

March 4, 2002

Mr. Gary Van Middlesworth
Site Vice-President
Duane Arnold Energy Center
Nuclear Management Company, LLC
3277 DAEC Road
Palo, IA 52324

SUBJECT: DUANE ARNOLD ENERGY CENTER
NRC INSPECTION REPORT 50-331/02-02(DRP)

Dear Mr. Van Middlesworth:

On February 14, 2002, the NRC completed an inspection at your Duane Arnold Energy Center. The enclosed report documents the inspection findings which were discussed on February 26, 2002, with Mr. R. Anderson and other members of your staff.

This inspection examined activities conducted under your license as they relate to reactor safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel. No findings of significance were identified.

Immediately following the terrorist attacks on the World Trade Center and the Pentagon, the NRC issued an advisory recommending that nuclear power plant licensees go to the highest level of security, and all promptly did so. With continued uncertainty about the possibility of additional terrorist activities, the Nation's nuclear power plants remain at the highest level of security and the NRC continues to monitor the situation. This advisory was followed by additional advisories and although the specific actions are not releasable to the public, they generally include increased patrols, augmented security forces and capabilities, additional security posts, heightened coordination with law enforcement and military authorities, and more limited access of personnel and vehicles to the sites. The NRC has conducted various audits of your response to these advisories and your ability to respond to terrorist attacks with the capabilities of the current design basis threat (DBT). From these audits, the NRC has concluded that your security program is adequate at this time.

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/

Bruce L. Burgess, Chief
Branch 2
Division of Reactor Projects

Docket No. 50-331
License No. DPR-49

Enclosure: Inspection Report 50-331/02-02(DRP)

cc w/encl: E. Protsch, Executive Vice President -
Energy Delivery, Alliant;
President, IES Utilities, Inc.
Robert G. Anderson, Plant Manager
State Liaison Officer
Chairperson, Iowa Utilities Board
The Honorable Charles W. Larson, Jr.
Iowa State Representative

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No: 50-331
License No: DPR-49

Report No: 50-331/02-02(DRP)

Licensee: Alliant, IES Utilities Inc.

Facility: Duane Arnold Energy Center

Location: 3277 DAEC Road
Palo, Iowa 52324-9785

Dates: January 1 through February 14, 2002

Inspectors: P. Prescott, Senior Resident Inspector
M. Kurth, Resident Inspector

Approved by: Bruce L. Burgess, Chief
Branch 2
Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000331-02-02(DRP), on 01/01-02/14/2002, IES Utilities, Inc., Duane Arnold Energy Center. Routine safety inspection.

This report covers a 6-week routine inspection. The inspection was conducted by resident inspectors. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using IMC 0609 "Significance Determination Process" (SDP). 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/NRC/OVERSIGHT/index.html>. Findings for which the SDP does not apply are indicated by "No Color" or by the severity level of the applicable violations.

A. Inspector Identified Findings

No findings of significance were identified.

B. Licensee Identified Findings

No findings of significance were identified.

Report Details

Summary of Plant Status

On January 1, 2002, operators reduced power from 1790 megawatts thermal (MW_{th})(full power) to 1770 MW_{th} , due to the “B” feedwater regulating valve (FRV) position oscillations. Pending resolution of design issues with the FRVs, the administrative limit on thermal power was reduced from 1790 to 1770 MW_{th} , and corresponding rated electric output was reduced from 614 to 607 MW_e . The plant continued operating at its 1770 MW_{th} administrative limit until January 25, when during switching of its electrical supply, the “B” motor-generator set scoop tube ran back 1.8 percent and automatically locked up. The runback lowered power by 10 MW_{th} . Approximately one hour later, the scoop tube lock was reset and thermal power was returned to 1770 MW_{th} . On January 25, reactor power was lowered to approximately 800 MW_{th} to troubleshoot and perform maintenance on the “B” FRV and feedwater minimum flow valve. The unit returned to full power on January 27. On January 29, power was increased to 1790 MW_{th} , the “B” FRV was observed oscillating and power was returned to 1770 MW_{th} . On February 11, the licensee determined to report “percent power” as a percentage of 1770 MW_{th} . Consistent with this definition, the plant remained at 100 percent power for the remainder of the inspection report period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R04 Equipment Alignment (71111.04)

