UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
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ARLINGTON, TEXAS 76011-8064

October 19, 2001

Mr. J. V. Parrish
Chief Executive Officer
Energy Northwest
P.O. Box 968; MD 1023
Richland, Washington 99352-0968

SUBJECT: COLUMBIA GENERATING STATION - NRC INSPECTION REPORT NO. 50-397/01-06

Dear Mr. Parrish,

On September 13, 2001, the NRC completed an inspection at your Columbia Generating Station. The enclosed report documents the inspection findings, which were discussed on September 13, 2001, with members of your staff.

This inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. Within these areas, the inspection consisted of selected examination of procedures and representative records, observations of activities, and interviews with personnel.

Based on the results of this inspection, the NRC identified an issue of very low safety significance (Green). The issue involved inadequate design control measures to assure that design requirements were accurately translated into Technical Specification surveillance test procedures. The NRC has determined that a violation is associated with this issue. Because of the very low safety significance, the violation is being treated as a noncited violation, consistent with Section VI.A.1 of the Enforcement Policy. If you deny the noncited violation, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with copies to the Regional Administrator, U.S. Nuclear Regulatory Commission, Region IV, 611 Ryan Plaza Drive, Suite 400, Arlington, Texas 76011; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the Columbia Generating Station.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/NRC/ADAMS/index.html (the Public Electronic Reading Room).

Sincerely,

/**RA**/

Charles S. Marschall, Chief
Engineering and Maintenance Branch
Division of Reactor Safety

Dockets: 50-397
License: NPF-21

Enclosure:
NRC Inspection Report No.
50-397/01-06

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ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket No.:	50-397
License No.:	NPF-21
Report No.:	50-397/01-06
Licensee:	Energy Northwest
Facility:	Columbia Generating Station
Location:	Richland, Washington
Dates:	August 20 to September 13, 2001
Team Leader:	M.F. Runyan, Senior Reactor Inspector Engineering and Maintenance Branch
Inspectors:	L.E. Ellershaw, Senior Reactor Inspector Engineering and Maintenance Branch
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	W. M. McNeill, Reactor Inspector Engineering and Maintenance Branch
	J. F. Melfi, Project Engineer Project Branch E
Accompanying Personnel:	Robert Quirk, Consultant Beckman and Associates, Inc.
Approved By:	Charles S. Marschall, Chief Engineering and Maintenance Branch Division of Reactor Safety

SUMMARY OF FINDINGS

IR 05000397/01-06, on 08/20-9/13/2001, Energy Northwest, Columbia Generating Station, safety system design and performance capability.

The inspection was conducted by six regional inspectors and one contractor. The inspection identified one Green finding, which was characterized as a noncited violation. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using IMC 0609, "Significance Determination Process (SDP)." Findings for which the significance determination process does not apply are indicated by "No Color" or by the severity level of the applicable violation. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described at its Reactor Oversight Process website at http://www.nrc.gov/NRR/OVERSIGHT/index.html.

Cornerstone: Mitigating Systems

- Green. Inspectors identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion III, “Design Control,” for failure to properly translate design requirements into technical specification test procedures. The inadequate procedures resulted in incorrect acceptance criteria for tests of degraded voltage relay setpoints, and for the backup transformer loss of voltage settings.

  The finding was more than minor because, if left uncorrected, it could have resulted in an interruption of the design performance of the emergency core cooling system. The finding is of very low significance because the actual conditions that would have resulted in degraded performance never existed.

  The licensee had included the items in their corrective action program as Problem Evaluation Reports 201-1938 and 201-1841. This design control violation is being treated as a noncited violation (50-397/0106-02) in accordance with Section VI.A.1 of the Enforcement Policy (1R21.5).

Report Details

Summary of Plant Status

During the onsite inspection periods, the plant operated at or near full power.

1 REACTOR SAFETY

Introduction

An inspection of safety system design and performance capability was performed at Columbia Generating Station to verify that the initial design and subsequent modifications have preserved the design basis of the selected systems and related support systems. Additionally, the inspection effort served to monitor the capability of the selected systems to perform the current design basis functions. To achieve this goal, the team sampled inspectable aspects of the initiating event, mitigating system, and barrier cornerstones.

The probabilistic risk assessment model is based on the capability of the as-built safety systems to perform their intended safety functions successfully. The area and scope of the inspection were determined by reviewing the licensee's probabilistic risk analysis models to identify the most risk significant systems, structures, and components according to their ranking and potential contribution to dominant accident sequences and/or initiators. Deterministic effort was also applied in the selection process by considering recent inspection history, recent problem area history, and all modifications developed and implemented. The team reviewed in detail the Division I, II, and III emergency diesel generator systems and the ac electrical distribution system. The primary review prompted parallel review and examination of support systems, such as, electrical power, instrumentation, room cooling systems, and related structures and components.

