
1	C 547 AZ 293 R22											
MS-RV-3D	6" X 10" MS SAFETY RELIEF VALVE	02B22	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 315 R18	C710			6R10	HB-65-BP						
MS-RV-3D+	MS-RELIEF VLV				1 0							
1	C 547 AZ 315 R18											
MS-RV-4A	6" X 10" MS SAFETY RELIEF VALVE	02B22	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 60 R18	C710			6R10	HB-65-BP						
MS-RV-4A+	MS-RELIEF VLV				1 0							
1	C 547 AZ 60 R18											
MS-RV-4B	6" X 10" MS SAFETY RELIEF VALVE	02B22	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 75 R22	C710			6R10	HB-65-BP						
MS-RV-4B+	MS-RELIEF VLV				1 0							
1	C 547 AZ 75 R22											

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
1	C 547 AZ 45 R22											
MS-RV-1C	6" X 10" MS SAFETY RELIEF VALVE	02822	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 313 R22	C710			6R10 HB-65-BP							
MS-RV-1C+	MS-RELIEF VLV				1 0							
1	C 547 AZ 313 R22											
MS-RV-1D	6" X 10" MS SAFETY RELIEF VALVE	02822	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 333 R18	C710			6R10 HB-65-BP							
MS-RV-1D+	MS-RELIEF VLV				1 0							
1	C 547 AZ 333 R18											
MS-RV-2A	6" X 10" MS SAFETY RELIEF VALVE	02822	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 35 R18	C710			6R10 HB-65-BP							
MS-RV-2A+	MS-RELIEF VLV				1 0							
1	C 547 AZ 35 R18											
MS-RV-2B	6" X 10" MS SAFETY RELIEF VALVE	02822	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 60 R22	C710			6R10 HB-65-BP							
MS-RV-2B+	MS-RELIEF VLV				1 0							
1	C 547 AZ 60 R22											
MS-RV-2C	6" X 10" MS SAFETY RELIEF VALVE	02822	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 305 R22	C710			6R10 HB-65-BP							
MS-RV-2C+	MS-RELIEF VLV				1 0							
1	C 547 AZ 305 R22											
MS-RV-2D	6" X 10" MS SAFETY RELIEF VALVE	02822	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 321 R18	C710			6R10 HB-65-BP							
MS-RV-2D+	MS-RELIEF VLV				1 0							
1	C 547 AZ 321 R18											
MS-RV-3A	6" X 10" MS SAFETY RELIEF VALVE	02822	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 45 R18	C710			6R10 HB-65-BP							
MS-RV-3A+	MS-RELIEF VLV				1 0							
1	C 547 AZ 45 R18											
MS-RV-3B	6" X 10" MS SAFETY RELIEF VALVE	02822	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 67 R22	C710			6R10 HB-65-BP							
MS-RV-3B+	MS-RELIEF VLV				1 0							
1	C 547 AZ 67 R22											
MS-RV-3C	6" X 10" MS SAFETY RELIEF VALVE	02822	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 293 R22	C710			6R10 HB-65-BP							
MS-RV-3C+	MS-RELIEF VLV				1 0							
1	C 547 AZ 293 R22											
MS-RV-3D	6" X 10" MS SAFETY RELIEF VALVE	02822	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 315 R18	C710			6R10 HB-65-BP							
MS-RV-3D+	MS-RELIEF VLV				1 0							
1	C 547 AZ 315 R18											
MS-RV-4A	6" X 10" MS SAFETY RELIEF VALVE	02822	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 60 R18	C710			6R10 HB-65-BP							
MS-RV-4A+	MS-RELIEF VLV				1 0							
1	C 547 AZ 60 R18											
MS-RV-4B	6" X 10" MS SAFETY RELIEF VALVE	02822	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 75 R22	C710			6R10 HB-65-BP							
MS-RV-4B+	MS-RELIEF VLV				1 0							
1	C 547 AZ 75 R22											

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
1	C 547 AZ 45 R22											
MS-RV-1C	6" X 10" MS SAFETY RELIEF VALVE	02822	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 313 R22	C710			6R10 HB-65-BP							
MS-RV-1C+	MS-RELIEF VLV				1 0							
1	C 547 AZ 313 R22											
MS-RV-1D	6" X 10" MS SAFETY RELIEF VALVE	02822	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 333 R18	C710			6R10 HB-65-BP							
MS-RV-1D+	MS-RELIEF VLV				1 0							
1	C 547 AZ 333 R18											
MS-RV-2A	6" X 10" MS SAFETY RELIEF VALVE	02822	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 35 R18	C710			6R10 HB-65-BP							
MS-RV-2A+	MS-RELIEF VLV				1 0							
1	C 547 AZ 35 R18											
MS-RV-2B	6" X 10" MS SAFETY RELIEF VALVE	02822	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 60 R22	C710			6R10 HB-65-BP							
MS-RV-2B+	MS-RELIEF VLV				1 0							
1	C 547 AZ 60 R22											
MS-RV-2C	6" X 10" MS SAFETY RELIEF VALVE	02822	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 305 R22	C710			6R10 HB-65-BP							
MS-RV-2C+	MS-RELIEF VLV				1 0							
1	C 547 AZ 305 R22											
MS-RV-2D	6" X 10" MS SAFETY RELIEF VALVE	02822	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 321 R13	C710			6R10 HB-65-BP							
MS-RV-2D+	MS-RELIEF VLV				1 0							
1	C 547 AZ 321 R13											
MS-RV-3A	6" X 10" MS SAFETY RELIEF VALVE	02822	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 45 R18	C710			6R10 HB-65-BP							
MS-RV-3A+	MS-RELIEF VLV				1 0							
1	C 547 AZ 45 R18											
MS-RV-3B	6" X 10" MS SAFETY RELIEF VALVE	02822	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 67 R22	C710			6R10 HB-65-BP							
MS-RV-3B+	MS-RELIEF VLV				1 0							
1	C 547 AZ 67 R22											
MS-RV-3C	6" X 10" MS SAFETY RELIEF VALVE	02822	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 293 R22	C710			6R10 HB-65-BP							
MS-RV-3C+	MS-RELIEF VLV				1 0							
1	C 547 AZ 293 R22											
MS-RV-3D	6" X 10" MS SAFETY RELIEF VALVE	02822	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 315 R13	C710			6R10 HB-65-BP							
MS-RV-3D+	MS-RELIEF VLV				1 0							
1	C 547 AZ 315 R13											
MS-RV-4A	6" X 10" MS SAFETY RELIEF VALVE	02822	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 60 R18	C710			6R10 HB-65-BP							
MS-RV-4A+	MS-RELIEF VLV				1 0							
1	C 547 AZ 60 R18											
MS-RV-4B	6" X 10" MS SAFETY RELIEF VALVE	02822	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 75 R22	C710			6R10 HB-65-BP							
MS-RV-4B+	MS-RELIEF VLV				1 0							
1	C 547 AZ 75 R22											

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
1	C 547 AZ 45 R22											
MS-RV-1C	6" X 10" MS SAFETY RELIEF VALVE	02822	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 313 R22	C710			6R10 HB-65-BP							
MS-RV-1C+	MS-RELIEF VLV				1 0							
1	C 547 AZ 313 R22											
MS-RV-1D	6" X 10" MS SAFETY RELIEF VALVE	02822	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 333 R18	C710			6R10 HB-65-BP							
MS-RV-1D+	MS-RELIEF VLV				1 0							
1	C 547 AZ 333 R18											
MS-RV-2A	6" X 10" MS SAFETY RELIEF VALVE	02822	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 35 R18	C710			6R10 HB-65-BP							
MS-RV-2A+	MS-RELIEF VLV				1 0							
1	C 547 AZ 35 R18											
MS-RV-2B	6" X 10" MS SAFETY RELIEF VALVE	02822	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 60 R22	C710			6R10 HB-65-BP							
MS-RV-2B+	MS-RELIEF VLV				1 0							
1	C 547 AZ 60 R22											
MS-RV-2C	6" X 10" MS SAFETY RELIEF VALVE	02822	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 305 R22	C710			6R10 HB-65-BP							
MS-RV-2C+	MS-RELIEF VLV				1 0							
1	C 547 AZ 305 R22											
MS-RV-2D	6" X 10" MS SAFETY RELIEF VALVE	02822	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 321 R18	C710			6R10 HB-65-BP							
MS-RV-2D+	MS-RELIEF VLV				1 0							
1	C 547 AZ 321 R18											
MS-RV-3A	6" X 10" MS SAFETY RELIEF VALVE	02822	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 45 R18	C710			6R10 HB-65-BP							
MS-RV-3A+	MS-RELIEF VLV				1 0							
1	C 547 AZ 45 R18											
MS-RV-3B	6" X 10" MS SAFETY RELIEF VALVE	02822	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 67 R22	C710			6R10 HB-65-BP							
MS-RV-3B+	MS-RELIEF VLV				1 0							
1	C 547 AZ 67 R22											
MS-RV-3C	6" X 10" MS SAFETY RELIEF VALVE	02822	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 293 R22	C710			6R10 HB-65-BP							
MS-RV-3C+	MS-RELIEF VLV				1 0							
1	C 547 AZ 293 R22											
MS-RV-3D	6" X 10" MS SAFETY RELIEF VALVE	02822	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 315 R18	C710			6R10 HB-65-BP							
MS-RV-3D+	MS-RELIEF VLV				1 0							
1	C 547 AZ 315 R18											
MS-RV-4A	6" X 10" MS SAFETY RELIEF VALVE	02822	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 60 R18	C710			6R10 HB-65-BP							
MS-RV-4A+	MS-RELIEF VLV				1 0							
1	C 547 AZ 60 R18											
MS-RV-4B	6" X 10" MS SAFETY RELIEF VALVE	02822	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 75 R22	C710			6R10 HB-65-BP							
MS-RV-4B+	MS-RELIEF VLV				1 0							
1	C 547 AZ 75 R22											

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	FM	HL
1	C 547 AZ 45 R22											
MS-RV-1C	6" X 10" MS SAFETY RELIEF VALVE	02822	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 313 R22	C710			6R10 HB-65-BP							
MS-RV-1C+	MS-RELIEF VLV				1 0							
1	C 547 AZ 313 R22											
MS-RV-1D	6" X 10" MS SAFETY RELIEF VALVE	02822	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 333 R18	C710			6R10 HB-65-BP							
MS-RV-1D+	MS-RELIEF VLV				1 0							
1	C 547 AZ 333 R18											
MS-RV-2A	6" X 10" MS SAFETY RELIEF VALVE	02822	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 35 R18	C710			6R10 HB-65-BP							
MS-RV-2A+	MS-RELIEF VLV				1 0							
1	C 547 AZ 35 R18											
MS-RV-2B	6" X 10" MS SAFETY RELIEF VALVE	02822	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 60 R22	C710			6R10 HB-65-BP							
MS-RV-2B+	MS-RELIEF VLV				1 0							
1	C 547 AZ 60 R22											
MS-RV-2C	6" X 10" MS SAFETY RELIEF VALVE	02822	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 305 R22	C710			6R10 HB-65-BP							
MS-RV-2C+	MS-RELIEF VLV				1 0							
1	C 547 AZ 305 R22											
MS-RV-2D	6" X 10" MS SAFETY RELIEF VALVE	02822	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 321 R18	C710			6R10 HB-65-BP							
MS-RV-2D+	MS-RELIEF VLV				1 0							
1	C 547 AZ 321 R18											
MS-RV-3A	6" X 10" MS SAFETY RELIEF VALVE	02822	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 45 R18	C710			6R10 HB-65-BP							
MS-RV-3A+	MS-RELIEF VLV				1 0							
1	C 547 AZ 45 R18											
MS-RV-3B	6" X 10" MS SAFETY RELIEF VALVE	02822	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 67 R22	C710			6R10 HB-65-BP							
MS-RV-3B+	MS-RELIEF VLV				1 0							
1	C 547 AZ 67 R22											
MS-RV-3C	6" X 10" MS SAFETY RELIEF VALVE	02822	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 293 R22	C710			6R10 HB-65-BP							
MS-RV-3C+	MS-RELIEF VLV				1 0							
1	C 547 AZ 293 R22											
MS-RV-3D	6" X 10" MS SAFETY RELIEF VALVE	02822	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 315 R18	C710			6R10 HB-65-BP							
MS-RV-3D+	MS-RELIEF VLV				1 0							
1	C 547 AZ 315 R18											
MS-RV-4A	6" X 10" MS SAFETY RELIEF VALVE	02822	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 60 R18	C710			6R10 HB-65-BP							
MS-RV-4A+	MS-RELIEF VLV				1 0							
1	C 547 AZ 60 R18											
MS-RV-4B	6" X 10" MS SAFETY RELIEF VALVE	02822	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 75 R22	C710			6R10 HB-65-BP							
MS-RV-4B+	MS-RELIEF VLV				1 0							
1	C 547 AZ 75 R22											

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
MS-RV-4C	6" X 10" MS SAFESTY RELIEF VALVE	02822	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 288 R22	C710			6R10 HB-65-BP							
MS-RV-4C+	MS-RELIEF VLV				1 0							
1	C 547 AZ 288 R22											
MS-RV-4D	6" X 10" MS SAFETY RELIEF VALVE	02822	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 305 R18	C710			6R10 HB-65-BP							
MS-RV-4D+	MS-RELIEF VLV				1 0							
1	C 547 AZ 305 R18											
MS-RV-5B	6" X 10" MS SAFETY RELIEF VALVE	02822	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 80 R22	C710			6R10 HB-65-BP							
MS-RV-5B+	MS-RELIEF VLV				1 0							
1	C 547 AZ 80 R22											
MS-RV-5C	6" X 10" MS SAFETY RELIEF VALVE	02822	297009	B	1 0	2 1	0 0			15		Y
2	C 547 AZ 279 R22	C710			6R10 HB-65-BP							
MS-RV-5C+	MS-RELIEF VLV				1 0							
1	C 547 AZ 279 R22											
MS-V-1+	REACTOR VESSEL HEAD VENT VLV			R	2 0							
1	C 573 AZ 225 R15											
MS-V-16	3" MO GATE FROM PRICONT	41A	361740	M	1 0		0 1			58	P	Y
2	C 502 360 D AZ R36	V085			DWG P2-3311-N-2							
MS-V-16+	3" MO GATE VLV FROM PRI CONT				1 0							
1	C 502 AZ 360 R36											
MS-V-19	3" MO GATE DRAIN BLOCK	41A	361740	T	1 0		0 1			58		M
2	R 504 H.3/6.0	V085			B10-070548-02WN							
MS-V-19+	3"MO GATE VLV FM DRAIN BLOCK				1 0							
1	R 504 H.3/6.0											
MS-V-2	REACTOR VESSEL HEAD VENT	215	361205	M	2 0						P	
2	C 573 230 D AZ R15	B350			P 76850-1							
MS-V-2+	REACTOR VESSEL HEAD VENT				2 0							
1	C 573 AZ 230 R15											
MS-V-20	3" MO GATE MS DRAIN BLOCK	41B		X	3 3							
2	R 504 H.6/6.0	A391			4513-42							
MS-V-22A	26" AO GLOBE MSIV (INBOARD)	02822	361964	M	1 3		0 1			15		Y
2	C 505 AZ 5 R32	R340			1612JMMNTY							
MS-V-22A+	MS ISOL VLV				1 3							
1	C 505 AZ 5 R32											
MS-V-22B	26" AO GLOBE MSIV (INBOARD)	02822	361964	M	1 3		0 1			15		Y
2	C 506 AZ 15 R32	R340			1612JMMNTY							
MS-V-22B+	MS ISOL VLV				1 3							
2	C 506 AZ 15 R32											
MS-V-22C	26" AO GLOBE MSIV (OUTBOARD)	02822	361964	M	1 3		0 1			15		Y
2	C 506 AZ 315 R32	R340			1612JMMNTY							
MS-V-22C+	MS ISOL VLV				1 3							
1	C 506 AZ 315 R32											
MS-V-22D	26" AO GLOBE MSIV (INBOARD)	02822	361964	M	1 3		0 1			15		Y
2	C 506 355 D AZ R32	R340			1612JMMNTY							
MS-V-22D+	MS ISOL VLV				1 3							
1	C 506 AZ 355 R32											
MS-V-28A	26" AO GLOBE MSIV (OUTBOARD)	02822	361964	M	1 3		0 1			15		Y