a. Inspection Scope

The inspectors performed a partial walkdown of accessible portions of the system listed below to verify system operability. Items reviewed in the inspectors’ walkdown included the following: verification of the correct valve position of valves in the primary system flowpath using the system piping and instrumentation drawings (P&IDs) and system mechanical checklist; verification of breaker alignments using the system electrical checklist; observation of instrumentation valve configurations and appropriate meter indications; verification of lubrication and cooling of major components by direct observation of the components; observation of proper installation of hangers and supports during the walkdown; and verification of operational status of support systems by direct observation of various parameters. Control room switch positions for the system were also observed. The inspectors also evaluated other conditions such as adequacy of housekeeping, the absence of ignition sources, and proper component labeling. The walkdown was performed while maintenance was being conducted on the corresponding train.

- “B” Residual Heat Removal (RHR) System
- “B” Emergency Service Water System

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

a. Inspection Scope

The inspectors walked down risk significant areas looking for any fire protection degraded conditions. Open fire protection impairment requests were reviewed to prioritize the inspection of plant area fire plan (AFP) zones in addition to discussions with the fire protection program engineer. During the walkdowns, emphasis was placed on the following items: control of transient combustibles and ignition sources; area material condition; operational lineup and effectiveness of the fire protection systems, equipment, and features; and the material condition and operational status of fire barriers used to prevent fire damage or fire propagation.

In particular, the inspectors verified that all observed transient combustibles were being controlled in accordance with the licensee's administrative control procedures. In addition, the physical condition of fire suppression devices were observed, including overhead sprinklers, to verify that any observed deficiencies did not impact the operational effectiveness of the system. Included in the observations were the following items: the physical condition of portable fire fighting equipment, such as fire extinguishers, to verify that the equipment was located appropriately and that access to the extinguishers was unobstructed; verification that fire hoses were installed at their designated locations and that the physical condition of the hoses were satisfactory and access unobstructed; and verification of the physical condition of passive fire protection features such as fire doors, ventilation system fire dampers, fire barriers, and fire zone penetration seals to ensure that the items were properly installed and in good physical condition. Using the Fire Plan Volume II, "Fire Brigade Organization," the following area was inspected:

- AFP-6, "Reactor Building RHR Valve Room," Revision 22
- AFP-7, "Reactor Building Laydown Area, Corridor and Waste Tank Area, and Spent Resin Tank Room," Revision 22
- AFP-8, "Reactor Building Standby Gas Treatment System and MG [Motor-Generator] Set Rooms," Revision 22

b. Findings

No findings of significance were identified.

1R12 Maintenance Rule Implementation (71111.12)

a. Inspection Scope

The inspectors reviewed the licensee's implementation of the maintenance rule requirements for the systems or components listed below. The systems or components were selected based upon recent performance problems and the risk significance classification of the systems in the maintenance rule program. The inspectors independently verified the licensee's implementation of the maintenance rule for these systems by verifying that these systems were properly scoped within the maintenance rule in accordance with 10 CFR 50.65; that all failed structures, systems, or components (SSCs) were properly categorized and classified as (a)(1) or (a)(2) in accordance with 10 CFR 50.65; that the performance criteria for SSCs classified as (a)(2) were appropriate; and that the goals and corrective actions for SSCs classified as (a)(1) were acceptable. The inspectors also verified that issues were identified at an appropriate threshold and entered in the corrective action program. The following systems were reviewed:

- Core Spray System
- Fuel Pool Cooling System
- Reactor Core Isolation Cooling System
- Standby Liquid Control System

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessment and Emergent Work Evaluation (71111.13)

a. Inspection Scope

The inspectors reviewed the licensee's scheduling, configuration control, and performance of planned maintenance and emergent work activities. Specifically, the inspectors reviewed the risk assessment of scheduled maintenance activities associated with work weeks 4, 5 and 6. Work week 4 included planned work on the power supply 1Y2A. The inspectors noted during the review that the probabilistic risk assessment model did not properly model the loss of the 120 volt alternating current (AC) instrument bus. The licensee initiated corrective actions and documented the issue in Action Request (AR) 29849.

Work week 5 included work on the "A" standby gas treatment system and testing of the "B" FRV to determine the cause of valve oscillations at full power operations. The inspectors closely monitored this testing. No problems were noted during work week 5 activities. Work week 6 included work on the "A" trains of RHR and RHR service water. Also, a spare drywell cooler was used as a mockup to test whether a vendor recommended epoxy could be successfully used to repair a leak on a drywell cooler.