The objective of this inspection was to assess the adequacy of calculations, analyses, engineering processes, and engineering and operating practices that were used to support the performance of the safety systems selected for review and the necessary support systems during normal, abnormal, and accident conditions. Acceptance criteria utilized by the NRC inspection team included NRC Regulations, the technical specifications, applicable sections of the Updated Final Safety Analysis Report, applicable industry codes and standards, and industry initiatives implemented by the licensee's programs.

An individual inspection of 10 CFR 50.59 safety evaluations was also conducted and is documented in this report.

1R02 Evaluations of Changes, Tests, or Experiments (71111.02)

a. Inspection Scope

The team reviewed a selected sample of 25 safety evaluations to verify that the licensee had appropriately considered the conditions under which the licensee may make changes to the facility or procedures or conduct tests or experiments without prior NRC approval.

The team reviewed a selected sample of 28 safety evaluation screenings, in which the licensee determined that safety evaluations were not required, to ensure that the licensee's exclusion of a full evaluation was consistent with the requirements of 10 CFR 50.59, "Evaluations of Changes, Tests, or Experiments."

The team reviewed five problem evaluation reports (PERs) initiated by the licensee that addressed problems or deficiencies associated with 10 CFR 50.59 requirements to ensure that appropriate corrective actions were being taken. The team also reviewed licensee self-assessments to ensure that problems or deficiencies were appropriately addressed.

b. Findings

No findings of significance were identified.

1R21 Safety System Design and Performance Capability (71111.21)

.1 System Requirements

a. Inspection Scope

The team reviewed the following attributes for the Division I, II, and III emergency diesel generators and ac electrical power distribution system: (1) process medium (water and air), (2) energy sources (electrical, fuel oil, and air), (3) control systems, and (4) equipment protection. The team then verified that procedural instructions to operators were consistent with operator actions required to meet, prevent, and/or mitigate design basis accidents. The review also considered requirements and commitments identified in the Updated Final Safety Analysis Report, technical specifications, design basis documents, and plant drawings.

The team verified that the system needs for the emergency diesel generators were met. The supply of air and the required amount of clean and tested diesel fuel and lubricating oil required by the technical specifications were verified through a review of the design of the emergency diesel generators' air start, fuel oil storage and transfer, and lubricating oil storage systems.

b. Findings

No findings of significance were identified.

.2 System Condition and Capability

a. Inspection Scope

The team reviewed the periodic testing procedures for the Division I, II, and III emergency diesel generators and the ac electrical power distribution system to verify that the design requirements were adequately demonstrated. The team verified the environmental qualification of a sample of system components for operation under design environmental conditions and the assumed operating parameters (e.g., voltage, speed, power, flow, temperature, and pressure).

The team also reviewed the systems' operations by conducting system walkdowns; reviewing normal, abnormal, and emergency operating procedures; and reviewing the Updated Final Safety Analysis Report, technical specifications, design calculations, drawings, and procedures. In addition, the team reviewed the list of active and closed standing orders and operator work-arounds to ensure no design assumptions were invalidated by past or current operator daily practices.

b. Findings

No findings of significance were identified.

.3 Identification and Resolution of Problems

a. Inspection Scope

The team reviewed a sample of problems identified by the licensee in the corrective action program to evaluate the effectiveness of corrective actions related to design issues. The sample included open and closed PERs going back 3 years that identified issues related to or affecting the selected systems.

The issues addressed by the PERs reviewed included:

- The disposition of technical specification interpretations to address system and component operability,
- The identification and correction of configuration control events and errors,
- The identification and correction of issues related to testing failures,
- The identification and corrective action associated with personnel errors, primarily in the operations area, and
- The identification and correction of safety-related setpoint issues.

b. Findings

No findings of significance were identified.

.4 System Walkdowns

a. Inspection Scope

The team performed walkdowns of the accessible portions of the Division I, II, and III emergency diesel generators and ac electrical power distribution system, as well as the required support systems. The walkdowns focused on the installation and configuration of power supplies, piping, components, and instruments. During the walkdowns, the team assessed:

- The placement of protective barriers and systems,
- The susceptibility to flooding, fire, or environmental conditions,
- The physical separation of trains and the provisions for seismic concerns,
- Accessibility and lighting for any required local operator action,
- The materiel condition and preservation of systems and equipment, and
- The conformance of the currently installed configuration of the systems with the design and licensing bases.