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFR	QID	QS	USE TEST / MFG MODEL NO.	ANL	F/O	C	FREQ	TM	HL
2	R 506 H.8/5.8	R340			1612JMMNTY						
MS-V-28A+	MS ISOL VLV				1 3						
1	R 506 H.8/5.8										
MS-V-28B	26" AO GLOBE MSIV (OUTBOARD)	02822	361964	M	1 3	0 1			15		Y
2	R 506 H.8/5.6	R340			1612JMMNTY						
MS-V-28B+	MS ISOL VLV				1 3						
1	R 506 H.8/5.6										
MS-V-28C	26" AO GLOBE MSIV (OUTBOARD)	02822	361964	M	1 3	0 1			15		Y
2	R 506 H.8/6.4	R340			1612JMMNTY						
MS-V-28C+	MS ISOL VLV				1 3						
1	R 506 H.8/6.4										
MS-V-28D	MSIV (OUTBOARD) 26" A.O. GLOBE	02822	361964	M	1 3	0 1			15		Y
2	R 506 H.8/6.2	R340			1612JMMNTY						
MS-V-28D+	MS ISOL VLV				1 3						
1	R 506 H.8/6.2										
MS-V-37A	10" CHECK MS-RV-2A DISCH	93	361936	C	1 0	0 1			99+		Y
2	C 505 AZ 42 R36	G202			LF 240-427						
MS-V-37B	10" CHECK MS-RV-3A DISCH	93	361936	C	1 0	0 1			99+		Y
2	C 505 AZ 74 R35	G202			LF 240-427						
MS-V-37C	10" CHECK MS-RV-2D DISCHARGE	93	361936	C	1 0	0 1			99+	P	Y
2	C 506 317 D AZ R36	G202			LF240-427						
MS-V-37D	10" CHECK MS-RV-2C DISCH	93	361936	C	1 0	0 1			99+		Y
2	C 506 232 D AZ R36	G202			LF 240-427						
MS-V-37E	10" CHECK MS-RV-1B DISCH	93	361936	C	1 0	0 1			99+		Y
2	C 505 AZ 52 R35	G202			LF 240-427						
MS-V-37F	10" CHECK MS-RV-2B DISCH	93	361936	C	1 0	0 1			99+		Y
2	C 505 AZ 105 R35	G202			LF 240-427						
MS-V-37G	10" CHECK MS-RV-3C DISCH	93	361936	C	1 0	0 1			99+		Y
2	C 505 AZ 222 R35	G202			LF 240-427						
MS-V-37H	10" CHECK MS-RV-3B DISCH	93	361936	C	1 0	0 1			99+		Y
2	C 505 AZ 116 R35	G202			LF 240-427						
MS-V-37J	10" CHECK MS-RV-1A DISCH	93	361936	C	1 0	0 1			99+		Y
2	C 506 AZ 31 R36	G202			LF 240-427						
MS-V-37K	10" CHECK MS-RV-1D DISCH	93	361936	C	1 0	0 1			99+	P	Y
2	C 506 320 D AZ R36	G202			LF240-427						
MS-V-37L	10" CHECK MS-RV-1C DISCH	93	361936	C	1 0	0 1			99+		Y
2	C 505 AZ 310 R35	G202			LF 240-427						
MS-V-37M	10" CHECK MS-RV-4C DISCH	93	361936	C	1 0	0 1			99+		Y
2	C 505 AZ 211 R35	G202			LF 240-427						
MS-V-37N	10" CHECK MS-RV-5C DISCH	93	361936	C	1 0	0 1			99+		Y
2	C 505 AZ 201 R33	G202			LF 240-427						
MS-V-37P	10" CHECK MS-RV-4D DISCH	93	361936	C	1 0	0 1			99+		Y
2	C 505 AZ 288 R36	G202			LF 240-427						
MS-V-37R	10" CHECK MS-RV-4B DISCH	93	361936	C	1 0	0 1			99+		Y
2	C 505 AZ 127 R36	G202			LF 240-427						
MS-V-37S	10" CHECK MS-RV-4A DISCH	93	361936	C	1 0	0 1			99+		Y
2	C 505 AZ 95 R35	G202			LF 240-427						
MS-V-37U	10" CHECK MS-RV-5B DISCH	93	361936	C	1 0	0 1			99+		Y
2	C 505 AZ 137 R35	G202			LF 240-427						

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE TEST / MFG MODEL NO.	ANL	F/O	C	FREQ	TM	HL
MS-V-37V	10" CHECK MS-RV-30 DISCH	93	361936	C	1 0	0 1			99+		Y
2	C 506 AZ 300 R35	G202			LF 240-427						
MS-V-38A	10" VACUUM BREAKER VALVE DISCHARGE	93	361936	C	1 0	0 1			99+		Y
2	C 505 AZ 42 R36	G202			LF 240-427						
MS-V-38B	10" VACUUM BREAKER VALVE DISCHARGE	93	361936	C	1 0	0 1			99+		Y
2	C 505 AZ 74 R35	G202			LF 240-427						
MS-V-38C	10" VACUUM BREAKER VALVE DISCHARGE	93	361936	C	1 0	0 1			99+		Y
2	C 506 AZ 317 R36	G202			LF 240-427						
MS-V-38D	10" VACUUM BREAKER VALVE DISCHARGE	93	361936	C	1 0	0 1			99+		Y
2	C 506 AZ 232 R36	G202			LF 240-427						
MS-V-38E	10" VACUUM BREAKER VALVE DISCHARGE	93	361936	C	1 0	0 1			99+		Y
2	C 505 AZ 52 R35	G202			LF 240-427						
MS-V-38F	10" VACUUM BREAKER VALVE DISCHARGE	93	361936	C	1 0	0 1			99+		Y
2	C 505 AZ 105 R35	G202			LF 240-427						
MS-V-38G	10" VACUUM BREAKER VALVE	93	361936	C	1 0	0 1			99+		Y
2	C 505 AZ 222 R35	G202			LF 240-427						
MS-V-38H	10" VACUUM BREAKER VALVE	93	361936	C	1 0	0 1			99+		Y
2	C 505 AZ 116 R35	G202			LF 240-427						
MS-V-38J	10" VACUUM BREAKER VALVE	93	361936	C	1 0	0 1			99+		Y
2	C 505 AZ 31 R35	G202			LF 240-427						
MS-V-38K	10" VACUUM BREAKER VALVE	93	361936	C	1 0	0 1			99+		Y
2	C 506 AZ 320 R36	G202			LF 240-427						
MS-V-38L	10" VACUUM BREAKER VALVE	93	361936	C	1 0	0 1			99+		Y
2	C 505 AZ 310 R35	G202			LF 240-427						
MS-V-38M	10" VACUUM BREAKER VALVE	93	361936	C	1 0	0 1			99+		Y
2	C 505 AZ 211 R35	G202			LF 240-427						
MS-V-38N	10" VACUUM BREAKER VALVE	93	361936	C	1 0	0 1			99+		Y
2	C 505 AZ 201 R35	G202			LF 240-427						
MS-V-38P	10" VACUUM BREAKER VALVE	93	361936	C	1 0	0 1			99+		Y
2	C 505 AZ 288 R36	G202			LF 240-427						
MS-V-38R	10" VACUUM BREAKER VALVE	93	361936	C	1 0	0 1			99+		Y
2	C 505 AZ 127 R36	G202			LF 240-427						
MS-V-38S	10" VACUUM BREAKER VALVE	93	361936	C	1 0	0 1			99+		Y
2	C 505 AZ 95 R35	G202			LF 240-427						
MS-V-38U	10" VACUUM BREAKER VALVE	93	361936	C	1 0	0 1			99+		Y
2	C 505 AZ 137 R35	G202			LF 240-427						
MS-V-38V	10" VACUUM BREAKER VALVE	93	361936	C	1 0	0 1			99+		Y
2	C 505 AZ 300 R35	G202			LF 240-427						
MS-V-5	REACTOR VESSEL HEAD VENT	215	361205	H	2 0	0 1			34		N
2	C 575 AZ 220 R12	B350			P 76850-1						
MS-V-5+	REACTOR VESSEL HEAD VENT VLV				2 0						
1	C 575 AZ 220 R12										
MS-V-67A	MS-V-28A BODY DRAIN SHUT	215		R	1 0						
2	R 506 H.8/5.8										
MS-V-67A+	MS-V-28A BODY DRAIN				1 0						
1	R 506 H.8/5.8										
MS-V-67B	MS-V-28B BODY DRAIN SHUT	215		R	1 0						
2	R 506 H.8/5.6										
MS-V-67B+	MS-V-28B BODY DRAIN				1 0						

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
1	R 506 H.8/5.6											
MS-V-67C	MS-V-28C BODY DRAIN SHUT	215		R	1 0							
2	R 506 H.8/6.4											
MS-V-67C+	MS-V-28C BODY DRAIN				1 0							
1	R 506 H.8/6.4											
MS-V-67D	MS-V-28D BODY DRAIN SHUT	215		R	1 0							
2	R 506 H.8/6.2											
MS-V-67D+	MS-V-28D BODY DRAIN				1 0							
1	R 506 H.8/6.2											
MSLC-FN-1	INBD. MS LINE DEPRESS. FAN	28	145009	M	1 0		0 1					N
2	R 473 H.3/6.3	B515			7N93689							
MSLC-FN-1+	INBD. MS LINE DEPRESS. FAN				1 0							
1	R 473 H.3/6.3											
MSLC-FN-2	OUTBD MS LINE DEPRES FAN	28	145009	M	1 0		0 1					N
2	R 511 H.3/7.0	B515			7N93689REVG							
MSLC-FN-2+	OUTBD. MS LINE DEPRESS. FAN				1 0							
1	R 511 H.3/7.0											
MSLC-MO-10	1HP MOTOR OPERATOR MSLC-V-10	215			1 0							
2	R 501 H1/6.4	L200			SMB-000-5/P48							
MSLC-V-1A	1.5" GATE MS VENT BYPASS VALVE TO	215	361204	R	1 0							
2	R 471 H.5/5.5	B350			79020-001							
MSLC-V-1A+	1.5" GATE MS VENT BYPASS VALVE				1 0							
1	R 471 H.5/5.5											
MSLC-V-1B	1.5" GATE MS VENT BYPASS VALVE TO	215	361204	R	1 0							
2	R 471 H.5/5.6	B350			79020-001							
MSLC-V-1B+	1.5" GATE MS VENT BYPASS VALVE				1 0							
1	R 471 H.5/5.6											
MSLC-V-1C	1.5" GATE MS VENT BYPASS VALVE TO	215	361204	R	1 0							
2	R 471 H.5/5.6	B350			79020-001							
MSLC-V-1C+	1.5" GATE VENT BYPASS MS VALVE				1 0							
1	R 471 H.5/5.6											
MSLC-V-1D	1.5" GATE MS VENT BYPASS VALVE TO	215	361204	R	1 0							
2	R 471 H.5/5.5	B350			79020-001							
MSLC-V-1D+	1.5" GATE MS VENT BYPASS VALVE				1 0							
1	R 471 H.5/5.5											
MSLC-V-10	1.5" GATE MS DEPRES. VENT VALVE TO	215	361204	R	1 0							
2	R 501 H.1/6.4	B350			P 76890-001							
MSLC-V-10+	1.5" GATE MS DEPRESS VENT VALVE				1 0							
1	R 501 H.1/6.4											
MSLC-V-11	1.5" VACUUM BREAKER TO MANIFOLD	215	361204	B	2 0		0 1			99+		N
2	R 481 H.5/6.1	B350			P 76620							
MSLC-V-12	1.5" VACUUM BREAKER TO MSLC-FN-2	215	361204	Q	2 0		0 1			99+		N
2	R 510 H.7/7.0	B350										
MSLC-V-2A	1.5" GATE LOOP "A"	215	361204	R	1 0							
2	R 502 H.6/5.5	B350			P 76890-001							
MSLC-V-2A+	1.5" GATE LOOP "A" MANIFOLD				1 0							
1	R 502 H.6/5.5											
MSLC-V-2B	1.5" GATE LOOP "B" MANIFOLD NO	215	361204	R	1 0							
2	R 502 H.6/5.3	B350			P 76890-001							