The repair of the simulated leak was completed satisfactorily, with no intrusion of the epoxy into the well water side of the cooler.

The inspectors verified that scheduled and emergent work activities were adequately managed. This included observation of the licensee's programs for conducting maintenance risk safety assessments and the assessment and management of online risk, and verification of the licensee's planning and risk management tools. Licensee actions to address increased online risk were verified during these periods, including establishing compensatory actions, minimizing the duration of the activity, obtaining appropriate management approval, and informing appropriate plant staff. These actions were accomplished when online risk was increased due to maintenance on risk-significant SSCs. Finally, portions of the maintenance activities were observed to ensure proper management oversight and return to service of the SSCs in a timely manner.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed the technical adequacy of operability evaluations to ensure that the system operability was properly justified and the system remained available, such that no unrecognized increase in risk occurred. The following operability evaluation was reviewed:

- AR 29514, "Quad Cities-1 Reported a Technical Specification Required Shutdown due to a Jet Pump Beam Failure on the #20 Jet Pump"
- AR 29336, "Operability Evaluation Concerning Non-zero Flow Indications on Flow Indicator FI-2309 While in the Standby Condition" (HPCI [High Pressure Coolant Injection] Flow Controller)

b. Findings

No findings of significance were identified.

1R16 Operator Workarounds (OWAs) (71111.16)

a. Inspection Scope

The inspectors reviewed operator workarounds to identify any potential effect on the function of mitigating systems, or the operator's ability to respond to an event and implement abnormal and emergency operating procedures.

- AR 28711, "Prepare Modification Package to Replace Honeywell Load Controllers with Moore Controllers for the Chillers"

The inspectors also reviewed the cumulative effects of OWAs. There were eight outstanding OWAs reviewed. The inspectors looked at the impact of reliability, availability, and potential for mis-operation of the impacted systems.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors observed selected post-maintenance tests and reviewed test data. The inspectors verified that the post-maintenance tests observed demonstrated that the systems and components were capable of performing their intended safety function. Included in the review were the applicable sections of Technical Specifications (TS) requirements, the Updated Final Safety Analysis Report (UFSAR), and appropriate plant procedures. Following the completion of the tests, the inspectors verified that the test equipment was removed and that the equipment was returned to a condition in which it could perform its safety function.

- Corrective Work Order (CWO) A53427, "Install Capacity Bank as Designed by Alliant Energy Substation Design Group"
- CWO A57546, "CV 1621 is Cycling Approximately 5 to 6 Percent Erratically from 63 to 56 Percent. Perform Diagnostic Testing and Troubleshooting."
- CWO A56788, "Leak On Standby Gas Treatment System Air Inlet Isolation Damper AV7602A-O Operator Head"

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors observed surveillance testing on risk-significant equipment, verified that the SSCs selected were capable of performing their intended safety function and verified the surveillance tests satisfied the requirements contained in TS, the UFSAR, and licensee procedures. During surveillance testing observations, the inspectors verified the following items: the test was adequate to demonstrate operational readiness consistent with the design and licensing basis documents; the testing acceptance criteria were clear; the impact of the testing had been properly characterized during the pre-job briefing; the test was performed as written and all testing prerequisites were satisfied; and the test data was complete, appropriately verified, and met the requirements of the testing procedure. Following the completion of the test, the

inspectors verified that the test equipment was removed and that the equipment was returned to a condition in which it could perform its safety function.

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications (71111.23)

a. Inspection Scope

The inspectors reviewed one temporary modification package, safety evaluation, and installation work order. The inspectors verified revisions made to drawings and procedures and the installation of the temporary modification. The temporary modification was discussed with the system engineer.

- Temporary Modification Permit Number 02-004, "Lift Leads to MO5711A, MO5726A to Ensure They Remain in the Closed Position and Positive Cooling Water Isolation to DW [Drywell] Cooler 1VCC004 is Assured"

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

a. Inspection Scope

The inspector reviewed the licensee's determination of Performance Indicators (PI) for the mitigating systems cornerstone (safety system unavailability - HPCI) to verify that the licensee accurately determined these performance indicators and had identified all occurrences required by these indicators. The accuracy and completeness of the data was assessed against the criteria specified in Nuclear Energy Institute 99-02, Revision 2, "Regulatory Assessment Performance Indicator Guideline." Specifically, the inspector reviewed the licensee's ARs, operator logs and performance indicator data for the 3rd Quarter 2001 to ensure that there were no PI occurrences that were not identified by the licensee. The inspector interviewed members of the licensee's staff who were responsible for performance indicator data acquisition, verification, and reporting, to verify that their review and assessment of the data was adequate. The inspectors identified that unplanned unavailability hours had been incorrectly attributed to planned unavailability hours. The licensee corrected this oversight. No PI limits were exceeded.

b. Findings

No findings of significance were identified.