Support systems inspected by the team included the emergency diesel generator ventilation, starting air, fuel oil, lube oil and cooling water systems.

b. Findings

The team identified a concern related to the configuration and location of fire protection sprinkler heads in the emergency diesel generator rooms (all three divisions). The sprinkler heads were positioned slightly above the diesel generator in each room but approximately 4 feet from the side of the diesel generator and 14 feet above the floor (approximately 16 feet below the ceiling). Heat collectors were positioned over each sprinkler head. Each room had a smoke detector and a heat detector in the ceiling. The rooms were approximately 25 by 75 feet with a 30-foot ceiling. Upon actuation, the smoke detectors alarm in the control room where operators could dispatch a fire brigade. In the event of a fire, the heat detectors fill the sprinkler piping with water, and the individual sprinkler heads activate and spray water when their fusible links melt due to heat. There were 10 sprinkler heads on the long (75 foot) sides and three on the short (25 foot) sides of each diesel generator room, with the emergency diesel generator located in the center. The spray pattern was designed such that the diesel generator and the adjacent walkway around the diesel would be covered.

Each sprinkler head was covered by a sheet metal heat collector. The heat collectors had 12-inch square tops with sides that varied in depth from 1 to 3 inches. By design, two sides of the heat collector were trapezoidal in shape. The heat collectors were generally oriented horizontally; however, some were tilted out of the horizontal plane by approximately 15 to 20 degrees.

The team questioned the positioning of the sprinklers and the non-horizontal orientation of some of the heat collectors. The licensee had committed to National Fire Protection Association (NFPA) 13-1973 and 15-1973 in Final Safety Analysis Report Section F.2.1, which discusses the design of the diesel generator building. The NFPA code is silent on the subject of heat collectors. In a letter dated October 28, 1983, the licensee stated: "The glass bulb sprinkler heads have a 12" X 12" collector over the head to help collect heat and actuate the sprinkler heads." This letter was also referenced in the Safety Evaluation Report, NUREG-0892, Supplement 3, Section 9.5.1.7. (6) regarding the diesel generator building.

The team questioned whether the heat collectors would assist in actuating the sprinkler heads because they were not located directly over the potential heat source and were not always horizontal. There is some evidence that heat collectors may delay the actuation of sprinkler heads by slowing or blocking the flow of combustion gases in the location of the fusible links. In response to the team's concerns, the licensee provided installation information which showed that there were no requirements for the heat collectors to be oriented horizontally. Regarding the sprinkler heads not being over the heat source, the licensee stated that the design was to minimize the inadvertent actuation of the sprinklers and potential water-induced damage to the emergency diesel generators.

License Condition 2.C.(14) requires that the licensee shall implement and maintain in effect all provisions of the approved fire protection program described in Section 9.5.1 and Appendix F of the Final Safety Analysis Report for the facility and approved in Safety Evaluation Report, NUREG 0892, Supplement 3. The Safety Evaluation Report approved the fire protection design of the diesel generator building on the basis of a letter dated October 28, 1983. This letter stated that the heat collectors help collect heat and actuate the sprinkler heads.

Because it was not clear that the heat collectors would function as intended, the licensee initiated PER 201-1956. The corrective action established in the PER was to provide to the NRC a justification for the sprinkler design and, in particular, to explain how the heat collectors would collect sufficient heat to actuate the sprinkler heads. The licensee provided this evaluation to the NRC on October 2, 2001. Pending NRC review of the evaluation, this issue is considered unresolved (Unresolved Item 50-397/0106-01).

.5 Design Review

a. Inspection Scope

The team reviewed the ac power distribution system and standby diesel generator design, electrical load flow and voltage drop calculations, drawings, specifications, instrument setpoint and uncertainty calculations, Final Safety Analysis Report, technical specifications, and modifications to ensure the system would provide adequate power to ac components during normal operation, transients, and design basis events.

b. Findings

Inspectors identified a noncited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for failure to properly translate design requirements into technical specification test procedures. The inadequate procedures resulted in incorrect acceptance criteria for tests of degraded voltage relay setpoints, and for the backup transformer loss of voltage settings.

The team identified two failures to properly translate design requirements into technical specification surveillance test procedures. One failure involved degraded voltage relay setpoints not being consistent with procedures used to verify the ability of the emergency diesel generator to maintain voltages under a loss of coolant accident (LOCA) with a loss of offsite power (LOOP). As a result, it would be possible to meet related surveillance test procedure acceptance criteria but not be able to inject cooling water to the core or remove heat from the containment during a LOOP-LOCA. The second failure involved non-conservative surveillance test acceptance criteria for the backup transformer (TR-B) loss of voltage relay setting.