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
MSLC-V-2B+ 1	1.5" GATE LOOP "B" MANIFOLD R 502 H.6/5.3				1 0							
MSLC-V-2C 2	1.5" GATE LOOP "C" MANIFOLD MO R 502 H.6/6.4	215 B350	361204	R	1 0 P 76890-001							
MSLC-V-2C+ 1	1.5" GATE LOOP "C" MANIFOLD R 502 H.6/6.4				1 0							
MSLC-V-2D 2	1.5" GATE LOOP "D" MANIFOLD MO R 502 H.4/5.8	215 B350	361204	R	1 0 P 76890-001							
MSLC-V-2D+ 1	1.5" GATE LOOP "D" MANIFOLD R 502 H.4/5.8				1 0							
MSLC-V-3A 2	1.5" GATE LOOP "A" R 502 H.6/5.5	215 B350	361204	R	1 0 P 76890-001							
MSLC-V-3A+ 1	1.5" GATE LOOP "A" R 502 H.6/5.5				1 0							
MSLC-V-3B 2	1.5" GATE LOOP "B" R 502 H.6/5.3	215 B350	361204	R	1 0 P 76890-001							
MSLC-V-3B+ 1	1.5" GATE LOOP "B" R 502 H.6/5.3				1 0							
MSLC-V-3C 1	1.5" GATE LOOP "C" MO R 502 H.6/6.4	215 B350	361204	R	1 0 P 76890-001							
MSLC-V-3C+ 1	1.5" GATE LOOP "C" R 502 H.6/6.4				1 0							
MSLC-V-3D 2	MSLC ISO VALVE R 502 H.4/5.8	215 B350	361204	R	1 0 P 76890-001							
MSLC-V-3D+ 1	1.5" GATE LOOP "D" R 502 H.4/5.8				1 0							
MSLC-V-4 2	1.5" GATE TO GAS TREATMENT R 502 H.2/6.0	215 B350	361204	R	1 0 P 76890-001							
MSLC-V-4+ 1	1.5" GATE TO GAS TREATMENT R 502 H.2/6.0				1 0							
MSLC-V-5 2	1.5" GATE TO GAS TREATMENT R 502 H.2/6.2	215 B350	361204	R	1 0 P 76890-001							
MSLC-V-5+ 1	1.5" GATE TO GAS TREATMENT R 502 H.2/6.2				1 0							
MSLC-V-9 2	1.5" GATE MS DEPRES VENT VALVE TO R 502 H.2/6.4	215		R	1 0							
MSLC-V-9+ 1	1.5" GATE MS DEPRES VENT VALVE R 502 H.2/6.4				1 0							
MT-CRA-2 1	RX BLDG (125TON/15TON) R 648	31A W170	055001	M	3 0		0 1					N
MT-CRA-9A 1	PORTABLE REFUEL. JIB (1/2 TON) R 607 J5/7.5	32CD	055002	M	3 0 L05G44F820		0 1					N
MT-CRA-9B 1	PORTABLE REFUEL. JIB (1/2 TON) R 607 L9/8.5	32CD	055002	M	3 0 L05G44F820		0 1					N
NSSE-CRA-3 1	REFUELING PLATFORM R 601	2 G080		R	3 0 762E892G002							
NSSE-EJ-1 2	INNER REFUELING BELLOWS R 601	17 P090		R	3 0							
NSSE-EJ-2	OUTER REFUELING BELLOWS	17		R	3 0							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT	MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	FM	HL
1	R 601		P090										
NSSE-EQ-1A	FUEL PREPARATION MACHINES	2			B	3 0		0 2			17		Y
1	R 601		G085			283X759G001							
NSSE-EQ-18	UWATER VAC CLEANER SEE NSSE-P-7	2				3 0							
1	R 606		G080										
NSSE-EQ-8	INSERVICE INSPECTION PLATFORM	2			B	3 0		0 2			09		Y
1	R 606		G080										
POA-AD-1A1	AUTOMATIC DAMPER, POA-FN-2A INLET	216		011001	R	4 3							
2	A 441 A.2/1.1		P014			P.O. 630-N-31408							
POA-AD-1A1+	AUTOMATIC DAMPER,POA-FN-2A INLET					4 3							
1	A 441 A.2/1.1												
POA-AD-1A2	AUTOMATIC DAMPER, POA-FN-2A INLET	216		011001	R	4 3							
2	A 445 A.2/1.1		P014			P.O. 630-N-31408							
POA-AD-1A2+	AUTOMATIC DAMPER, POA-FN-2A INLET					4 3							
1	A 445 A.2/1.1												
POA-AD-1B1	AUTOMATIC DAMPER, POA-FN-2B INLET	216		011001	R	4 3							
2	A 441 A.2/1.1		P014			P.O. 630-N-31408							
POA-AD-1B1+	AUTOMATIC DAMPER,POA-FN-2B INLET					4 3							
1	A 441 A.2/1.1												
POA-AD-1B2	AUTOMATIC DAMPER, POA-FN-2B INLET	216		011001	R	4 3							
2	B 445 A.2/1.1		P014			P.O. 630-N-31408							
POA-AD-1B2+	AUTOMATIC DAMPER,POA-FN-2B INLET					4 3							
1	A 445 A.2/1.1												
POA-FN-2A	SW PUMPHOUSE A SUPPLY FAN	28		145014	C	4 3		0 1			21	F	N
2	A 441 A.2/1.3		B515			S.O.745-9792							
POA-FN-2A+	SW PUMPHOUSE A SUPPLY FAN					4 3							
1	A 441 A.2/1.3												
POA-FN-2B	SW PUMPHOUSE B SUPPLY FAN	28		145014	C	4 3		0 1			21		N
2	B 441 A.2/1.3		B515			S.O.745-9792							
POA-FN-2B+	SW PUMPHOUSE B SUPPLY FAN					4 3							
1	B 441 A.2/1.3												
RCC-V-104	10" GATE VALVE BODY					1 0							
2	R												
RCC-V-104+	COMPOSITE 10" MO GATE	41A				1 0							
1													
RCC-V-129	8" GATE FPC-HXS INLET	41A			R	1 0							
2													
RCC-V-129+	COMPOSITE FOR RCC-V-129					1 0							
1													
RCC-V-130+	COMPOSITE FOR RCC-V-130				R	1 0							
1													
RCC-V-131	6" GATE FPC HXS OUTLET	41A			R	1 0							
2													
RCC-V-131+	COMPOSITE FOR RCC-V-131					1 0							
1													
RCC-V-21	10" MO GATE PRIM CONT OUT	41A		361706	R	1 0							
2	R 514 K.3/4.2		V085			B16-00054B-26LN							
RCC-V-21+	COMPOSITE FOR RCC-V-21					1 0							
1	H 525 D10												

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE TEST / MFG MODEL NO.	ANL	F/O	C	FREQ	TM	HL
RCC-V-40	10" GATE MO RCC RET FROM PR	41A	361706	R	1 0					P	
2	C 514 78 D AZ R33	V085			DWG P2-3311-N11						
RCC-V-40*	COMPOSITE FOR RCC-V-40				1 0						
1	C 514 78 D AZ R33										
RCC-V-5	10" MO GATE PRIM CONT INLET ISO	41A	361706	R	1 0						
2	R 514 K.3/4.1	V085			B16-00054B-26LN						
RCC-V-5*	COMPOSITE FOR RCC-V-5				1 0						
1	R 514 K.3/4.1										
RCIC-AO-25	AIR OPERATOR RCIC-V-25	215		R	3 1						
2	R										
RCIC-AO-26	AIR OPERATOR RCIC-V-26	215		R	3 1						
2	R										
RCIC-AO-4	AIR OPERATOR RCIC-V-4	215		R	3 1						
2	R										
RCIC-AO-5	AIR OPERATOR RCIC-V-5	215		R	3 1						
2	R										
RCIC-AO-54	AIR OPERATOR RCIC-V-54	215		R	3 1						
2	R										
RCIC-AO-65	AIR OPERATOR RCIC-V-65	69	018004	R	2 1						
2	R				OSK2764						
RCIC-AO-66	AIR OPERATOR RCIC-V-66	69		R	2 1						
2	R 590 200 D AZ										
RCIC-DT-1	RCIC TURBINE E51-C002	02E51	094001	R	3 1						
2	R 426 H.5/7.4	T147			GS-2						
RCIC-DT-1*					3 1						
1											
RCIC-HO-2	HYD OPERATOR RCIC-V-2 GOV VALVE		170001	R	3 1						
2	R 426 H3/7.8	W296			PN8250-190						
RCIC-P-1	RCIC PUMP	02E51	233012	R	3 1						
2	R 425 H.6/7.3	B260			6X6X101/2CP						
RCIC-P-2	RCIC VACUUM PUMP		233013	M	3 1	0 1					N
2	R 424 H.2/5.9	N010			MO671						
RCIC-P-3	RCIC WATER LEG PUMP		233014	B	3 1						
2	R 424 H.4/7.7	C676			FIG 3065-1055-6599						
RCIC-P-4	RCIC CONDENSATE PUMP			R	3 1						
2	R 424 H.3/6.4	G080									
RCIC-P-5	RCIC TURBINE MAIN OIL PUMP	02E51	233024		3 1						
2	R 422 H.5/6.8	T343			ORFD-1						
RCIC-PC-15	PRESSURE CONTROL FOR RCIC-PCV-15		235001		3 1					P	
2	427 H.5/7.2	F130			4160						
RCIC-RV-17	PRESSURE RELIEF VLV 0.75" X 1" R11	215		T	3 1	0 1			73		N
2	R 431 H.3/7.7	L265									
RCIC-RV-18	PRESSURE RELIEF VLV 0.75" X 1" R63	215	297002	T	3 1	0 1			99*		N
2	R 427 H.3/7.8	L265			LCT-11						
RCIC-RV-33	PR. RELIEF VLV 1.5X2.5" RCIC-TK-1	215	297005	N	3 0	0 1			99*		N
2	R 427 H.5/6.7	C710			JO-25-WRB						
RCIC-V-1	3"MO STOP RCIC TRIP THROTTLE VALVE	02E51	361967	R	3 1						
2	R 428 H.7/7.3	S075			69-XC-113						
RCIC-V-10	8" MO GATE VLV-SUCTION COND-P-5,3,	41A	361705	R	3 1						

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EQUIPMENT NO.	LV.	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
	2	R 426 H.4/6.3	V085			DWG P2-3311-N-9							
RCIC-V-10+	1					3 1							
RCIC-V-110	2	2" VAC. REL. VLV-M.O.-30 R 475 J.6/7.4	215 B350	361205	M	2 1 79360		0 1			99+		Y
RCIC-V-110+	1					2 1							
RCIC-V-113	2	VAC. REL. VLV M.O.-86 R 475 J.6/7.4	215 B350	361205	M	2 1 P 79360		0 1			99+		Y
RCIC-V-113+	1					2 1							
RCIC-V-12	2	6" MO GATE TO REACTOR HEAD R 423 H.4/7.7	41A V085	361742	A	3 1 DWG P2-3287-N1	2 1	0 1			70		N
RCIC-V-13	2	6" MO GATE TO RX HEAD R 552 H.3/5.5	41A V085	361742	C	2 1 DWG P23311N4	2 1	0 1			70		N
RCIC-V-13+	1					2 1							
RCIC-V-141	2	RHR STEAM SPLY TRAP STATION CORA R 549 110 D AZ	215 B350	361201	B	3 1 P 76590		0 1			99+		N
RCIC-V-19	2	RCIC PUMP DIS TO SUPP POOL R 467 J.4/7.7	215 B350	361205	A	2 1 P 76850		0 1			34		N
RCIC-V-19+	1					2 1							
RCIC-V-198	2	1" GLOBE PS-198 TO SR-6 567 M.3/5.3	215		X	3 0							
RCIC-V-2	2	3"MO PLUG RCIC TURBINE GOV VALVE R 425 H.5/6.7	02E51 S075	361968	R	3 1 DWG 66726A							
RCIC-V-2+	1					3 1							
RCIC-V-22	2	6" MO GLOBE PUMP DISCH TO CST R 443 H.5/8.1	41B A391	361004	M	3 1 DWG 2653-3		0 1			67		N
RCIC-V-22+	1					3 1							
RCIC-V-25	2	ON DR LINE FROM TURB STM DRIP POT R 423 H.3/6.9	215 B350	361202	B	3 1 DWG 78560		0 1			32		N
RCIC-V-25+	1					3 1							
RCIC-V-26	2	ON DR LINE FROM TURB STM DRIP POT R 423 H.3/6.8	215 B350	361202	B	3 1 DWG 78560		0 1			32		N
RCIC-V-26+	1					3 1							
RCIC-V-31+	1					2 1							
RCIC-V-4	2	1" AO.VLV DISC RCIC-P-4 TO EDR R 424 H.7/6.7	215 B350	361202	B	3 1 DWG 78560		0 1			32		N
RCIC-V-4+	1					3 1							
RCIC-V-45	2	4" MO GLOBE TURB INLET R 425 H.8/7.2	41B A391	361020	A	3 1 DWG 2651-3		0 1			55		N

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
RCIC-V-45+					3 1							
1												
RCIC-V-46	AUX CLG SUPPLY	215	361205	A	3 1		0 1			34		N
2	R 423 H.4/7.0	B350			P 76850							
RCIC-V-46+					3 1							
1												
RCIC-V-5	1"AO VLV RCIC-P-2 DISCH TO EDR	215	361202	B	3 1		0 1			32		N
2	R 423 H.3/6.5	B350			P 78560							
RCIC-V-5+					3 1							
1												
RCIC-V-54	DIAPH OP. CONTROL VLV STM TRAP BYP	215	361202	B	3 1		0 1			32		N
2	R 423 H.7/7.0	B350			P 78560							
RCIC-V-54+					3 1							
1												
RCIC-V-59	6" MO GATE RETURN TO CST	41A	361742	A	3 1	2 1	0 1			70		N
2	R 443 H.7/8.1	V085			DWG P23311N4							
RCIC-V-59+					3 1							
1												
RCIC-V-63	10" MO GATE MS TO RHR HX RCIC TURB	41A	361744	N	2 1		0 1			50+		Y
2	C 551 130 D AZ R19	V085			DWG P2-3311-N14							
RCIC-V-63+					2 1							
1												
RCIC-V-64	10" GATE MS TO RHR HX PC ISOL	41A	361744	B	2 1		0 1			50+		N
2	R 550 L.7/4.7	V085			DWG P23311-N14							
RCIC-V-64+					2 1							
1												
RCIC-V-65	TESTABLE CHECK OV RCIC ITO REACTOR	69	361761	M	2 1		0 1			45		N
2	R 566 M.6/5.6	V085			DWG P2-2767-N1							
RCIC-V-65+					2 1							
1												
RCIC-V-66	6" CHECK TEST. CHK/RCIC IO REACTOR	41B	361053	M	2 1		0 1					Y
2	C 606 150 AZ	A391			3489-3							
RCIC-V-66+					2 1							
1												
RCIC-V-68	10" MO GATE TURB EXH TO SUPP POOL	41A	361044	R	2 1							
2	R 474 J.1/7.5	V085			DWG P2-3311-N-11							
RCIC-V-68+					2 1							
1												
RCIC-V-69	VACUUM PUMP DIS TO SUPP 1 1/2" VLV	215	361205	C	2 1		0 1			99+		N
2	R 465 345 D AZ	B350			DWG 79360							
RCIC-V-69+					2 1							
1												
RCIC-V-76	1" GLOBE RCIC-V-63 BYPASS MO	215	361202	M	2 1		0 1			34+		N
2	C	B350			106DAA3-001							
RCIC-V-76+					2 1							
1												
RCIC-V-8	4" MO GATE STEAM TO RCIC TURBINE	41A	361741	T	2 1		0 1					N
2	R 512 J1/5	V085			B12-D70598-02WN							
RCIC-V-8+					2 1							

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EQUIPMENT NO.	LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TH	HL
	1												
REA-AO-V1	2	AIR OPER FOR VALVE REA-V-1				1 3							
REA-AO-V2	2	AIR OPER FOR VALVE REA-V-2				1 3							
REA-V-1	2	72.0" BFLY R BLD ISO / R 597 H.2/6.2	68 / B250	361102	R	1 3 / DWG A206760							
REA-V-1+	1	RX BLDG EXH VLV DISCH COMPOSITE / R 572				1 3							
REA-V-2	2	72.0" BFLY R BLD ISO / R 597 H.4/6.2	68 / B250	361102	R	1 3 / DWG A-206760							
REA-V-2+	1	RX BLDG EXH VLV DISCH COMPOSITE / R 572				1 3							
RFW-V-10A	2	24" CHECK RFW TO RPV (INSIDE PC) / C 512 345 D AZ R36	41B / A391	361056	M	1 0 / DWG 2633-3		0 1				P	Y
RFW-V-10B	2	24" CHECK RFW TO RPV (INSIDE PC) / C 512 15 D AZ R36	41B / A391	361056	M	1 0 / DWG 2633-3		0 1				P	Y
RFW-V-32A	2	24" AO CHECK RFW OUTBOARD ISOL / R 512 H6/5.7	41B / A391	361057	N	1 3 / 4513-55		0 1					N
RFW-V-32A+	1	24" AO CHECK RFW OUTBOARD ISOL			R	1 3							
RFW-V-32B	2	24" AO CHECK RFW OUTBOARD ISOL / R 512 H6/6.3	41B / A391	361057	N	1 3 / 4513-55		0 1					N
RFW-V-32B+	1	24" AO CHECK RFW OUTBOARD ISOL			R	1 3							
RFW-V-65A+	1	24" MO GATE RFW INLET TO RPV			R	1 3							
RFW-V-65B	2	24" MO GATE RFW INLET TO RPV / R 512 H3/6	41A / V085	361751	C	1 3 / B24-07067P-25SP		0 1			38		N
RFW-V-65B+	1	24" MO GATE RFW INLET TO RPV			R	1 3							
RHR-AO-41A	2	AIR OPERATOR RHR-V-41A / C 569 20 D AZ R19	V085		R	3 0 / DWG P2-2767-N						P	
RHR-AO-41B	2	AIR OPERATOR RHR-V-41B / C 569 160 D AZ R19	V085		R	3 0 / DWG P2-2767-N						P	
RHR-AO-41C	2	AIR OPERATOR RHR-V-41C / C 569 343 D AZ R19	V085		R	3 0 / DWG P2-2767-N						P	
RHR-AO-50A	2	AIR OPERATOR RHR-V-50A / C 513 95 D AZ R28			R	3 0						P	
RHR-AO-50B	2	AIR OPERATOR RHR-V-50B / C 513 285 D AZ R27			R	3 0						P	
RHR-AO-89	2	AIR OPERATOR RHR-V-89 / R 553 M.2/8.9	V085		R	2 0 / DWG P2-2767-N							
RHR-FCV-64A	2	3" MO GLOBE RHR A MIN FLOW / R 443 K.0/9.1	42A / F130	133003	N	1 3 / 52A3657		0 1					N
RHR-FCV-64A+	1	3" MO GLOBE RHR A MIN FLOW				1 3							
RHR-FCV-64B	2	3" MO GLOBE RHR 3 MIN FLOW / R 443 M.0/9.1	42A / F130	133003	N	1 3 / 52A3657		0 1					N