4OA3 Event Follow-up (71153)

a. Inspection Scope

The inspectors reviewed Licensee Event Reports detailed below using inspection Procedure 71153. The inspectors reviewed the licensee's root cause reports and corrective actions for these events.

- .1 (Closed) Licensee Event Report (LER) 50-331/2001-007: Unplanned High Pressure Coolant Injection System Inoperability due to an Oil Leak Caused by Missing Front Ferrule in a Compression Fitting. On October 30, the HPCI system was declared inoperable due to an oil leak. The leak was discovered during a walk-down by a system engineer. The leak was located on a compression fitting in the oil supply line to the HPCI turbine over-speed trip device. The amount of leakage (estimated at 90 drops per minute) was smaller than the oil system's makeup capacity, but the proximity of the leak to high temperature steam piping resulted in the unplanned inoperable condition. The cause of the leak was a missing front ferrule in the compression fitting. The root causes were improper initial installation of the fitting and poor workmanship during re-assembly of the oil line during the last refueling outage. The fitting was repaired and the HPCI system returned to operable status the following day. The inspectors reviewed the licensee's corrective actions and found that the issues of workmanship and contractor oversight were adequately addressed. The inspectors determined the event had low safety significance. The HPCI system was inoperable for only a short duration; well within the system's allowed outage time. This item is closed.
- .2 (Closed) LER 50-331/2001-005: Licensed Power Level Exceeded due to Use of Non-conservative Constant in Heat Balance Calculation. On October 3, 2001, the licensee submitted this voluntary LER after vendor notification of a generic problem identifying that the input constant for the moisture carryover fraction used in the process computer for heat balance calculation was non-conservative. This error caused the reactor power calculation to be $1.3 \text{ MW}_{\text{th}}$ lower than actual. Reactor power was administratively reduced by 2 MW_{th} to ensure the licensed maximum power level was not exceeded. The non-conservative constant had been used since the initial plant startup in 1974. The cause of the heat balance calculation error was due to the use of the non-conservative design value instead of the more accurate actual test data in the process computer. The reason the actual test data was not used could not be determined. The inspectors determined the error was not safety significant due to the small increase in rated thermal power ($<0.1\%$). Due to fluctuations in the reactor power level for boiling water reactor plants, the shift average reactor power level is typically less than the rated thermal power license limit. Appendix K of 10 CFR 50 accident analysis assumes 102% reactor power for instrument inaccuracy. Actual accuracy at the plant is better than that assumed in the regulations. The licensee plans to perform a comprehensive review of the reactor heat balance calculation in the process computer including the inputs and assumed constants to assure future accurate heat balance calculations. This item was closed.
- .3 (Closed) Licensee Event Report (LER) 50-331/2001-006: Manual Reactor Scram Due to Loss of Instrument Supply Power. On October 17, 2001, the operators initiated a manual reactor scram from full power due to decreasing water level. The low level was

caused by events initiated by a loss of Division 1 Instrument AC Bus 1Y11 due to a failure of inverter 1D15. The alternate power supply, regulating transformer 1Y1A, was out of service for preplanned maintenance. The loss of 1Y11 caused a plant transient that required the operating crew to insert a manual scram in anticipation of reaching an automatic scram setpoint on low reactor vessel level. Three circuit boards in the inverter were determined to be the likely cause of the failure and were replaced; however, the vendor could not find conclusive evidence that the circuit boards were malfunctioning. Inverter 1D15 was tested prior to startup. A load bank was used to simulate actual plant conditions. The inverter performed as expected throughout the testing under adverse and normal conditions. The inverter was returned to service and has been operating appropriately since the event. The inspectors determined that the event had low safety significance. The plant equipment responded as expected after the initial event. This item is closed.