Procedures, ESP-RLY277345-X301, "4.16KV Emergency Bus Degraded Undervoltage (SM7) Channel Calibration," Revision 2, and ESP-RLY278345-X301, "4.16KV Emergency Bus Degraded Undervoltage (SM8) Channel Calibration," Revision 2, permit the degraded voltage setpoint to be as high as 107.28V (i.e., this is the top of the acceptance criteria range) which corresponds to 3755V. Under a degraded voltage condition on Buses SM-7 or SM-8, loads are stripped from the associated buses. The acceptance criteria of these two procedures are consistent with Calculation 2.12.58, "Second Level Undervoltage Relay Settings for Buses SM-7,- 8 and -4," Revision 4, and Technical Specification Surveillance Requirement 3.3.8.1.3 "Loss of Power Instrumentation," Table 3.3.8.1-1, "Loss of Power Instrumentation," Item 1.e.

Procedures, TSP-DG1/LOCA-B501, "Standby Diesel Generator DG1 LOCA Test," Revision 5, and TSP-DG2/LOCA-B501, "Standby Diesel Generator DG2 LOCA Test," Revision 5, used to verify acceptable DG-1 and DG-2 steady state operation under LOOP-LOCA conditions, permit Buses SM-7 and SM-8 steady state voltage to be in the range of 3740V to 4400V. This is consistent with Technical Specification Surveillance Requirement 3.8.1.19.c.3, but allows a steady-state voltage 15 volts lower than the degraded voltage maximum setpoint permitted by Procedures ESP-RLY277345-X301 and ESP-RLY278345-X301. Therefore, if the degraded voltage setpoint was near the upper end of its acceptable range and the diesel generator steady state voltage was near the bottom of its acceptable range, under LOOP-LOCA conditions, the degraded voltage device would trip and strip loads off Buses SM-7 and SM-8 despite all control devices meeting technical specification requirements.

On a LOOP-LOCA, Emergency Diesel Generators 1 and 2 start and, when adequate speed and voltage levels are attained, connect to critical 4160V Buses SM-7 and SM-8. Emergency core cooling system (ECCS) related loads, including residual heat removal (RHR), low pressure safety injection (LPSI), and standby service water (SW) pumps would then be sequenced onto Buses SM-7 and SM-8. If critical Buses SM-7 and/or SM-8 bus voltage subsequently decreased to the degraded voltage setpoint, the ECCS

loads would be stripped off the bus even though board voltage was above the 3740V permitted by Technical Specification 3.8.1.19.c.3. If the critical 4160V bus voltage recovered above the degraded voltage setpoint when the loads were removed, the ECCS and standby service water pumps would be re-sequenced on. However, if voltage again dropped below the degraded voltage setpoint, the pumps would trip again. The result would be the LPSI and RHR would not inject water into the core and RHR and SW would not be able to remove heat from the primary containment as assumed in LOCA accident analysis. However, the licensee engineers informed the team that surveillance test results had never been accepted within the non-conservative range of the test acceptance criteria. This meant that no periods existed where plant equipment was vulnerable to the effects discussed above. [Emergency Diesel Generator DG-3 was not impacted by this finding because Division 3 has a different degraded voltage setpoint.]

The second example of inadequate translation of design information into test acceptance criteria involved the TR-B loss of power setpoint. Calculation 2.12.18, "Primary Undervoltage Relays for Buses SM-7 and 8," Revision 3, and Technical Specification Surveillance Requirement 3.3.8.1.2, Table 3.3.8.1-1, Item 1.c establish the loss of power relay allowable values when powered from TR-B at $\leq$3135V. Contrary to these requirements implementing Procedures ESP-RLY27B71-X301, "Standby AC Power, TR-B Loss of Voltage Relay, E-RLY-27/B/7/1 Channel Calibration," Revision 0 and ESP-RLY27B81-X301, "Standby AC Power, TR-B Loss of Voltage Relay, E-RLY-27/B/8/1 Channel Calibration," Revision 0, Step 7.2.6 permitted voltage to be as high as 89.61 volts which corresponds to 3136.35V. This would permit satisfactorily completing a Surveillance Requirement even though the plant would not be in compliance with Technical Specifications and a design calculation. Once again, the licensee engineers confirmed that test results had never been accepted within the non-conservative range of the acceptance criteria.

The team determined that the two issues discussed above were of more than minor significance because they had a credible impact on safety. That is, test results that would have met all surveillance test acceptance criteria could have been accepted and resulted in a problem with plant response to an accident or transient, as described above. Using Phase I of the significance determination process, the team determined that the issue affected the mitigating systems cornerstone, because it potentially impacted core decay heat removal. However, the finding had very low risk significance because there was not an actual loss of safety function, the error was small relative to the overall acceptance criteria, an initial licensee assessment determined that the actual condition had never existed (test results in the non-conservative range of the criteria had never been recorded), a subsequent licensee assessment (delivered to the team following the exit meeting) indicated that the static exciter voltage regulator and voltage trim runback feature would tend to keep the voltage at a nominal level of 4200V, and control room operators would have the ability to manually increase the diesel generator voltage. Using Phase I of the significance determination process, the finding was determined to be a design deficiency that did not result in a loss of function per Generic Letter 91-18 (Revision 1), and was therefore screened as Green.