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EQUIPMENT NO. LV	DESCRIPTION PLANT LOCATION	CONTRACT MFG	QID	QS	USE TEST MFG MODEL NO.	ANL	F/O	C	FREQ	TM	HL
RHR-FCV-64B+ 1	3" MO GLOBE RHR B MIN FLOW R 443 H/9.1	 F131			1 3 SMB-000						
RHR-FCV-64C 2	3" MO GLOBE RHR C MIN FLOW R 443 J.0/4.9	42A F130	133003	N	1 0 52A9657	0 1					N
RHR-FCV-64C+ 1	3" MO GLOBE RHR C MIN FLOW R 443 J/4.9	 F130			1 0 SMB-000						
RHR-LCV-65A 2	LINE FROM RHR HEAT EXCHANGER 1A R 481 7.9/K	42A F130	193001	M	1 1 52A8653	0 1					N
RHR-LCV-65A+ 1	LINE FROM RHR HEAT EXCHANGER 1A				1 1						
RHR-LCV-65B 2	2.5"GLOBE LINE FROM RHR HEAT EXC1A R 475 L3/8.1	42A F130	193001	M	1 1 2808-42A	0 1					N
RHR-LCV-65B+ 1	2.5"GLOBE LINE FROM RHR HEAT EXCHA				1 1						
RHR-P-2A 2	RHR PUMP LOOP A 4X SUPPLY R 424 K.2/8.5	02E12 I075	233011	M	1 3 29APKD	0 2			18		N
RHR-P-2A+ 1	RHR PUMP A				1 3						
RHR-P-2B 2	RHR PUMP LOOP A 4X SUPPLY R 424 L.8/8.5	02E12 I075	233011	M	1 3 29APKD-3	0 2			18		N
RHR-P-2B+ 1	RHR PUMP				1 3						
RHR-P-2C 2	RHR PUMP CE12-C002C R 422 H.7/4.7	02E12 I075	233011	M	1 0 29APKD	0 2			18		N
RHR-P-2C+ 1	RHR PUMP CE12-C002C				1 0						
RHR-P-3 2	RHR WATER LEG PUMP R 423 H.3/4.7	35A C676	233006	A	2 3 FIG 3065-1055-6599	0 1			82		N
RHR-P-3+ 1	RHR WATER LEG PUMP				2 3						
RHR-PCV-51A 2	8 CONTV PIC SONIC FLOW: SPECIAL TY R 578 J/9.3	42A F130	236004	M	1 1 53A2406	0 1			17+		N
RHR-PCV-51A+ 1	8 CONTV PIC SONIC FLOW: SPECIAL TY				1 1						
RHR-PCV-51B 2	8 CONTV PIC SONIC FLOW: SPECIAL TY R 575 M.8/9.3	42A F130	236004	M	1 1 T 667-EWP	0 1			17+		N
RHR-PCV-51B+ 1	8 CONTV PIC SONIC FLOW: SPECIAL TY				1 1						
RHR-PI-2A 2	PRESSURE INDICATIOR FOR RHR-P-2A R	02 R290			3 0 613B						
RHR-PI-2B 2	PRESSURE INDICATOR FOR RHR-P-2B R	02 R290			3 0 613B						
RHR-V-11A 2	4" MO GATE RHR HX A OUTLET R 474 K.2/8.1	41A V085	361723	A	1 1 DWG P2-3311-N7/A	0 1			58		N
RHR-V-11A+ 1	4" MO GATE RHR A OUTLET				1 1						
RHR-V-11B 2	4" MO GATE RHR HX B OUTLET R 474 L.8/8.1	41A V085	361723	A	1 1 DWG P2-3311-N7	0 1			58		N
RHR-V-11B+ 1	4" MO GATE RHR HX B OUTLET				1 1						

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE	TEST / MFG MODEL NO.	ANL	F/O	C	FREQ	TM	HL
1												
RHR-V-115	14" MO GATE FROM SW	41A	361728	R	1 0							
2	R 553 9.1/N.0	V085				DWG P2-3313-N31						
RHR-V-115+	14" MO GATE FROM SW				1 0							
1												
RHR-V-116	14" MO GATE FROM SW	41A	361728	R	1 0							
2	R 553 9.0/N.0	V085				DWG P2-3313-N31						
RHR-V-116+	14" MO GATE FROM SW				1 0							
1												
RHR-V-123A	RHR-V-50 BYPASS	215	361202	R	2 3						P	
2	C 515 93 D AZ R31	B350				P 76890-2						
RHR-V-123A+	RHR-V-50 BYPASS				2 3							
1												
RHR-V-123B	RHR-V-50 BYPASS	215	361202	R	2 3						P	
2	C 509 270 D AZ R27	B350				P 76890-2						
RHR-V-123B+	RHR-V-50 BYPASS				2 3							
1												
RHR-V-124A	RHR DRIP POT DRAIN TO RADWASTE	215	361204	A	2 1		0 1			65		N
2	R 472 K.8/8.1	B350				304EAC3-004						
RHR-V-124A+	RHR DRIP POT DRAIN TO RADWASTE				2 1							
1												
RHR-V-124B	RHR DRIP POT DRAIN TO RADWASTE	215	361204	A	2 1		0 1			65		N
2	R 472 L.2/8.1	B350				P 304EAB3-001						
RHR-V-124B+	RHR DRIP POT DRAIN TO RADWASTE				2 1							
1												
RHR-V-125A	RHR DRIP POT DRAIN	215	361204	A	2 1		0 1			65		N
2	R 472 8/L.5	B350				P 304EAB3-001						
RHR-V-125A+	RHR DRIP POT DRAIN				2 1							
1												
RHR-V-125B	RHR DRIP POT DRAIN TO RADWASTE	215	361204	A	2 1		0 1			65		N
2	R 472 8/L.4	B350				P 304EAB3-001						
RHR-V-125B+	RHR DRIP POT DRAIN TO RADWASTE				2 1							
1												
RHR-V-134A	CAC INTERTIE TO RHR	215	361205	R	1 0							
2	R 548 K1/9.0	B350				DWG 82120						
RHR-V-134A+	CAC INTERTIE TO RHR				1 0							
1												
RHR-V-134B	CAC INTERTIE TO RHR	215	361205	R	1 0							
2	R 548 L5/9.2	B350				DWG 82120						
RHR-V-134B+	CAC INTERTIE TO RHR				1 0							
1												
RHR-V-16A	16" MO GATE SPRAY HEADER	41A	361729	M	1 0		0 1			70		Y
2	R 550 L.0/4.5	V085				DWG P2-3313-N35						
RHR-V-16A+	16" MO GATE SPRAY HEADER				1 0							
1												
RHR-V-16B+	16" MO GATE DRYWELL SPRAY HEADER			R	1 0							
1												
RHR-V-17A+	16" MO GATE DRYWELL SPRAY HDR			R	1 0							
1												

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RHR-V-17B	16" MO GATE DRYWELL SPRAY HEADER	41A	361729	M	1 0		0 1			71+		N
2	R 568 K/8.3	V085			DWG P2-3513-N35							
RHR-V-17B+	16" MO GATE DRYWELL SPRAY HEADER				1 0							
1												
RHR-V-21	18" MO GLOBE LOOP C RET TO SUPP PO	41B	361027	M	1 0		0 1			35+		N
2	R 446 H.4/5.8	A391			DWG 2648-3							
RHR-V-21+	18" MO GLOBE LOOP C RET TO SUPP PO				1 0							
1												
RHR-V-23	6" MO GLOBE RHR TO RX HEAD SPRAY	41B	361021	N	1 3		0 1			93		N
2	R 550 H.2/5.1	A391			DWG 2654-3							
RHR-V-23+	6" MO GLOBE RHR TO RX HEAD SPRAY				1 3							
1												
RHR-V-24A	18" MO GLOBE LOOP A TEST THROTTLE	41B	361027	M	1 0		0 1			35+		N
2	R 474 8.1/K	A391			DWG 2648-3							
RHR-V-24A+	18" MO GLOBE LOOP A TEST THROTTLE				1 0							
1												
RHR-V-24B	18" MO GLOBE LOOP B TEST THROTTLE	41B	361027	M	1 0		0 1			35+		N
2	R 474 H.2/8.1	A391			DWG 2648-3							
RHR-V-24B+	18" MO GLOBE LOOP B TEST THROTTLE				1 0							
1												
RHR-V-26A	4" MO GATE HEX A OUT TO RCIC	41A	361723	A	1 1		0 1			58		N
2	R 475 8.2/K.5	V085			DWG P2-3311-N7/A							
RHR-V-26A+	4" MO GATE HEX A OUT TO RCIC				1 1							
1												
RHR-V-26B	4" MO GATE HX-B OUTLET TO RCIC	41A	361723	A	1 1		0 1			58		N
2	R 473 8.1/L.2	V085			DWG P2-3311-N7/A							
RHR-V-26B+					1 1							
1												
RHR-V-27A	6" MO GATE LOOP A TO SUPP POL SPRY	41A	361724	R	1 0							
2	R 495 K.3/4.1	V085			DWG P2-3311-N10							
RHR-V-27A+	6" MO GATE LOOP A TO SUPP POL SPRY				1 0							
1												
RHR-V-27B	6" MO GATE LOOP B TO POOL SPRAY	41A	361724	R	1 0							
2	R 495 M.1/7.7	V085			DWG P2-3311-N10							
RHR-V-27B+	6" MO GATE LOOP B TO POOL SPRAY				1 0							
1												
RHR-V-3A	18" MO GATE HX A OUTLET ISOL	41A	361730	B	1 3		0 1			33		N
2	R 544 J.9/8.5	V085			DWG P2-3313-N40							
RHR-V-3A+	18" MO GATE HX A OUTLET ISOL				1 3							
1												
RHR-V-3B	18" MO GATE HX B OUTLET ISOL	41A	361730	B	1 3		0 1			33		N
2	R 557 M.1/8.4	V085			DWG P2-3313-N40							
RHR-V-3B+	18" MO GATE HX B OUTLET ISOL				1 3							
1												
RHR-V-4A	24" MO GATE SUPP POOL LOOP A SUPPY	41A	361733	B	2 0		0 1			37		N
2	R 447 L.0/8.3	V085			DWG P2-3311-N40							
RHR-V-4A+	24" MO GATE SUPP POOL LOOP A SUPPY				1 0							
1												
RHR-V-4B	24" MO GATE SUPP POOL LOOP B OTLET	41A	361733	M	1 0		0 1			37		N

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2	R 522 L.2/8.3	V085			824-010648-02WN							
RHR-V-4B+	24" MO GATE SUPP POOL LOOP B OTLET				1 0							
1												
RHR-V-4C	24" MO GATE SUPP POOL LOOP C SUPPY	41A	361713	B	1 0		0 1			37		N
2	R 449 J.0/4.2	V085			DWG P2-3313-N40							
RHR-V-4C+	24" MO GATE SUPP POOL LOOP C SUPPY			:	1 0							
1												
RHR-V-40	4" MO GLOBE RHR LOOL B RETURN TC	41B	361020	A	2 0	2 1	0 0			21		N
2	R 552 M.7/8.3	A391			DWG 2645-3							
RHR-V-40+	4" MO GLOBE RHR LOOP B RETURN TC				2 0							
1												
RHR-V-42A	14" MO GATE OUTBOARD RETURN TO RPV	41A	361746	Y	1 0		0 1			42		N
2	R 527 J.0/6.0	V085			DWG P2-3311-N36							
RHR-V-42A+	14" MO GATE OUTBOARD RETURN TO RPV				1 0							
1												
RHR-V-42B	14" MO GATE RET TO RPV, OUTBOARD	41A	361746	Y	1 0		0 1			42		N
2	R 525 V.0/5.6	V085			DWG P2-3513-N/14							
RHR-V-42B+	14" MO GATE RET TO RPV, OUTBOARD				1 0							
1												
RHR-V-42C	14"GATE RHR RETURN TO RPV, OUTBO	41A	361746	Y	1 0		0 1			42		N
2	R 527 J.0/5.8	V085			DWG P2-3311-N36							
RHR-V-42C+	14"GATE RHR RETURN TO RPV,OUTBO				1 1							
1												
RHR-V-46C	6" CHECK LOOP CX MIN FLOW	41B	361038	R	2 0							
2	R 451 J.2/4.8	A391			DWG 2614-3							
RHR-V-47A	18"MO GATE RHR HX INLET ISOL	41A	361730	B	1 3		0 1			33		N
2	R 575 J.7/8.7	V085			DWG P2-3313-N40							
RHR-V-47A+	18" MO GATE RHR HX INLET ISOL				1 3							
1												
RHR-V-47B	18"GATE MO RHR HX INLET ISOL	41A	361730	M	1 3							
2	R 576 M.3/8.4	V085			DWG P2-3313-N-40							
RHR-V-47B+	18"GATE MO RHR HX INLET ISOL				1 3							
1												
RHR-V-48A	18" MO GLOBE RHR HEX A BYPASS BLOC	41B	361027	M	1 3		0 1			35+		N
2	R 552 J.0/8.7	A391			DWG 2648-3							
RHR-V-48A+	18" MO GLOBE RHR HEX A BYPASS BLOC				1 3							
1												
RHR-V-48B	18" MO GLOBE HEX B BYPASS BLOCK	41B	361027	M	1 3		0 1			35+		N
2	R 553 M.9/8.9	A391			DWG 2648-3							
RHR-V-48B+	18" MO GLOBE HEX B BYPASS BLOCK				1 3							
1												
RHR-V-49	4"MO GATE LOOP B TO FLOOR DRAIN TK	41A	361723	A	2 0		0 1			58		N
2	R 552 M.7/6.4	V085			DWG P2-3311-N7/A							
RHR-V-49+	4"MO GATE LOOP B TO FLOOR DRAIN TK				2 0							
1												
RHR-V-50A+	12" AO CHECK TEST CHECK LOOP A			R	2 3							
1												
RHR-V-50B+	12" AO CHECK TEST CHECK LOOP B			R	2 3							
1												