4OA6 Meeting

Exit Meeting

The inspectors presented the inspection results to Mr. R. Anderson and other members of licensee management on February 26, 2002. The licensee acknowledged the findings presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

KEY POINTS OF CONTACT

Licensee

R. Anderson, Plant Manager
B. Bernier, System Engineer Supervisor
J. Bjorseth, Manager, Engineering
D. Brigl, Long Term Program Engineer
R. Brown, Nuclear Oversight Manager
E. Christopher, Program Engineer
D. Curtland, Site Support Manager
J. Ertman, Team Leader-Engineer
T. Evans, Operations Manager
H. Giorgio, Manager, Radiation Protection
A. Johnson, Operations Training Supervisor
J. Karrick, Licensing
B. Kindred, Security Manager
J. Lohman, Communications Manager
S. McVay, System Engineer
S. Nelson, Health Physics Supervisor
J. Newman, Radiological Engineering Supervisor
K. Putnam, Licensing Manager
A. Roderick, Principal Mechanical Engineer
W. Simmons, Maintenance Superintendent
P. Sullivan, Emergency Planning Manager
G. Van Middlesworth, Site Vice-President Nuclear
G. Whittier, RHR System Engineer

NRC

B. Burgess, Chief, Branch 2, DRP
P. Prescott, Senior Resident Inspector
M. Kurth, Resident Inspector

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None

Closed

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| 50-331/2001-007-00 | LER | Unplanned High Pressure Coolant Injection System Inoperability due to an Oil Leak Caused by Missing Front Ferrule in a Compression Fitting |
| 50-331/2001-005-00 | LER | Licensed Power Level Exceeded due to Use of Non-conservative Constant in Heat Balance Calculation |
| 50-331/2001-006-00 | LER | Manual Reactor Scram Due to Loss of Instrument Supply Power |

Discussed

None

LIST OF ACRONYMS USED

| | |
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| AC | Alternating Current |
| ADAMS | NRC's Document System |
| AFP | Area Fire Plan |
| AR | Action Request |
| CFR | Code of Federal Regulations |
| CWO | Corrective Work Order |
| DAEC | Duane Arnold Energy Center |
| DBT | Design Basis Threat |
| DRP | Division of Reactor Projects |
| EMA | Engineered Maintenance Action |
| FRV | Feedwater Regulating Valve |
| HPCI | High Pressure Coolant Injection |
| LER | Licensee Event Report |
| LPCI | Low Pressure Coolant Injection |
| MW _{th} | Megawatt Thermal |
| NRC | Nuclear Regulatory Commission |
| OI | Operating Instruction |
| OWA | Operator Workaround |
| P&ID | Piping and Instrumentation Drawing |
| PARS | Public Availability Records |
| PI | Performance Indicator |
| RFO 17 | Refueling Outage 17 |
| RHR | Residual Heat Removal |
| ROP | Reactor Oversight Process |
| SDP | Significance Determination Process |
| SSCs | Structure, System, or Components |
| STP | Surveillance Test Procedure |
| TS | Technical Specification |
| UFSAR | Updated Final Safety Analysis Report |

LIST OF 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.

1R04 Equipment Alignment

| | | |
|--------------------------------|--------------------------------|-------------|
| P&ID M119 | Residual Heat Removal System | Revision 73 |
| Operating Instruction (OI) 149 | Residual Heat Removal System | Revision 74 |
| P&ID M146 | Service Water System | Revision 63 |
| OI 454 | Emergency Service Water System | Revision 36 |

1R05 Fire Protection

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| AFP-6 | Reactor Building RHR Valve Room | Revision 22 |
| AFP-7 | Reactor Building Laydown Area, Corridor and Waste Tank Area, and Spent Resin Tank Room | Revision 22 |
| AFP-8 | Reactor Building Standby Gas Treatment System and MG Set Room | Revision 22 |

1R12 Maintenance Rule Implementation

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| DAEC Performance Criteria Basis Document | Low Pressure Core Spray System | Revision 0 |
| DAEC Performance Criteria Basis Document | Fuel Pool Cooling & Cleanup System | Revision 1 |
| DAEC Performance Criteria Basis Document | Reactor Core Isolation Cooling System | Revision 2 |
| DAEC Performance Criteria Basis Document | Standby Liquid Control System | Revision 1 |