The team determined that the failure to properly translate design requirements into technical specification surveillance test procedures was a violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control." However, because of the very low safety significance, and because the licensee included the item in their corrective action program as Problem Evaluation Reports 201-1938 and 201-1841, this design control violation is being treated as a noncited violation (50-313/0106-02) in accordance with Section VI.A.1 of the Enforcement Policy.

.6 Safety System Testing

a. Inspection Scope

The team reviewed the program and procedures for testing and inspecting the Divsion I, II, and III emergency diesel generators and the loss of power instrumentation.

Additionally, on August 22, 2001, the team observed the performance of the monthly operability test conducted on the HPCS Diesel Generator, using Procedure OSP-ELEC-M703, "HPCS Diesel Generator Monthly Operability Test," Revision 14.

b. Findings

No findings of significance were identified.

4 OTHER ACTIVITIES (OA)

4OA6 Management Meetings

Exit Meeting Summary

The inspectors presented the inspection results to Mr. S. Oxford and other members of licensee management at the conclusion of the onsite inspection on September 13, 2001.

At the conclusion of this meeting, the team leader asked the licensee's management whether any materials examined during the inspection should be considered proprietary. Some proprietary information was identified. The team leader informed the licensee's management that no proprietary information would be included in the inspection report.

ATTACHMENT

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B. Sherman, Acting Licensing Manager

NRC:

M. Peck, Resident Inspector
G. Replogle, Senior Resident Inspector

ITEMS OPENED AND CLOSED

Opened

50-397/0106-01	URI	Design of Fire Protection Sprinkler System in Emergency Diesel Generator Rooms

Opened and Closed

50-397/0106-02	NCV	Failure to Translate Design Requirements to Surveillance Test Procedure Acceptance Criteria

DOCUMENTS REVIEWED

The following documents were selected and reviewed by the inspectors to accomplish the objectives and scope of the inspection and to support any findings:

Calculations:

162002-S, “Seismic Qualification of Diesel Generator Qualification,” Revision 3

91-0309-0A, "DCW Orifice Size Necessary to Balance SSW Flow through the DCW Heat Exchanger," Revision 0

E/I-02-90-01, “Low Voltage Systems Loading and Voltage Calculations,” Revision 6

E/I-02-91-03, “Div. 1, Div. 2, and Div. 3 Diesel Generator Loading Calculation,” Revision 7

E/I-02-01-1002, “Setting Range Determination for Instrument Loops RCIC-PIS-1 and RCIC-PIS-34,” Revision 0

ME-02-88-81, “Verification of DSA Relief Valve Setpoints and Capacities,” Revision 1

ME-02-91-46, “Sizing of Air Dryers for DG1A, DG1B, and HPCS Air Starting Systems,” Revision 0

ME-02-91-49, "Diesel Generator Air Start System," Revision 0

ME-02-91-51, “Diesel Generator Engine Lube Oil Sump Capacity,” Revision 0

ME-02-92-243, “DCW-HX-1C Design Performance Requirements,” Revision 1

ME-02-92-57, "DCW Heat Exchanger SSW Flow Balance," Revision 0

ME-02-94-42, “Time Div 1&2 Diesel Generator Engines Can Run Without Service Water,"

ME-02-94-44, “Diesel Starting Air System Capability to Meet the Number of Starts Required,” Revision 1

NE-02-87-20, “Oil Tank Capacity Versus Level,” Revision 1.

QID 118001, “Diesel Generator CIE & SRM Equipment,” Revision 4

Calculation Modification Records

92-0511 to ME-02-92-49, “Adequacy of the HPCS Diesel Generator Heat Exchanger,“ Revision 0
94-0721 to ME-02-92-49, “Adequacy of the HPCS Diesel Generator Heat Exchanger,” Revision 0

Safety Evaluations:

99-0025, PMR 99-0066-0, and BDC 99-0066-0A, Revision 0

99-0030, PPM 6.2.5 and PPM 1.3.40, Revision 0

99-0046, BDC 99-0081-0A, Revision 0

99-0057, PMR/BDC 96-0198-0A, PER 296-0777, and WO 00JVT0, Revision 0

99-0062, BDC 99-0103-0A, Revision 0

99-0063, FCR 98-0134-0-01, Revision 0

99-0068, BDC 0012101, Revision 0

00-0009, BDC 93-0037-15Q and WO 01008747, Revision 0

00-0010, BDC 98-0117-0A, Revision 0

00-0020, LDCN-LCS-00-037, Revision 0

00-0022, BDC 96-0153-0A, Revision 0

00-0025, PMR 89-0234-0 and BDC 89-0234-0A, Revision 0

00-0033, TER 00134001, Revision 0

00-0046, PMR 99-0140-0, Revision 0

00-0050, TMR 00-013, Revision 0

00-0052, PMR 99-0109-0 and BDC 0109-0A, Revision 0

00-0054, PER 200-1570, Revision 0

00-0068, BDC 0000000394, Revision 0

00-0074, PMR 94-0274-4 and BDC 94-0274-4F, Revision 0

01-0011, LDCN-FSAR-01-016, LDCN-LCS-01-017, PPM 6.5.20, PPM 6.5.20.QC, PPM 10.27.47, and OSP-NSSE-C401, Revision 0