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TH	HL
RHR-V-52A	8" GLOBE RCIC STEAM TO RHR HX	42A	361931	M	1 1		0 1					N
2	R 574 H.9/8.7	F139			T SMB-00-10-EWP							
RHR-V-52A+	8" GLOBE RCIC STEAM TO RHR HX				1 1							
1												
RHR-V-52B	8" GLOBE RCIC STEAM TO RHR HX	42A	361931	M	1 1		0 1					N
2	R 575 V.1/9.2	F130			T SMB-001-10EWP							
RHR-V-52B+	8" GLOBE RCIC STEAM TO RHR HX				1 1							
1												
RHR-V-53A	12" MO GATE SHUTDOWN COOL LOOP A	41B	361024	M	1 3	2 1	0 1			26		N
2	R 516 K.3/4.1	A391			DWG 2659-3							
RHR-V-53A+	12" MO GATE SHUTDOWN COOL LOOP A				1 3							
1												
RHR-V-53B	12" MO GLOBE SHUTD COOL LOOP B;	41B	361024	M	1 3		0 1			99+		N
2	R 512 L/7.9 AZ 2560	A391			DWG 2658-3							
RHR-V-53B+	12" MO GLOBE SHUTD COOL LOOP B;				1 3							
1												
RHR-V-6A	18"MO GATE RHR PUMP A INLET BLOCK	41A	361730	B	1 3		0 1			33		N
2	R 435 K.3/8.2	V085			DWG P2-3313-N40							
RHR-V-6A+	18"MO GATE RHR PUMP A INLET BLOCK				1 3							
1												
RHR-V-6B	18"MO GATE RHR PUMP B INLET	41A	361730	B	1 3		0 1			33		N
2	R 434 L.0/8.3	V085			DWG P2-3311-N40							
RHR-V-6B+	18"MO GATE RHR PUMP B INLET				1 3							
1												
RHR-V-60A+	PROCESS SAMPLING CONN B			R	2 0							
1												
RHR-V-60B+				R	2 0							
1												
RHR-V-68A	16"GATE MO RHR HX SW ISOL	41A	361729	A	2 0		0 1			43		N
2	R 553 M.9/9.3	V085			DWG P2-3313-N-39-0							
RHR-V-68A+	16"GATE MO RHR HX SW ISOL				2 0							
1												
RHR-V-68B	16"MO GATE RHR HX SW ISOL	41A	361729	A	2 0		0 1			43		N
2	R 551 M.7/9.3	V085			DWG P2-3313-N-390							
RHR-V-68B+	16"MO GATE RHR HX SW ISOL				2 0							
1												
RHR-V-73A	RHR H EX A VENT SHELL SI	215	361205	R	1 3							
2	R 572 J8/9	B350			DWG 82120							
RHR-V-73A+	RHR H EX A VENT SHELL SI				1 3							
1												
RHR-V-73B	RHR H EX B VENT SHELL SI	215	361205	R	1 3							
2	R 572	B350			DWG 82120							
RHR-V-73B+	RHR H EX B VENT SHELL SI				1 3							
1												
RHR-V-74A	RHR H EX A VENT SHELL SI	215	361205	R	1 3							
2	R 572	B350			DWG 82120							
RHR-V-74A+	RHR H EX A VENT SHELL SI				1 3							
1												
RHR-V-74B	RHR H EX B VENT SHELL SI	215	361205	R	1 3							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / TEST / MFG MODEL NO.	ANL	F/O	C	FREQ	TM	HL
2	R 572	0350			DWG 82120						
RHR-V-74B+	RHR H EX B VENT SHELL SI				1 3						
1											
RHR-V-75A+	PROCESS SAMPLING CONN A			R	2 0						
1											
RHR-V-75B+	PROCESS SAMPLING CONN A H EX B O			R	2 0						
1											
RHR-V-8	20" GATE SHUTDOWN COOLING SUPPLY	41A	361749	M	1 3	0 1					N
2	R 504 H9/7.3	V085			P2313N33						
RHR-V-8+	20" GATE SHUTDOWN COOLING SUPPLY				1 3						
1											
RHR-V-87A	8" MO GATE RCIC STEAM CONDENSING	42A	361931	M	1 1	0 1					N
2	R 574 H.8/8.7	F130			T SMB-0010-EWP						
RHR-V-87A+	8" MO GATE RCIC STEAM CONDENSING				1 1						
1											
RHR-V-87B	8" MO GLOBE RCIC STEAM CONDENSING	42A	361931	M	1 1	0 1					N
2	R 575 H.8/9.0	F130			T SMB-001-10EWP						
RHR-V-87B+	6" MO GLOBE RCIC STEAM CONDENSING				1 1						
1											
RHR-V-89	14" TESTABLE CHECK ON SW X-TIE	69	361760	R	2 0						
2	R 553 N2/8.9	V085			DWG P2-2767-N-2						
RHR-V-89+	14" TESTABLE CHECK ON SW X-TIE				2 0						
1											
RHR-V-9	20" GATE SHUTDOWN COOLING SUPPLY	41A	361749	M	1 3	0 1				P	Y
2	C 509 120 D AZ R27	V085			DWG P2-3313-N33						
RHR-V-9+	20" GATE SHUTDOWN COOLING SUPPLY				1 3						
1											
ROA-AD-10	MCC ROOM I AUTO DAMPER	216	011001	R	1 0						
2	R 542 H.5/3.9	P014			P.O. 630-N-31408						
ROA-AD-10+					1 0						
1											
ROA-AD-11	MCC ROOM II AUTO DAMPER	216	011001	R	1 0						
2	R 542 H.7/8.1	P014			P.O. 630-N-31408						
ROA-AD-11+					1 0						
1											
ROA-AD-12	DC MCC ROOM AUTO DAMPER	216	011004	R	1 0						
2	R 480 J.0/8.3	M139			332-2799						
ROA-AD-12+					1 0						
1											
ROA-AD-13	RECOMB MCC RM I AUTO DAMPER	216	011001	R	1 0						
2	R 591 H.5/6.0	P014			332-2799						
ROA-AD-13+					1 0						
1											
ROA-AD-14	RECOMB MCC RM II AUTO DAMPER	216	011001	R	1 0						
2	R 591 H.9/7.4	P014			332-2799						
ROA-AD-14+					1 0						
1											
ROA-AD-15	ANA RM 1A AUTO DAMPER	216	011001	R	1 0						
2	R 563 H.8/4.8	P014			P.O. 630-N-31408						

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ROA-AD-15+					1 0							
1												
ROA-AD-17	ANA RM 18 AUTO DAMPER	216	011001	R	1 0							
2	R 563 M.8/4.2	P014			P.O. 630-N-31408							
ROA-AD-17+					1 0							
1												
ROA-AD-19		216			1 0							
2	R 548 L.0/4.0											
ROA-AD-19+					1 0							
1												
ROA-AO-AD10	AIR OPERATOR FOR ROA-AD-10				1 3							
2												
ROA-AO-AD11	MCC ROOM II AUTO DAMPER				1 3							
2	R 542 M.7/8.1											
ROA-AO-AD12	DC MCC ROOM AUTO DAMPER				1 3							
2	R 486 J.0/8.3											
ROA-AO-AD13	RECOMB MCC RMI AUTO DAMPER				1 3							
2	R 591 M.5/6.0											
ROA-AO-AD14	RECOMB MCC RM II AUTO DAMPER				1 3							
2	R 591 M.9/7.4											
ROA-AO-AD15					1 3							
2												
ROA-AO-AD17	ANA RM 18 AUTO DAMPER				1 3							
2	R 563 M.8/4.2											
ROA-AO-V1	R BLDG ISO VALVE				1 3							
2	R 572 D.0/4.0											
ROA-AO-V2	R BLDG ISO VALVE				1 3							
2	R 572 D.0/4.0											
ROA-FN-1A	SUPPLY FAN	64	145015		1 3							
2	R 572 N2/4.8	B515			54-0-9							
ROA-FN-1B	SUPPLY FAN	64	145015		1 3							
2	R 572 N2/4.8	B515			54-0-9							
ROA-V-1	84.0" R BLDG ISO VALVE	68	361101	M	1 3		0 2			14		N
2	R 578 N.7/5.7	B250			DWG A-206759							
ROA-V-1+					1 0							
1												
ROA-V-2	84.0" R BLDG ISO VALVE	68	361101	M	1 3		0 2			14		N
2	R 578 V.7/5.0	B250			DWG A-206759							
ROA-V-2+					1 0							
1												
RRA-CC-1	COOLING COIL FOR RRA-FC-1	67	037001	N	1 2						F	N
2	R 441 H.7/4.5	C780			P L-75-140-GR.6							
RRA-CC-10	COOLING COIL FOR RRA-FC-10	67		N	1 0							N
2	R 522 N.3/3.9	C780			76J-1195							
RRA-CC-11	COOLING COIL FOR RRA-FC-11	67		N	1 0							N
2	R 522 N.5/8.0	C780			76J-1196							
RRA-CC-12	COOLING COIL FOR RRA-FC-12	216	037003	R	1 0							
2	R 471 H.4/8.2	A089			76J-1197							
RRA-CC-13	COOLING COIL FOR RRA-FC-13	216	037003	R	1 0							

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EQUIPMENT NO. LV	DESCRIPTION PLANT LOCATION	CONTRACT MFG	QID	QS	USE TEST MFG MODEL NO.	ANL	F/O	C	FREQ	TM	HL
 2	 R 572 M.3/6.1	 A089			 76J-1198						
RRA-CC-14 2	COOLING COIL FOR RRA-FC-14 R 572 M.7/8.2	216 A089	037003	R	1 3 76J-1199						
RRA-CC-15 2	COOLING COIL FOR RRA-FC-15 R 548 M.4/4.5	216 A089	037003	R	1 3 76J-1200						
RRA-CC-17 2	COOLING COIL FOR RRA-FC-17 R 548 M.4/4.8	216 A089	037003	R	1 0 76J-1201						
RRA-CC-19 2		28			1 3						
RRA-CC-2 2	COOLING COIL FOR RRA-FC-2 R 441 K.2/8.3	67 C780	037001	N	1 2 P L-75-140-GR6					F	N
RRA-CC-20 2		28			1 3						
RRA-CC-3 2	COOLING COIL FOR RRA-FC-3 R 441 ..8/8.3	67 C780	037001	N	1 2 P L75-140 GR 6					F	N
RRA-CC-4 2	COOLING COIL FOR RRA-FC-4 R 441 M.4/4.1	67 C780	037001	A	1 0 P 748-427GR4	0 1				F	N
RRA-CC-5 2	COOLING COIL FOR RRA-FC-5 R 441 K.7/3.7	67 C780	037001	N	1 0 P 74-13-1427,GR5					F	N
RRA-CC-6 2	COOLING COIL FOR RRA-FC-6 R 441	67 C780	037001	N	1 0 P:L-75-140,GR.2					F	N
RRA-FC-1 2	RHR PUMP RM FC UNIT R 444 H.7/4.5	67 P295	130001	N	1 2 P.O. 2808-67					F	N
RRA-FC-1+ 1	RHR PUMP RM4 FAN COOLER ASSY R 443 H.7/4.3				1 2						
RRA-FC-10 2	MCC RM FC UNIT R 542 N.2/4.0	67 P295	130005	N	1 0 CIM9.4						N
RRA-FC-10+ 1	DIVII MCC FN COOLER ASSY R 522 N3/3.8				1 0						
RRA-FC-11 2	MCC RM FC UNIT R 542 H.5/8.0	67 P295	130005	N	1 0 CIM9.4						N
RRA-FC-11+ 1	DIV I MCC FN COOLER ASSY R 522 H5/8				1 0						
RRA-FC-12 2	DC MCC ROOM FAN COIL UNI R 471 H.4/8.1	216 B515	130006	R	1 0 13441H-1480-A-51						
RRA-FC-12+ 1	DC DIV I MCC FN COOLER ASSY R 471 H5/8				1 0						
RRA-FC-13 2	MCC ROOM FAN COIL UNIT OOLING SYS R 572 H/15	216 B515		R	1 0 13441H-1400-A51						
RRA-FC-13+ 1	H2 RECOMBINER MCC COOLER ASSY R 572 M3/6				1 0						
RRA-FC-14 2	MCC ROOM FAN COIL UNIT OOLING SYS R 572 M.5/4.1	216 B515		R	1 0						
RRA-FC-14+ 1	H2 RECOMBINER MCC COOLER ASSY R 572 M7/8				1 0						
RRA-FC-15 2	SAMPLE AND ANALYZER RM FAN COIL UN R 56C M.2/4.8	216 B515	130002	R	1 0 22A5-ADJUSTAX					F	
RRA-FC-15+ 1	SAMPLING N ANALY RM1A COOLER ASSY R 548 M5/4.5				1 0						

EQUIPMENT NO.	DESCRIPTION	CONTRACT	QID	US	USE	TEST	ANL	F/O	C	FREQ	TM	HL
LV	PLANT LOCATION	MFG			MFG MODEL NO.							
RRA-FC-17	ANALYZER RM FAN COIL UNIT	216	130003	R	1 0						F	
2	R 560 M.2/4.2	B515			S.O. 76J-1201							
RRA-FC-17+	SAMPLING N ANALY RM1A COOLER ASSY				1 3							
1	R 548 M5/4.7											
RRA-FC-19		28			1 3							
2												
RRA-FC-19+	FPC HEAT EXCH N PMP COOLER ASSY				1 3							
1												
RRA-FC-2	RHR PUMP ROOM FAN COIL U	67	130001	N	1 2						F	N
2	R 444 K.2/8.3	P295			P.O. 2808-67							
RRA-FC-2+	RHR PMP RM2 FN COOLER ASSY				1 2							
1	R 441 K.2/8.2											
RRA-FC-20		20			1 3							
2												
RRA-FC-20+	FPC HEAT CH N PUMP RM COOLER ASSY				1 3							
1												
RRA-FC-3	RHR PUMP ROOM FAN COIL U	67	130001	B	1 2						F	N
2	R 444 L.8/8.3	P295			P.O. 2808-67							
RRA-FC-3+	RHR PMP RM1 FAN COOLER ASSY				1 2							
1	R 441 L.8/8.0											
RRA-FC-4	HPCS PUMP ROOM FAN COIL	67	130001	A	1 0		0 1				F	N
2	R 441	P295			P.O. 2808-67							
RRA-FC-4+	HPCS PMP RM FAN COOLER ASSY				1 0							
1	R 444 M.5/4.1											
RRA-FC-5	LPCS PUMP ROOM FAN COIL	67	130001	B	1 0						F	N
2	R 444 K.7/3.9	P295			P.O. 2808-67							
RRA-FC-5+	LPCS PMP RM FAN COOLER ASSY				1 0							
1	R 441 K.7/3.8											
RRA-FC-6	RCIC PUMP ROOM FAN COIL	67	130001	N	1 0						F	N
2	R 444 H.6/8.0	P114			P.O. 2808-67							
RRA-FC-6+	RCIC PMP RM FAN COOLER ASSY				1 0							
1	R 441 H.6/7.7											
RRA-FN-1	FAN FOR RRA-FC-1	67	145011	N	1 2						F	N
2	R 443 H.7/4.3	P114			150							
RRA-FN-10	FAN FOR RRA-FC-10	67	145012	N	1 0							N
2	R 522 N3/3.8	P295			150							
RRA-FN-11	FAN FOR RRA-FC-11	67	145012	N	1 0							N
2	R 522 H5/8	P295			150							
RRA-FN-12	DC MCC ROOM RECIRC FAN	216	145013	R	1 0							
2	R 471 H5/8	B515			60PC/ADJUSTAX							
RRA-FN-13	FAN FOR RRA-FC-13	216	145013	R	1 0							
2	R 572 M3/6	B515			40PC/ADJUSTAX							
RRA-FN-14	FAN FOR RRA-FC-14	216	145013	R	1 0							
2	R 572 M7/8	B515			40PC/ADJUSTAX							
RRA-FN-15	FAN FOR RRA-FC-15	216	145013	R	1 0							
2	R 548 M5/4.5	B515			40PC/ADJUSTAX							
RRA-FN-17	13300 CFM ANAL RM 1B RECIRC FAN	216	145013	R	1 0							
2	R 548 M5/4.7	B515			40PC/ADJUSTAX							
RRA-FN-19	FPC HEAT EXCH & PMP RM FLO	28			1 3							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2												
RRA-FN-2	FAN FOR RRA-FC-2	67	145011	N	1 2						F	N
2	R 441 K.2/8.2	P114			150							
RRA-FN-20	FPC HEAT EXCH & PMP RM FLO	215			1 3							
2	R											
RRA-FN-3	FAN FOR RRA-FC-3	67	145011	N	1 2						F	N
2	R 441 L.8/8.0	P114			150							
RRA-FN-4	FAN FOR RRA-FC-4	67	145012	A	1 0		0 1				F	N
2	R 444 M.5/4.1	P295			245							
RRA-FN-5	FAN FOR RRA-FC-5	67	145011	N	1 0						F	N
2	R 441 K.7/3.8	P114			150							
RRA-FN-6	FAN FOR RRA-FC-6	67	145011	N	1 0						F	N
2	R 441 H.6/7.7	P114			135							
RRC-P-1A	RECIRCULATION PUMP	02835	233020	B	2 0		0 1				P	N
2	C 508 135 D AZ R22	B260			210079							
RRC-P-1A+	RECIRCULATION PUMP				2 0							
1	C 508 315 AZ 22 R											
RRC-P-1B	RECIRCULATION PUMP	02835	233020	B	2 0		0 1				P	N
2	C 508 315 D AZ R22	B260			210100							
RRC-P-1B+	RECIRCULATION PUMP				2 0							
1	C 508 315 AZ 22 R											
RRC-V-16A+	RRC PUMP SEAL PURGE INLE				2 0							
1	C											
RRC-V-16B+	RRC PUMP SEAL PURGE INLE				2 0							
1	C											
RRC-V-23A	24" MO GATE	02835	361907	B	2 0		0 1			37	P	Y
2	C 503 160 D AZ R16	A585			DWG 9210875V							
RRC-V-23A+	24" MO GATE				2 0							
1	C 503 160 D AZ R16											
RRC-V-23B+	24" MO GATE				2 0							
1	C 502 340 D AZ R17											
RRC-V-60A	IURRC RETURN TO RPV	02835	361401	B	2 0		0 1			99+	P	N
2	C 506 115 D AZ R24	I207			V999E201							
RRC-V-60A+	RRC RETJRN TO RPV				2 0							
1	C 506 115 D AZ R24											
RRC-V-60B	RRC RETJRN TO RPV	02835	361401	B	2 0		0 1			99+	P	N
2	C 506 293 D AZ R24	I207			V999E201							
RRC-V-60B+	RRC RETURN TO RPV				2 0							
1	C 506 293 D AZ R24											
RRC-V-67A	24" MO GATE	02835	361906	B	2 0	1 4	0 1			37		Y
2	C 502 102 D AZ R20	A585			21358-F							
RRC-V-67A+	24" MO GATE				2 0							
1	C 507 102 D AZ R20											
RRC-V-67B	24"MO GATE RRC PUMP DISCHARGE	02835	361906	B	2 0	1 4	0 1			37		Y
2	C 507 275 D AZ R20	A585			21358-F							
RRC-V-67B+	24" MO GATE				2 0							
1	C 507 275 D AZ R20											
RRC-V-85A	RRC PUMP A SEAL STAGING	02835		M	2 0		0 0					Y
2	C 501 L7/5.2											