1R15 Operability Evaluations

| | | |
|--------------------------------|---|-------------------|
| AR 29514 | Quad Cities-1 Reported a Tech. Spec. Required Shutdown due to a Jet Pump Beam Failure on the #20 Jet Pump | January 6, 2002 |
| Information Notice (IN) 93-101 | Jet Pump Hold-Down Beam Failure | December 17, 2002 |

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| AR 29336 | Operability Evaluation Concerning Non-zero Flow Indications on Flow Indicator FI-2309 While in the Standby Condition | January 15, 2002 |
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1R16 Operator Workarounds

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| AR 28711 | Prepare Modification Package to Replace Honeywell Load Controllers with Moore Controllers for the Chillers | November 9, 2002 |
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| AR22964 | Ensure Steam Line Drain Flow to the Condensers is Minimized During Turning Gear Operation | November 14, 2000 |
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| AR 23397 | EMAs [Engineering Maintenance Actions] A46577 & 78: AN4162A/B (Offgas Hydrogen Analyzers) Replacement | December 11, 2000 |
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| AR 25235 | During RFO 17, Multiple Delays were Encountered due to 1S081 (Refueling Platform) Problems | April 24, 2001 |
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| AR 26120 | Potential "Seat Leakage" Through Either/Both CV1579/CV1621 (A/B Feedwater Regulating Valves) | May 24, 2001 |
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| AR 27206 | 1P032 (Main Condenser Mechanical Vacuum Pump) Inspection and Performance Checks | September 20, 2001 |
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| AR 28634 | Track Completion of EMA-A52009 "Provide Spurious Signal Suppression to Various Annunciators" | November 6, 2001 |
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| AR 29163 | Track EMA A53332 to Install Permanent Gauges at Pipe Plugs on Outlet of 1P032 (Main Condenser Mechanical Vacuum Pump) | December 13, 2001 |
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1R17 Permanent Plant Modifications

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| CWO A46550 | "Exiting Rupture Disk PSE4336C not I.A.W. ASME [American Society of Mechanical Engineers] Code. Remove PSE4336B, Plug with Blind Outlet Plug as Recommended by Vendor" |
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1R19 Post-Maintenance Testing

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| CWO A53427 | Install Capacity Bank as Designed by Alliant Energy Substation Design Group | |
| CWO A57546 | CV 1621 is Cycling Approximately 5 to 6 Percent Erratically from 63 to 56 Percent. Perform Diagnostic Testing and Troubleshooting. | |
| CWO A56472 | Inspect the Terminal Strip in the Junction Box Near the Valve where the Positioner Signal Wires are Terminated for Damage. Corrective Action #5 from AR 26515 Report. | |
| CWO A56788 | Leak On Standby Gas Treatment System Air Inlet Isolation Damper AV7602A-O Operator Head | |
| UFSAR Section 6.2.3.2.4 | Standby Gas Treatment System | |
| OI 170 | Standby Gas Treatment System | Revision 37 |
| TS 3.6.4.3 | Standby Gas Treatment System | |

1R22 Surveillance Testing

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| Surveillance Test Procedure (STP) 3.3.1.1-08 | RPS Logic System Response Time Check (Channel B2) | Revision 6 |
| STP NS160002 | Residual Heat Removal Service Water Operability Test ("C" Pump) | Revision 6 |
| STP 3.6.4.3-05 | Standby Gas Treatment Operation with Heaters On ("A" Division) | Revision 1 |
| STP 3.5.1-02 | Low Pressure Coolant Injection (LPCI) System Operability Test ("A" Division) | Revision 11 |

1R23 Temporary Plant Modifications (TMP)

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| TMP No. 02-004 | Lift Leads to MO5711A, MO5726A to Ensure They Remain in the Closed Position and Positive Cooling Water Isolation to the DW Cooler 1VCC004A is Assured | |
| ARP 1C25A, B-2 | Drywell Cooling Loop "A" Inop. | Revision 5 |
| Affected Drawing -Bech-F113 | Heating & Ventilation Systems | Revision 6 |
| UFSAR Section 6.2.2.2.3 | Primary Containment Cooling System | Revision 15 |

4OA1 Performance Indicator Verification

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| NG-01-0047, NG-01-0496, NG-01-0873, NG-01-1199 | Action Request Radiological Occurrence Trend report, Performance Indicator for Occupational Radiation Exposure Control Effectiveness, Documentation Packets, CY 2000 4 th Quarter, CY 2001 1 st , 2 nd , and 3 rd Quarter(s) | |
|--|--|--|