01-0013, PPM 10.3.21 and PPM 10.3.22, Revision 0

01-0019, PER 201-0446, FAO 201-0446, and LDCN-LCS-01-030, Revision 0

01-0031, LDCN-FSAR-01-050, Revision 0

01-0042, TMR 01-034, Revision 0

Safety Evaluation Screenings:

EC 0000000745, Replace Dew Point Monitor CAS-MIS-10, Revision 0

PPM 2.1.1, Control Rod Drive System, Revision 30

PPM 2.1.3, TIP System, Revision 17

PPM 2.1.4, Rod Worth Minimizer, Revision 12

PPM 2.3.5, Standby Gas Treatment System, Revision 21

PPM 2.9.4, Auxiliary Steam System, Revision 20

PPM 3.1.2, Reactor Plant Startup, Revision 57

PPM 3.1.4, Minimum Startup List, Revision 24

PPM 3.1.10, Operating Data and Logs, Revision 25

PPM 3.2.3, RPV Pressurization for Excess Flow Check Valve Testing, Revision 6

PPM 3.3.1, Reactor Scram, Revision 39

PPM 4.AS.CP, AS.CP Annunciator Panel Alarms, Revision 6

PPM 4.602.A5, 602.A5 Annunciator Panel Alarms, Revision 13

PPM 4.7.1.1, Main Transformer Abnormal Operation, Revision 9

PPM 4.800.C5, 800.C5 Annunciator Panel Alarms, Revision 9

PPM 4.840.A5, 840.A5 Annunciator Panel Alarms, Revision 15

PPM 5.6.1, Station Blackout, Revision 9

PPM 5.8.8, Alternate Boron Injection, Revision 7

TER 00121301, Replace DEH Computer Power Supplies, Revision 0

TER 00134701, Removal of Air Hose Takeup Retrieval Assist System, Revision 0

TER 00135801, Replacement of Dissolved Oxygen Analyzers, Revision 0

TER 97-0031-0, Modify Service Box Cover Plates, Revision 0

TER 98-0108-0, Relocate Pressure Transmitters DO-PT-11A, -11B, -16, Revision 0

TMR 00-006, Install Jumper From 24 Vdc Power Supply to the Bottom Lamp Power Buss of Annunciator ANN-ANN-603/A7, Revision 0

TMR 00-010, Electrical Power to Yakima Building, Revision 0

TMR 01-003, Install Fuel Sipping Equipment, Revision 0

TMR 01-007, Temporary Power to Lights at Alternate HP Access Area, Revision 0

TMR 01-033, Bypass Turbine Exhaust Flow Transmitter, Revision 0

Procedures:

*8.3.289, “DG 1 and DG 2 Air Receiver Capacity Test,” Revision 0
*ECP-DG2/INSP-B101, “Diesel Generator DG2 Electrical Inspection,” Revision 3
*MMP-DG2-B102, “Diesel Generator 2 Mechanical Inspection,” Revision 2
*OSP-ELEC-M702, “Diesel Generator 2 Monthly Operability Test,” Revision 12
*OSP-ELEC-S701, “Diesel Generator 1 Semi-Annual Operability Test,” Revision 11
*TPS-DSA-B701, “DG1 Air Start Motor Test,” Revision 0
*TSP-DG2/LOCA-B501, “Standby Diesel Generator DG2 LOCA Test,” Revision 3
1.17.4, “Master Equipment List Update, Control, Use and Authority,” Revision 6.
10.20.14, “Diesel Engine Alternative Refuel Cycle Preventative Maintenance,” Revision 9
4.DG1, “DG1 Annunciator Panel Alarms,“ Revision 8
4.DG2, “DG2 Annunciator Panel Alarms,“ Revision 8
4.DG3, “DG3 Annunciator Panel Alarms,“ Revision 6
7.4.8.1.1.2.9, “Simultaneous start of all three diesel generators,” Revision 0
8.4.52, “Thermal performance monitoring of DCW-HX-1A1 and DCW-HX-1A2,” Revision 6
8.4.62, “Thermal performance monitoring of DCW-HX-1B1 and DCW-HX-1B2,” Revision 6
8.4.63, “Thermal Performance Monitoring of GCW-HX-1C,” Revision 6
DES 2-3, “Equivalent Changes,” Revision 1
ECP-DG3/INSP-B101, “HPCS-Gen-DG3 Electrical Inspection,” Revision 3
MMP-DG3-B103, “Diesel Generator DG-3 Mechanical Systems,” Revision 2
OSP-DO/IST-Q703, “DO-P-1A Operability,” Revision 6.
OSP-DO/IST-Q702, “DO-P-1B Operability,” Revision 3.
OSP-DO/IST-Q701, “DO-P-1A Operability,” Revision 4.
OSP-ELEC-M703,”HPCS Diesel Generator Monthly Operability Test,” Revision 14
OSP-ELEC-S703, “HPCS Diesel Generator Semi-Annual Operability Test,” Revision 12
OSP-INST-H101, “Shift and Daily Instrument Checks (Modes 1,2,3),” Revision 32
PDS-2, “Standard Drawing Formats and Drafting Practices Manual,” Revision 2
PPM 1.3.43, “Licensing Basis Impact Determinations,” Revision 17
SPES-2, “Appendix B - Development of EPN’s,” Revision B.
SWP-CAP-01, “Problem Evaluation Requests,” Revision 3
SWP-LIC-02, “Licensing Basis Impact Determinations,” Revision 0
SWP-MAI-01, “Work Management - Planning, Scheduling, and Work Activities,” Revision 9
TSP-DG1/LOCA-B501, “Standby Diesel Generator DG1 LOCA Test,” Revision 3
TSP-DG2/LOP-B501, “Standby Diesel Generator DG2 Loss of Power Test,” Revision 0
TSP-DSA-B703, “Air Start Motor Test,” Revision 0

Problem Evaluation Requests:

200-0013	200-1145	201-1073	201-1852	299-0635
200-0089	200-1453	201-1234	201-1926	299-0907
200-0170	200-2095	201-1291	201-1930	299-1046
200-0333	201-0388	201-1646	201-1945	299-1053
200-0343	201-0657	201-1783	298-0645	299-1125
200-0498	201-0692	201-1792	298-0950	299-2305
200-0607	201-1042	201-1803	298-0981	299-2547
200-0633	201-1072	201-1805.	299-0491	299-2632
200-0645				

Design Safety Analysis:

BDC 0000000394-700, Pages 1 through 25, April 18, 2001

Columbia Generating Station System Descriptions:

LO000182, AC Distribution, Revision 12
LO000200, Diesel Generator, Revision 8

Drawings:

E502, Sheet 2, Main One Line Diagram, Revision 49

E503, Sheet 6, Auxiliary One Line Diagram, Revision 79

E503, Sheet 7, Auxiliary One Line Diagram, Revision 74

E503, Sheet 8, Auxiliary One Line Diagram, Revision 77

E503, Sheet 10, Auxiliary One Line Diagram, Revision 61

E503, Sheet 11, Auxiliary One Line Diagram, Revision 53

E503, Sheet 12, Auxiliary One Line Diagram, Revision 73

E504, Vital One Line Diagram, Revision 51

EWD-25E-021, Electrical Wiring Diagram Pri Cntmt Atm Mon Sys H_2/O_2 Analyzer CMS-SR-13, Revision 0

EWD-25E-023, Electrical Wiring Diagram Pri Cntmt Atm Mon Sys H_2/O_2 Analyzer CMS-SR-13, Revision 0

EWD-46E-237, Electrical Wiring Diagram AC Electrical Distribution System Power Panel E-PP-7AAA, Revision 10

EWD-46E-241, Electrical Wiring Diagram AC Electrical Distribution System Power Panel E-PP-7AG, Revision 6

EWD-46E-253, Electrical Wiring Diagram AC Electrical Distribution System Power Panel E-PP-8AG, Revision 3

EWD-88E-001, Electrical Wiring Diagram Diesel Generator Buildiong Heating and Ventilation System Damper DMA-AD-11-1, 2 & 12-1, 2, Revision 10

46E082, AC Electrical Distribution Systems 4.16 KV SWGR E-SM-7 FDR BRKR E-CB-7/75/1 SR, Revision 11

46E096, AC Electrical Distribution Systems 4.16 KV BRKR E-CB-72/75 SH 1, Revision 11

46E109, AC Electrical Distribution Systems 4.16 KV SWGR E-SM-75 & E-SM-85Undervoltage, Revision 11

46E238, AC Electrical Distribution Systems Power Panel PP-7A-B, Revision 1

82E032, Turbine Building H &V System Fan TEA-FN-3B, Revision 1

SM-788dh, HVAC Duct Erection Plant & Sections Diesel Generator Build. El 441'-0" & 455'-0", Revision 72 (Waldinger Drawing)