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EQUIPMENT NO. LV	DESCRIPTION PLANT LOCATION	CONTRACT MFG	QID	QS	USE MFG MODEL NO.	TEST	AML	F/O	C	FREQ	TM	HL
RRC-V-85A+ 1	RRC PUMP A SEAL STAGING C 501 L7/5.2				2 0							
RRC-V-85B 2	RRC PUMP B SEAL STAGING C 501 K3/6.9	02835		M	2 0							
RRC-V-85B+ 1	RRC PUMP B SEAL STAGING C 501 K3/6.9				2 0							
RWCU-V-1 2	6"MO GATE INBOARD ISOL C 540 L/6 150 AZ	41A V085	361742	T	1 3 814-07054B-02WN		0 1			70		Y
RWCU-V-1+ 1	RWCU-V-1,INBOARD ISOL VALVE COMP. C 540 L/6 150 AZ				1 3							
RWCU-V-100 2	4"MO GATE FROM RECIRC PUMP C 500 69 D AZ R18	41A V085	361741	T	2 3 DWG P2-3311-N2		0 1				P	Y
RWCU-V-100+ 1	C 500 69D AZ R18				2 0							
RWCU-V-101 2	4"MO GATE RWCU FROM RPV DRAIN C 514 22 D AZ R18	41A V085	361741	T	2 3 DWG P2-3311-N2		0 1				P	Y
RWCU-V-101+ 1	C 514 22 D AZ R18				2 3							
RWCU-V-102 2	6" MO GLOBE FROM RECIRC PUMP C 502 59 D AZ R20	41B A391	361004	M	2 3 DWG 2655-3		0 1			76	P	Y
RWCU-V-102+ 1	C 502 59 D AZ R20				2 3							
RWCU-V-106 2	4" MO GATE RWCU WATER FROM RECIRC C 501 30 D AZ R17	41A V085	361741	T	2 3 DWG P2-3311-N2		0 1				P	Y
RWCU-V-106+ 1	C 501 30 D AZ R17				2 0							
RWCU-V-4 2	6"GATE MO CONT ISOL VALVE R 538 M.7/5.0	41A V085	361742	B	1 0 DWG P2-3311-N-4	2 1	0 1			70		N
RWCU-V-4+ 1	R 538 M7/5				1 0							
RWCU-V-40 2	6" GATE MO RWCU RETURN TO RFW LINE R 515 K.1/4.3	41A V085	361742	C	1 0 DWG P2-3311-N-4	2 1	0 1			70		N
RWCU-V-40+ 1	R 516 J1/5				1 0							
SGT-AD-1A1 2	AIR DAMPER FOR SGT-FN-1A1 R 576	28			1 0							
SGT-AD-1A2 2	AIR DAMPER FOR SGT-FN-1A2 R 576	28			1 0							
SGT-AD-1B1 2	AIR DAMPER FOR SGT-FN-1B1 R 576	28			1 0							
SGT-AD-1B2 2	AIR DAMPER FOR SGT-FN-1B2 R 576	28			1 0							
SGT-AO-2A 2	MOTOR OPERATOR SGT-V-2A R 580 H.6/5.3	68		R	1 0 A-508							
SGT-AO-2B 2	MOTOR OPERATOR SGT-V-2B R 580 H-6/5.3	68	018011	R	1 0 A508							
SGT-DV-1A1+ 1	DELUGE VALVE ASSY FOR SGT-FL-1A R 579	18	100099		2 0							
SGT-DV-1A2+	DELUGE VALVE ASSY FOR SGT-CF-1A-1	18	100099		2 0							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
1	R 579											
SGT-DV-1A3+	DELUGE VALVE ASSY FOR SGT-CF-1A-2	18	100099		2 0							
1	R 575											
SGT-DV-1B1+	DELUGE VALVE ASSY FOR SGT-FL-1B	18	100099		2 0							
1	R 575											
SGT-DV-1B2+	DELUGE VALVE ASSY FOR SGT-CF-1B-1	18	100099		2 0							
1	R 575											
SGT-DV-1B3+	DELUGE VALVE ASSY FOR SGT-CF-1B-2	18	100099		2 0							
1	R 578											
SGT-FN-1A1+	EXHAUST FAN FOR SGT-FU-1A-1				1 0						F	
1	R 576											
SGT-FN-1A2+	EXHAUST FAN FOR SGT-FU-1A-2				1 0						F	
1	R 576											
SGT-FN-1B1+	EXHAUST FAN FOR SGT-FU-1B-1				1 0						F	
1	R 576											
SGT-FN-1B2+	EXHAUST FAN FOR SGT-FU-1B-2				1 0						F	
1	R 576											
SGT-FU-1A+	STANDBY GAS FILTER UNIT I	18			1 0						F	
1	R 572 H.8/6.4	F030			W.0 59504							
SGT-FU-1B+	STANDBY GAS FILTER UNIT II	18			1 0						F	
1	R 572 J.5/6.4	F030			W.0 59504							
SGT-PCV-F1	2" CONT DELUGE VLV SGT-DV-1A1	18	236005	R	2 0							
2	R 580 H.3/3.8	F030			L-53874							
SGT-PCV-F2	2" CONT DELUGE VLV SGT-DV-1A2	18	236005	R	2 0							
2	R 580 H.3/2.9	F030			L-50871-1							
SGT-PCV-F3	2" CONT DELUGE VLV SGT-DV-1A3	18	236005	R	2 0							
2	R 576 H.3/3.9	F030			L-50871-1							
SGT-PCV-F4	2" CONT DELUGE VLV SGT-DV-1B1	18	236005	R	2 0							
2	R 576 H.3/3.8	F030			L-50871-1							
SGT-PCV-F5	2" CONT DELUGE VLV SGT-DV-1B2	18	236005	R	2 0							
2	R 580 H.3/3.7	F030			L-50871-1							
SGT-PCV-F6	2" CONT DELUGE VLV SGT-DV-1B3	18	236005	R	2 0							
2	R 580 H.3/3.8	F030			L-50871							
SGT-V-1A	18" MO BFLY SGT TIE	68	361103	M	1 0		0 1					N
2	R 583 H8/5.3	B250			A-206761							
SGT-V-1A+	18" MO BFLY SGT TIE				1 0							
1	R 583 H8/5.3											
SGT-V-1B	18" MO BFLY SGT TIE	68	361103	M	1 0		0 1					N
2	R 583 J3/5.3	B250			A-206761							
SGT-V-1B+	18" MO BFLY SGT TIE				1 0							
1	R 583 J3/5.3											
SGT-V-2A	18" AO BFLY SGT LINE TO SGT-FU-1A	68	361110	M	1 0		0 1					N
2	R 580 H7/5.3	B250			0657							
SGT-V-2A+	18" AO BFLYSGT LINE TO SGT-FU-1A				1 0							
1	R 580 H7/5.3											
SGT-V-2B	18" AO BFLY SGT LINE TO SGT-FU-1B	68	361110	M	1 0		0 1					N
2	R 580 J3/5.3	B250			0657							
SGT-V-2B+	18" AO BFLY SGTLINE TO SGT-FU-1B				1 0							
1	R 580 J3/5.3											

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EQUIPMENT NO. LV	DESCRIPTION PLANT LOCATION	CONTRACT MFG	QID	QS	USE MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
SGT-V-3A1 2	18" MO BFLY SGT-FN-1A2 R 576 H8/7.7	68 B250	361103	M	1 0 A-206761		0 1					N
SGT-V-3A1+ 1	18" MO BFLY SGT-FN-1A2 R 576 H8/7.7				1 0							
SGT-V-3A2 2	19" MO BFLY SGT-FN-1A1 R 576 J/7.7	68 B250	361103	M	1 0 A-206761		0 1					N
SGT-V-3A2+ 1	18" MO BFLY SGT-FN-1A1 R 576 J/7.7				1 0							
SGT-V-3B1 2	18" MO BFLY SGT-FN-1B2 INLET R 576 J3/6.8	68 B250	361103	M	1 0 A-206761		0 1					N
SGT-V-3B1+ 1	18" MO BFLY SGT-FN-1B2 INLET R 576 J3/6.8				1 0							
SGT-V-3B2 2	18" MO BFLY SGT-FN-1B1 INLET R 576 J3/7.4	68 B350	361103	M	1 0 A-206761		0 1					N
SGT-V-3B2+ 1	18" MO BFLY SGT-FN-1B1 INLET R 576 J3/7.4				1 0							
SGT-V-4A1 2	18" MO BFLY SGT-FN-1A1 OUTLET R 587 H8/7.1	68 B250	361103	M	1 0 A-206761		0 1					N
SGT-V-4A1+ 1	18" MO BFLY SGT-FN-1A1 INLET R 587 H8/7.1				1 0							
SGT-V-4A2 2	18" MO BFLY SGT-FN-1A2 DISCH R 587 J/7	68 B250	361103	M	1 0 A-206761		0 1			99+		N
SGT-V-4A2+ 1	18" MO BFLY SGT-FN-1A2 DISCH. R 587 J/7				1 0							
SGT-V-4B1 2	18" MO BFLY SGT-FN-1B1 DISCH R 585 J2/5.1	68 B250	361103	M	1 0 A-206761		0 1			99+		N
SGT-V-4B1+ 1	18" MO BFLY SGT-FN-1B1 DISCH. R 585 J2/5.1				1 0							
SGT-V-4B2 2	18" BFLY SGT-FN-1B2 DISCH R 585 J6/7.1	68 B250	361103	M	1 0 A-206761		0 1			99+		N
SGT-V-4B2+ 1	18" MO BFLY SGT-FN-1O2 DISCH. R 585 J6/7.1				1 0							
SGT-V-5A1 2	18 BFLY SGT-FN-1A-1 OUTLET R 587 H6/7	68 B250	361103	M	1 0 DWG A206761		0 1			99+		N
SGT-V-5A1+ 1	18" MO BFLY SGT-FN-1A-1 INLET R 587 H6/7				1 0							
SGT-V-5A2 2	19" MO BFLY SGT-FN-1A2 DISCH R 587 J/7.1	68 B250	361103	M	1 0 A206761		0 1			99+		N
SGT-V-5A2+ 1	18" MO BFLY SGT-FN-1A2 DISCH. R 587 J/7.1				1 0							
SGT-V-5B1 2	18" MO BFLY SGT-FN-1B1 OUTLET R 587 J2/7	68 B250	361103	M	1 0 A206761		0 1			99+		N
SGT-V-5B1+ 1	18" MO BFLY SGT-FN-1B1 OUTLET R 585 J2/7				1 0							
SGT-V-5B2 2	18" BFLY SGT-FN-1B2 OUTLET R 585 J6/7	68 B250	361103	M	1 0 A206761		0 1			99+		N
SGT-V-5B2+ 1	18" BFLY SGT-FN-1B2 OUTLET R 585 J6/7				1 0							
SLC-P-1A	SLC PUMP	02C41	233016	M	1 0		0 1					Y

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE	TEST / MFG MODEL NO.	ANL	F/O	C	FREQ	TM	HL
2	R 548 N.2/3.7	U055			2X3 TD-60							
SLC-P-1A+	COMPOSITE FOR SLC-P-1A	02C41			1 0							
1	R 548 N.2/3.7											
SLC-P-1B	SLC PUMP	02C41	233016	M	1 0		0 1					Y
2	R 549 H.2/3.7	U055			2X3TD-60							
SLC-P-1B+	COMPOSITE FOR SLC-P-1B	02C41			1 0							
1	R 549 H2/3.7											
SLC-TK-1+	COMPOSITE FOR SLC-TK-1				1 0							
1	R 548 H.8/3.7											
SLC-V-1A	4" MO GLOBE SLC TANK OUTLET	41B	361003	A	1 0		0 1			99+		N
2	R 550 H.6 /3.7	A391			DWG 2662-3							
SLC-V-1A+	COMPOSITE FOR SLC-V-1A	41B			1 0							
1	R 550 H6/3.7											
SLC-V-1B	4" MO GLOBE SLC TANK OUTLET	41B	361003	C	1 0		0 1			99+		N
2	R 548 H7/3.7	A391			DWG 2662-3							
SLC-V-1B+	COMPOSITE FOR SLC-V-1B	41B			1 0							
1	R 548 H7/3.7											
SLC-V-4A	SLC INLET TOWARD PRIMARY	02C41			1 0							
2	R 548 H.2/3.7	C515			1832159							
SLC-V-4A+	COMPOSITE FOR SLC-V-4A	215	361003	B	1 0	2 1	0 1			35+		N
1	R 548 H2/3.7											
SLC-V-4B	SLC INLET TOWARD PRIMARY	02C41			1 0							
2	R 548 H.2/3.8	C515			1832159							
SLC-V-4B+	COMPOSITE FOR SLC-V-4B	215	361003	B	1 0	2 1	0 1			35+		N
1	R 548 H2/3.8											
SW-AO-38A	AIR OPERATOR			R	4 3						P	
2	B 430 B.5/2.1	F130										
SW-AO-38B	AIR OPERATOR			R	4 3						P	
2	B 430 B.5/2.1	F130										
SW-P-1A+		23			4 3							
1	A 441 B3/2.1											
SW-P-1B+				R	4 3							
1	B 441 B3/2.5											
SW-PCV-38A	12" GLOBE SYSTEM PRESS CONTROL	42A	236003	T	4 3		0 1			27	P	N
2	B 430 B.5/2.1	F130			53A0711							
SW-PCV-38A+					4 3							
1		F130			53A0711							
SW-PCV-38B	12" GLOBE SYSTEM PRESS CONTROL	42A	236003	T	4 3		0 1			27	P	N
2	B 430 B5/2.1	F130			53A0711							
SW-PCV-38B+					4 3							
1		F130			53A0711							
SW-PI-3	PRESSURE INDICATOR	02		T	4 3	1 1	0 0			21	P	N
2												
SW-RV-1A	RHR HEAT EXCHANGER RELIEF VALVE			R	2 3							
2	R 548 J3/9						H11					
SW-RV-1B	RHR HEAT EXCHANGER RELIEF VALVE			R	2 3							
2	R 548 H3/9											
SW-TCV-11A	2.5" GLOBE COOLING WTR OUT OF WMA	42A	335004	T	4 3		0 1			11+		N
2	W 527 H.5/11.9	F130			NH-92-ED							

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EQUIPMENT NO. LV	DESCRIPTION PLANT LOCATION	CONTRACT MFG	QID	QS	USE MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
SW-TCV-11A+ 1	W 527 H.5/11.8				4 3							
SW-TCV-11B 2	2.5" GLOBE COOLING WTR OUT OF WMA W 527 L.6/10.4	42A F130	335004	T	4 3 NH-92-20		J 1			11+		N
SW-TCV-11B+ 1	W 527 L.6/10.4				4 3							
SW-V-1B 2	18" CHECK R 443 B3/2.3	41B A391	361045	R	4 3 DWG 2626-3							
SW-V-12A+ 1	A 433 C.3/1.2			R	4 3							
SW-V-12B+ 1	B 435 C.2/1.5			R	4 3							
SW-V-165A 2	18" BFLY POND B RETURN B 440 SW PUMPHOUSE	68 A180	361904	R	4 3 DWG73912-1						P	
SW-V-165B 2	18" BFLY POND A RETURN A 440 SW PUMPHOUSE	68 A180	361904	R	4 3 DWG73912-1						P	
SW-V-168A 2	.75" GLOBE SYPHON VENT A POND A 435 IN SPYPND A	233 B350	361201	B	4 3 P 76590		0 1			99+		N
SW-V-168B 2	.75" GLOBE SYPHON VENT B POND B 435 IN SPYPND B	233 B350	361201	B	4 3 P 76590		0 1			99+		N
SW-V-169A 2	.75" GLOBE SYPHON VENT - A POND A 435 IN SPYPND A	233 B350	361201	B	4 3 P 76590		0 1			99+		N
SW-V-169B 2	.75" GLOBE SYPHON VENT - B POND B 435 IN SPYPND B	233 B350	361201	B	4 3 P 76590		0 1			99+		N
SW-V-170A 2	18" BFLY RING HDR - B POND ISOL B 440 R/6.6	68 A180		R	4 3							
SW-V-170B 2	18" BFLY RING HDR - A POND ISOL A 440 R/8.4	68 A180		R	4 3							
SW-V-187A 2	6" GATE (MO) SW INTO FPX-HX-1A R	41A			2 3							
SW-V-187A+ 2	FPC-HX-7A INLET COMPOSITE R			R	1 0							
SW-V-187B+ 1	COMPOSITE TO SW-V-197B R				2 3							
SW-V-188A+ 1	FPC-HX-1A SW OUTLET COMPOSITE R			R	2 3							
SW-V-188B+ 1	FPC-HX-1B SW OUTLET COMPOSITE R				2 3							
SW-V-2A 1	20" STANDBY SVC WATER PUMP A 449 B3/2.6	215 B250	361107	M	4 3 A-216303		0 1			66		N
SW-V-2A+ 1	SW-P-1B DISCH. COMPOSITE A 449 B3/2.6				4 3							
SW-V-2B 1	20"MO BFLY SW-P-1B DISCH B 443 B/1.3	215 B250	361107	M	4 3 A-216303		0 1			66		N
SW-V-2B+ 1	COMPOSITE TO SW-P-13 B 443 B/1.3				4 3							
SW-V-201 2	0.5" SOLENOID SAMPLE TO SR-13 R 565 V/4.3	220 M095		R	1 0 MV229MS-L2							
SW-V-202	.5" CHECK SAMPLE TO H202 ANALYZER	220		R	2 0							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	R 565 N/4.3											
SW-V-203	.5" CHECK TSW TO H2 O2 ANALY	220		R	2 0							
2	R 565 N/4.3											
SW-V-204	.5" SOLENOID TSW TO H2 O2 ANALY	220		R	1 0							
2	R 565 V/5.0	M095			MV229MQ-L2							
SW-V-206	.5" SOLENOID SAMPLE TO SR-14	220		R	1 0							
2	R 565 N/5.0	M095			MV229MS-L2							
SW-V-207	.5" CHECK SAMPLE TO H2 O2 ANALYZER	220		R	2 0							
2	R 565 N15.0											
SW-V-208	.5" CHECK TSW SAMPLE TO H2 O2 ANAL	220		R	2 0							
2	R 565 N/5.0											
SW-V-209	.5" SOLENOID SAMPLE TO H2 O2 ANALY	220		R	1 0							
2	R 565 N/5.0	M095			MV229MS-L2							
SW-V-210	.5" SOLENOID H2 O2 ANALY TSW DISCH	220		R	1 0							
2	R 565 V/5.C	M095			MV229MS-L2							
SW-V-211	.5" SOLENOID SR-14 DISCHARGE	220		R	1 0							
2	R 565 V/4.3	B350			DWG 38130							
SW-V-212	.5" SOLENOID H2 O2 ANALY TSW DISCH	220		R	1 0							
2	R 565 V/4.3	M095			MV229MQ-L2							
SW-V-213	.5" SOLENOID SR-13 DISCHARGE	220		R	1 0							
2	R 565 N/4.3	M095			MV229MS-L2							
SW-V-24A	2" GATE SW OUT OF RHR PUMP MTR 2A	215		R	1 3							
1	R 446 L.7/8.3	B350			P 79020							
SW-V-24A+	COMPOSITE OF SW-V-24A				1 3							
1	R 446 L.7/8.3											
SW-V-24B	2" GATE SW OUT OF RHR PUMP MTR 2B	215		R	1 3							
1	R 447 L.7/8.3	B350			P 79020							
SW-V-24B+	COMPOSITE OF SW-V-24B											
1	R 447 L.7/8.3											
SW-V-24C	SSW OUT OF RHR PUMP MTR	215		R	1 3							
1	R 446 H.7/4.3	B350			P 79020							
SW-V-24C+	COMPOSITE OF SW-V-24C											
1	R 446 H.7/4.3											
SW-V-29	8"WD BFLY HPCS-P-2 DISCH	215	361108	Q	4 0		0 1			99+		N
1	A 442 AB/2.2	B250			9652							
SW-V-29+					4 0							
1	A 442 AB/2.2											
SW-V-3B	SW INLET TO DG-ENG-1B	41A	361725	M	4 0		0 1			99+		N
2	D 444 R.8/8.0	V085			DWG P2-3311-N-27A							
SW-V-34	SSW OUT OF RCIC PUMP RM	215		R	2 1							
2	R 460 V.3/8.3				282232							
SW-V-4A	DG-ENG-1A	41A	361725	M	4 0		0 1			99+		N
1	D 443 R.8/6.0	V085			DWG P2-3311-N-28							
SW-V-4A+	SSW FROM DG-ENG-1C											
1	D 443 R.8/6.0											
SW-V-4B	8" MO GATE SSW OUT OF 1B & COOL	41A	361725	M	4 0		0 1			99+		N
1	D 441 R.4/5.6	V085			DWG P2-3311-N-28							
SW-V-4B+	SSW FROM DG-ENG-1B											
1	D											

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	UID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
SW-V-4C	8"GATE SSW OUT OF HPCS DSL ENG GEN	41A	361725	M	4 0							
1	D 441 R.4/5.6	V085			DWG P2-3311-N28-E							
SW-V-4C+	COMPOSITE TO SW-V-4B				4 0							
1	D 441 R.4/5.6											
SW-V-44	SSW OUT OF LPCS PUMP MTR	215	361205	Q	1 0							
1	R 446 K.9/3.8	B350			DWG 79020							
SW-V-44+	COMPOSITE OF SW-V-44+											
1	R 446 K.9/3.9											
SW-V-54	2" GATE SSW OUT OF RRA-CC-4	215	361205	Q	1 0							
1	R 450 H.8/3.9	B350			DWG 79020							
SW-V-54+	COMPOSITE OF SW-V-54+											
1	R 450 H.8/3.9											
SW-V-69A+	18" GATE SSW RETURN TO COOL. TOWE.			R	4 3							
1	A 433 C.4/1.3											
SW-V-69B	18"GATE HJ RETURN TO COOL TOWERS	41A	361730	A	4 3		0 1			33		N
2	B 435 C.5/2.0	V085			DWG. P2-3313-N-43A							
SW-V-70A	18"MO GATE RETURN TO COOL TOWERS	41A	361730	A	4 3		0 1			33		N
2	A 433 C.4/1.6	V085			DWG. P2-3313-N-43A							
SW-V-70B	18"MO GATE RETURN TO TOWERS	41A	361730	A	4 3		0 1			33		N
2	B 435 C.5/2.4	V085			DWG. P2-3313-N-43A							
SW-V-70B+					4 3							
1	B 435 C.5/2.4											
SW-V-75A	SW TIELINE TO FUEL POOL	215	361205	Q	1 0		0 1			99+		N
2	R 530 H.7/9.4	B350			P 76630-2							
SW-V-75A+	SW TIELINE TO FUEL POOL				1 0							
1	R 530 H.7/9.4											
SW-V-75B	SW MAKE-UP TO FUEL POOL	215	361205	Q	1 0		0 1			99+		N
2	R 530 H.0/9.4	B350			P 76630-2							
SW-V-90	COOLING WATER INTO DMA-C C-51	215	361205	Q	4 0							
2	D 448 R.0/9.8	B350			DWG 79020							
SW-V-90+	COOLING WATER INTO DMA-C C-51				4 0							
1	W 448 R.0/9.8											
TIP-V-1	TIP ISOL SHEAR VLV	02C51	361995	B D	3 0	1 4	0 0			99+		Y
2	R 501 J.0/4.5	G080			P P136B1302G002							
TIP-V-2	TIP ISOL SHEAR VLV	02C51	361995	B D	3 0	1 4	0 0			99+		Y
2	R 501 J/4.5	G080			P P136B1302G002							
TIP-V-3	TIP ISOL SHEAR VLV	02C51	361995	B D	3 0	1 4	0 0			99+		Y
2	R 501 J/4.5	G080			P P136B1302G002							
TIP-V-4	TIP-ISOL SHEAR VLV	02C51	361995	B D	3 0	1 4	0 0			99+		Y
2	R 501 J/4.5	G080			P P136B1302G002							
TIP-V-5	TIP ISOL SHEAR VLV	02C51	361995	B D	3 0	1 4	0 0			99+		Y
2	R 501 J/4.5	G080			P P136B1302G002							
WEA-AD-51	CONTROL RM EXH DAMPER	216		R	4 3							
2	W 525 K.5/1.5	P014			N							
WEA-AD-51+	CONTROL RM EXHAUST DAMPER				4 3							
1	W 525 K.5/1.5											
WEA-AD-52	CABLE CHASE EXH FAN DAMPER			R	4 3							
2	W 525 J4/14.7	P014			N							
WEA-AD-52+	CABLE CHASE EXHAUST DAMPER				4 3							

EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT / MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
1	W 525 J4/14.7											
WEA-FN-51	CONTROL RM EXH FAN	28	145014	R	4 3							
2	W 525 K7/14.9	8250			745-9794							
WEA-FN-51+	CONTROL RM EXHAUST FAN				4 3							
1	W 525 K7/14.9											
WEA-FN-52	CABLE CHASE EXH FAN	28	145014	A	4 3					66		N
2	W 525 J4/14.7	8515			745-9794							
WEA-FN-52+	CABLE CHASE EXHAUST FAN				4 3							
1	W 525 J4/14.7											
WEA-FN-53A	BATT RM 1 EXH FAN	28	145014	A	4 3					46		N
2	W 525 J4/14.9	8515			745-9795							
WEA-FN-53A+	BATT RM 1 EXHAUST FAN				4 3							
1	W 525 J4/14.9											
WEA-FN-53B	BATT RM 2 EXH FAN	28	145014	A	4 3					66		N
2	W 525 K5/14.5	8515			745-9796							
WEA-FN-53B+	BATT RM 2 EXHAUST FAN				4 3							
1	W 525 K5/14.5											
WMA-AD-51A1	WMA-AH-51A SUC DAMPER	216	011001	R	4 3							
2	W 535 H8/12.4	P014			630-N-31408							
WMA-AD-51A1+	WMA-AH-51A SUCTION DAMPER				4 3							
1	W											
WMA-AD-51B1	WMA-AH-51B SUC DAMPER	216		R	4 3							
2	W 535 L4/11	P014			N							
WMA-AD-51B1+	WMA-AH-51B SUCTION DAMPER				4 3							
1	W											
WMA-AD-52/1	WMA-FN-52B SUCTION DAMPER	216	011001	R	4 3							
2	W 535 L5/11.8	P014			630-N-31408							
WMA-AD-52/1+	WMA-FN-52B SUCTION DAMPER				4 3							
1	W											
WMA-AD-52/2	WMA-FN-52B SUCTION DAMPER	216	011001	R	4 3							
2	W 535 L5/11.8	P014			630-N-31408							
WMA-AD-52/2+	WMA-FN-52B SUCTION DAMPER				4 3							
1	W											
WMA-AD-54A1	WMA-FU-54A SUC DAMPER	216	011001	R	4 3							
2	W 535 H7/12.5	P014			630-N-31408							
WMA-AD-54A1+	WMA-FU-54A SUCTION DAMPER				4 3							
1	W											
WMA-AD-54A2	WMA-FU-54A SUC DAMPER	216	011001	R	4 3							
2	W 535 H5/12.4	P014			630-N-31408							
WMA-AD-54A2+	WMA-FU-54A SUCTION DAMPER				4 3							
1	W											
WMA-AD-54B1	WMA-FU-54B SUC DAMPER	216	011001	R	4 3							
2	W 535 L5/11.1	P014			630-N-31408							
WMA-AD-54B1+	WMA-FU-54B SUCTION DAMPER				4 3							
1	W											
WMA-AD-54B2	WMA-FU-54B SUC DAMPER	216	011001	R	4 3							
2	W 535 L5/11	P014			630-N-31408							
WMA-AD-54B2+	WMA-FU-54B SUCTION DAMPER				4 3							
1	W											