SK-20, Sheet 1 of 3, "DO Storage Tank Outline HP Core Spray," Revision 9

Piping and Instrumentation Diagrams

517, "Flow Diagram, Demineralized Water System, All Buildings," Revision 92

551, "Flow Diagram, HVAC Circ & MU Water, S.W. Pump Houses & Diesel Generator Building," Revision 53

Kaman Drawings:

932221-001, Sheet 1, Monitor Wiring 50 D Containment Leak Unit II, Revision 0
932221-001, Sheet 2, Monitor Wiring 50 D Containment Leak Unit II, Revision E

Licensing Document Change Notice:

LDCN FSAR-01-00A

Plant Modification Records:

PMR 99-0140-0, Replacement 4Kv Breakers
PMR 99-0081-0, DC Coordination of E-DP-S1/HPCS Protective Devices
PMR 92-0178-2, Diesel Air Start System-Air Compressors

Maintenance Work Order Tasks

01022702	01009724-07	01013003-07	01022702-01	KBC9-01
29005159	01009724-08	01013003-08	01022702-11	NGR4-01
29008281	01009724-09	01013003-13	01022702-12	PJL5-01
29017391	01009724-10	01013293-01	01022702-17	PWZ-01
01000676-01	01010765-08	01020089-01	01022702-18	RDF9-01
01002882-01	01010766-01	01020090-01	01027138-01	RDG0-01
01003064-02	01013003-01	01021268-01	HRC7-01	TE88 01
01005078-06	01013003-05	01022700-01	HRR8-01	TE88 02
01009724-01	01013003-06	01022700-12	JPH2-01	XF42-01
01009724-02				

Maintenance Work Requests

AP1631
AP1632
AP1633
AP1634
AT 8496
AT 8495
AY 3099
AY 3098

Instrument Master Data Sheet(s)

DCW-LS-11B1, “Expansion Tank Makeup Control Valve DCW-V-1B1"
DCW-LS-11B2, “Expansion Tank Makeup Control Valve DCW-V-1B2"
DCW-TS-10A1, “Engine 1 High Jacket Water Temp. Alarm”
DCW-TS-10A2, “Engine 2 High Jacket Water Temp. Alarm”
DCW-TS-10B1, “Engine 1 High Jacket Water Temp. Alarm”
DCW-TS-10B2, “Engine 2 High Jacket Water Temp. Alarm”
DCW-TS-11A1, “Engine 1 High Jacket Water Temp. Shutdown “
DCW-TS-11A2, “Engine 2 High Jacket Water Temp. Shutdown”
DCW-TS-11B1, “Engine 1 High Jacket Water Temp. Shutdown”
DCW-TS-11B2, “Engine 2 High Jacket Water Temp. Shutdown”
DCW-TS-4, “HPCS DG High Jacket Water Temp. Shutdown”
DCW-TS-5, “HPCS DG High Jacket Water Temp. Alarm”
DLO-PS-3A1, “Diesel Lube Oil Engine Shutdown”
DLO-PS-3A2, “Diesel Lube Oil Engine Shutdown”
DLO-PS-3B1, “Diesel Lube Oil Engine Shutdown”
DLO-PS-3B2, “Diesel Lube Oil Engine Shutdown”
DO-LS-10A, “DO-P-1A Control Switch”
DO-LS-10B, “DO-P-1B Control Switch”
DO-LS-11A, “DO-TK-3A High Level”
DO-LS-12A, “DO-TK-3A Low Level”
DO-LS-12B, “DO-TK-3B Low Level”
DO-LS-13, “DO-TK-3C Hi Level (HPCS Day Tank)”
DO-LS-14, “DO-TK-4, Low Level Alarm (HPCS Day Tank)”
DO-LS-21, “Diesel Oil Day Tank Level Controls Operation of DO-P-2"

Operability Evaluations

PER 200-0633
PER 200-2178
PER 201-1042

Technical Evaluation Request

99-0100-B701, Surveillance Procedure DG1 Air Start Motor Test, Revision 0

Miscellaneous Documents:

"Seismic Analysis for WPPSS Nuclear Project Hanford #2," June, 1976
Diesel Generator Log Readings
NP-7149-D, "Summary of the Seismic Adequacy of Twenty Classes of Equipment Required for the Safe Shutdown of Nuclear Plants," Final Report, March 1991
System Description, Standby Service Water, Volume 3, Chapter 14
System Description, Diesel Generator, Volume 7, Chapter 8
Turbine and Diesel Generator Building Tour Logs
WNP-2 Trend Database for Diesel Generator 3 (HPCS) (55 elements)

Design Specifications:

Section 308, “High Pressure Core Spray System,” Revision 5
Section 310, “Standby Electrical Power (SEP) System,” Revision 4