EQUIPMENT NO. LV	DESCRIPTION PLANT LOCATION	CONTRACT MFG	QID	QS	USE MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
WMA-AH-51A 2	CONTROL RM AIR HANDLING UNIT W 525 J4/12	67 P295	012005	N	4 3 WO-5-5040							N
WMA-AH-51A* 1	CONTROL ROOM AIR HANDLING UNIT W				4 3							
WMA-AH-51B 2	CONTROL RM AIR HANDLING UNIT W 525 K4/10.5	67 P295		N	4 3							N
WMA-AH-51B* 1	CONTROL ROOM AIR HANDLING UNIT W				4 3							
WMA-AH-52A 2	CABLE RM AIR HANDLING UNIT W 525 K2/12.5	67 P295	012005	A	4 3 WO-5040	2 1	0 1			11*		N
WMA-AH-52A* 1	CABLE RM AIR HANDLING UNIT W 525 K2/12.5				4 3							
WMA-AH-52B 2	CABLE RM AIR HANDLING UNIT W 525 K2/12.5	67 P295	012005	A	4 3 WO-5040	2 1	0 1			11*		N
WMA-AH-52B* 1	CABLE RM AIR HANDLING UNIT W 525 K2/12.5				4 3							
WMA-AH-53A 2	CRIT. SWGR RM1 AIR HANDLING UNIT W 525 J2/10.5	67 P295	012005	N	4 3 WO-5040							N
WMA-AH-53A* 1	CRIT,SWGR RM1 AIR HANDLING UNIT W 525 J2/10.5				4 3							
WMA-AH-53B 2	CRIT. SWGR RM 2 AIRHANDLING UNIT W 525 K2/12.5	67 P295	012005	N	4 3 WO-MS-5040							N
WMA-AH-53B* 1	CRIT,SWGR RM 2 AIR HANDLING UNIT W 525 K2/12.5				4 3							
WMA-FN-51A 2	SUPPLY FAN FOR WMA-AH-51A W 525 J4/12	67 P295	145006	N	4 3 P270							N
WMA-FN-51A* 1	SUPPLY FAN FOR WMA-AH-51A W 525 J4/12				4 3							
WMA-FN-51B 2	SUPPLY FAN FOR WMA-AH-51B W 525 K4/10.5	67 P295	145006	N	4 3 P270							N
WMA-FN-51B* 1	SUPPLY FAN FOR WMA-AH-51A W 525 K4/10.5				4 3							
WMA-FN-52A 2	SUPPLY FAN FOR WMA-AH-52A W 525 J5/11.4	67 P295	145016	A	4 3 182-2	2 1	0 1			11*		N
WMA-FN-52B 2	SUPPLY FAN FOR WMA-AH-52B W 525 K5/11.4	67 P295	145016	A	4 3 182-2	2 1	0 1			11*		N
WMA-FN-53A 2	SUPPLY FAN FOR WMA-AH-53A W 525 J6/10.5	67 P295	145007	N	4 3 P300							N
WMA-FN-53B 2	SUPPLY FAN FOR WMA-AH-53B W 525 K6/12	67 P295	145007	N	4 3 P300							N
WMA-FN-54A 2	FAN FOR WMA-FU-54A W 535 H4/12	18 B515	145017	R	4 3 ES1110BR8844							
WMA-FN-54B 2	FAN FOR WMA-FU-54A W 535 L8/10.5	18 B515	145018	R	4 3 R-8844							
WMA-FU-54A* 1	CONTROL ROOM FILTER UNIT W 525	 F030			4 3 N-190-01							
WMA-FU-54B* 1	CONTROL ROOM FILTER UNIT W 525	 F030			4 3 N-190-01							
WMA-PCV-54A	DELGE DELUGE VALVE ASSEMBLY WMA-D	18	236006	R	4 3							

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EQUIPMENT NO. / LV	DESCRIPTION / PLANT LOCATION	CONTRACT	MFG	QID	QS	USE / MFG MODEL NO.	TEST	ANL	F/O	C	FREQ	TM	HL
2	W 530 J.3/12.4		F039			A-48011-6							
WMA-PCV-54B	DELGE DELUGE VALVE ASSEMBLY WMA-D	13		236006	R	4 3							
2	W 530 J.1/12.4		F039			A-48011-6							
WOA-V-51A	12.0"BFLY REMOTE INTAKE "A"(EHO)	216		361109	R	4 3							
2	W 530 K1/14.6		B250			0658							
WOA-V-51A+	12.0" BFLY REMOTE INTAKE "A" (EHO)					4 3							
1	W 530 K1/14.6												
WOA-V-51B	12.0"BFLY REMOTE INTAKE "B"(EHO)	216		361109	R	4 3							
2	W 530 K2/14.8		B250			0658							
WOA-V-51B+	12.0" BFLY REMOTE INTAKE "B" (EHO)					4 3							
1	W 530 K2/14.8												
WOA-V-51C	12.0"BFLY OUTSIDE AIR INTAKE (EHO)	216		361109	R	4 3							
2	W 530 K2/14.7		B250			0658							
WOA-V-51C+	12.0" BFLY OUTSIDE AIR INTAKE EHO					4 3							
1	W 530 K2/14.7												
WOA-V-51D+	6.0" BFLY REMOTE INLET PURGE VLV					4 3							
1	W 530 K1/14.6												
WOA-V-51E	6.0" BFLY REMOTE INLET PURGE VLV	216		361109	R	4 3							
2	W 530 K2/14.7		B250										
WOA-V-51E+	6.0" BFLY REMOTE INLET PURGE VLV					4 3							
1	W 530 K2/14.7												
WOA-V-52A	12.0"BFLY REMOTE INTAKE "A"(EHO)	216		361109	R	4 3							
2	W 531 K1/14.6		B250			0658							
WOA-V-52A+	12.0" BFLY REMOTE INTAKE "A" (EHO)					4 3							
1	W 531 K1/14.6												
WOA-V-52B	12.0"BFLY REMOTE INTAKE "B"(EHO)	216		361109	R	4 3							
2	W 531 K2/14.8		B250			0658							
WOA-V-52B+	12.0" BFLY REMOTE AIR INTAKE (EHO)					4 3							
1	W 531 K2/14.8												
WOA-V-52C	12.0"BFLY OUTSIDE AIR INTAKE(EHO)	216		361109	R	4 3							
2	W 531 K2/14.7		B250			0658							
WOA-V-52C+	12.0" BFLY OUTSIDE AIR INTAKE EHO					4 3							
1	W 531 K2/14.7												
WOA-V-52D	6.0" BFLY REMOTE INLET PURGE VLV	216			R	4 3							
2	W 531 K1/14.6		B250										
WOA-V-52D+	6.0" BFLY REMOTE INLET PURGE VLV					4 3							
1	W 531 K1/14.6												
WOA-V-52E	6.0" BFLY REMOTE INLET PURGE VLV	216			R	4 3							
2	W 531 K1/14.7		B250										
WOA-V-52E+	6.0" BFLY REMOTE INLET PURGE VLV					4 3							
1	W 531 K1/14.7												

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Q. 271.003

For each piece of safety-related equipment, provide the following information:

a. State the method of qualificaton used:

1. If by analysis or test, indicate the company that prepared the report, the reference report number and date of the publication.

2. If by test, describe whether it was a single or multi-frequency test and whether the forcing function was single axis or multiaxis.

3. If by analysis, describe whether static or dynamic, single or multiple-axis analysis was used.

4. Indicate the natural frequency (or frequencies) of the equipment.

b. Indicate whether the equipment has met the appropriate qualification requirements.

c. Indicate whether the equipment is required for: (1) hot standby; (2) cold shutdown; (3) both; or (4) neither.

d. Indicate the location of the equipment (i.e., the building and the elevation within the building).

e. State the availability for inspection (e.g., whether the equipment is already installed at the plant site).

f. Provide a compilation of the required response spectra (or time history) and the corresponding damping for each seismic and dynamic load specified for the equipment, including all other dynamic loads considered in the qualification. Indicate your method of combining all loads.

Response:

The list included in response to Question 271.002 shows the method used to qualify the safety-related equipment.

a1. The identification of company who prepared the report, the report number, and the report date are not included in the list because of the difficulty of putting them into a computer listing. All of that information is available at any time from our Qualification Identification (QID) file. The QID number is listed and the file contains all the qualification documentation.

a2. If the qualificaton was by test the method of qualification will be indicated under the test column. The right hand column indicates the frequency content of the test; the center column indicates the number of axes stimulated simultaneously, and the left hand column, if used, indicates the method of determining the resonant frequencies of the equipment. Refer to our response to Question 271.002 for identification of the codes used.

a3. If analysis was used in the qualification of the equipment, this will be indicated under the ANL (Analysis) column. The code found in Question 271.002 will summarize the type of analyses used as required.

a4. The lowest natural frequency found in any direction is indicated in the FREQ column. A "+" following the frequency indicates that no natural frequencies were found up to that frequency.

b. The first digit under QS in the safety-related equipment list supplied in Question 271.002 above shows whether the equipment meets the criteria shown in the answer to Question 271.001.

c. The USE column in the safety-related equipment list indicats the use during accident and normal conditions for each piece of equipment.

d. The building location for each piece of equipment is included in the safety-related equipment list.

e. An "A" in the QS column indicates that the equipment is properly installed. A "C" indicates that it was not installed on September 18, 1981. Due to the limitations of our computer system, the installation status of the components not yet qualified are not being transmitted. That status can be transmitted for any other equipment upon request.

f. A copy of the applicable response spectra is attached to each summary form in our QID file. They will be transmitted upon request. See response to Question 271.006.

Q. 271.004

Question:

"Identify all equipment which may be affected by fatigue due to vibration and describe your methods and criteria to qualify this equipment for such loading conditions."

Response:

A list of all equipment affected by the hydrodynamic load assocated fatigue as well as the analytical criteria used to qualify this equipment is defined in Section 3.0 and 5.0 of the WNP-2 "Dynamic Qualification Report", October 1982, transmitted to the NRC by our letter G02-82-827, dated October 5, 1982.

Q. 271.005

Question:

"Describe the results of any in-plant tests, such as in situ impedance tests, and any operational tests you have planned to confirm the qullification of any item of equipment."

Response:

Completed In-Plant Tests

Miscellaneous equipment items such as pipeline mounted solenoid valves, panels (see separate Question SER 3.10.1.2) HPCS diesel generator, switchgear, etc. have been tested to verify equipment response characteristics. The results of these supplemental in-plant tests are available in our qualification files. These results were used in conjunction with other data (analysis and test) to confirm and strengthen the qualification documentation. No in-plant testing was used solely as the only documentation of the equipment's seismic capability.

Planned In-Plant Tests

A total of 18 in-situ valve operability static deflection tests have presently been defined. Nine valve static deflection tests have been successful, i.e., the valves have operated, under load, smoothly and within the defined valve operational time limits. The remaining valve static deflection tests are to be completed as the equipment becomes available, as part of the pre-operational testing program.

Natural frequency and model response tests on air handling units are planned to verify analysis and establish similarity to the tested units.

It is the Supply System position that this response provides adequate description of the planned tests and identification of past tests. If additional detail on any specific past or planned test is required, it will be made available upon request.

Q. 271.006

To confirm the extent to which the safety-related equipment of the WNP-2 facility meets the requirements of GDC 2 and 4, the Seismic Qualification Review Team (SQRT) will conduct a plant site review. For selected equipment, SQRT will review the combined required response spectra (RRS) or the combined dynamic response and examine the equipment configuration and mounting. On this basis, SQRT will then determine whether the test or analysis which has been conducted demonstrates compliance with the RRS if the equipment was qualified by test or the acceptable analytical criteria if qualified by analysis.

The staff requires that a "Qualification Summary of Equipment" as shown on the attached pages, be prepared for each selected piece of equipment and submitted to the staff two weeks prior to the plant site visit. In this regard, you should make available at the plant site for SQRT reveiw, all the equipment. After the visit, you should then be prepared to submit certain selected documents and reports for further staff review.

Response:

The "Qualification Summary of Equipment" forms are available in our QID file. We will transmit those you select at your request.

Q. 271.007

Compare and correlate the systems described in Table 3.2-1 of the FSAR with the master systems list in the September 1982 program. Where systems have been omitted from the harsh environment qualification program provide the basis (e.g., not required for safe shutdown or accident mitigation). Identify the Class 1E functions for each system.

Response:

A detailed response to this question was provided in Enclosure 2 to letter G02-83-081, G. D. Bouchey to A. Schwencer, "Qualification of Safety-Related Electrical Equipment, NRC Request for Additional Information", dated January 31, 1983.

Q. 271.008

Identify, by categories listed in NUREG-0737, the components (plant tag number and/or manufacturer and model number) included in the qualification program in response to TMI Action Plan Requirements.

Response:

A detailed response to this question was provided in Enclosures 3 and 4 to letter G02-83-081, G. D. Bouchey to A. Schwencer, "Qualification of Safety-Related Electrical Equipment, NRC Request for Additional Information", dated January 31, 1983.

Q. 271.009

Provide a statement that flooding and aging analyses have been sufficiently completed.

Response:

The aging analyses have been completed as indicated in Section 4.2 of the WNP-2 Environmental Qualification Report for Safety-Related Equipment, transmitted to the NRC in September 1982.

The flooding analysis has been completed and will be available for review during the environmental audit.

Q. 271.010

Provide a statement that 1E equipment located in areas which experience a significant increase in radiation during a LOCA has been reviewed for possible damage to solid state devices.

Response:

Class 1E equipment is evaluated to the affects of radiation as part of the Environmental Equipment Qualification program. Included as part of the scope of equipment reviewed are equipment which contain solidstate electrical and electronic devices.

Q. 271.011

Indicate that the "accuracy" information missing from the summary sheets, Appendix C, as well as other pertinent information, will be available at time of audit.

Response:

Instrumentation accuracy is being obtained from specification and qualification data prepared by WNP-2 suppliers and designers for use with Code 1X, Levels 1 and 2 equipment (reference Appendix A of the Environmental Qualification Report). Some of this information will be available during the environmental audit. The summary sheets will be updated to include this data prior to fuel load.

Q. 271.012

Indicate that the effects of beta radiation have been included in the qualification program.

Response:

The WNP-2 qualification program does consider the effects of beta radiation. The program and its consideration of beta effects is described in the Supply System's "Environmental Qualification Report for Safety-Related Equipment" referenced in Section 3.11.

Q. 271.013

In accordance with the Commission Memorandum and Order CLI-80-21, dated May 23, 1980, indicate that replacement parts will be qualified to NUREG-0588 Category I requirements unless sound reasons to the contrary exist.

Response:

The Supply System is complying with the above by documenting sound reasons to the contrary where qualification to NUREG-0588, Category I, requirements cannot be achieved. Supply System procedures are in place to regulate this activity.

Q. 271.014

Indicate that the minimum set of safety equipment to provide a single success path to achieve the required safety functions will be qualified, or adequate justification will be provided, prior to fuel load.

Response:

The Supply System has performed an analysis to satisfy the above. This analysis or justification for interim operation is contained in Appendix D of the Environmental Qualification Report transmitted to the NRC in September 1982.

Q. 271.015

Indicate that safety equipment located inside primary containment has been qualified to the temperature/pressure profile described in Table 3.11-2 of the FSAR or provide justification.

Response:

Detailed temperature, pressure and humidity profiles are included in the Equipment Qualification Report referenced in 3.11. The safety equipment inside primary containment has been qualified to those profiles. The profiles are identical to those described in Table 3.11-2 for the first 24 hours. The Post LOCA Pressure/Temperature conditions as defined in the Equipment Qualification Report as required by NUREG-0588.

Note: A subsequent amendment to this response eliminated environmental qualification (EQ) of safety-related mechanical (SRM) equipment from the overall WNP-2 EQ program.

Q. 271.016

Before the Safety Related Mechanical (SRM) equipment audit items can be selected, the applicant must provide a statement that all SRM equipment in a harsh environment is included in the mechanical equipment qualification program and must indicate the qualification status of the SRM equipment. If qualification is not complete, briefly describe the tasks to be performed. Provide a list of SRM equipment which is considered qualified from which audit items may be selected. Your review of equipment should be essentially complete before items are selected. The staff review will concentrate on materials which are sensitive to environmental effects, for example, seals, gaskets, lubricants, fluids for hydraulic systems, diaphragms.

Response:

The Environmental Qualification Report (September 1982) detailed the Supply System's reevaluation program for Environmental Qualification of Safety-Related Mechanical Equipment. This reevaluation program of the harsh environmental effects on Safety-Related Mechanical (SRM) equipment has been completed, and a detailed list of evaluated items was contained in Enclosure 5 to letter GO2-83-81, G. D. Bouchey to A. Schwencer, "Qualification of Safety-Related Electrical Equipment, NRC Request for Additional Information," dated January 31, 1983. All items are qualified with these exceptions:

MSLC-FN-1
SGT-FN-1A1, 1A2, 1B1, 1B2
CEP-V-3A, 3B, 4A, 4B
CSP-V-6
CSP-AO-6, 9

Corrective action for non-qualified items has been defined and is being implemented.

Note: A subsequent amendment to this response eliminated environmental qualification (EQ) of safety-related mechanical (SRM) equipment from the overall EQ program.