UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-8064

July 17, 2000

S. K. Gambhir, Division Manager
Nuclear Operations
Omaha Public Power District
Fort Calhoun Station FC-2-4 Adm.
P.O. Box 399
Hwy. 75 - North of Fort Calhoun
Fort Calhoun, Nebraska 68023-0399

SUBJECT: FORT CALHOUN STATION - NRC INSPECTION REPORT NO. 50-285/2000-004

Dear Mr. Gambhir:

On May 15 to 19, 2000, the NRC completed an inspection on the corrective action program at your Fort Calhoun Station facility. The enclosed report presents the results of that inspection. The preliminary results of the onsite inspection were discussed on May 19, 2000, with Mr. W. Gates, Vice President, and members of your staff. A telephonic exit meeting was conducted on June 7, 2000, to inform your staff of the results of the in-office review following the team's departure from the site.

This inspection was an examination of activities conducted under your license as they relate to the identification and resolution of problems. Within these areas, the inspection consisted of a selected examination of procedures and representative records, observations of activities, and interviews with personnel. Based on the results of the inspection, there were no findings identified. The team concluded that the facility's corrective action program was effective in the identification, resolution, and prevention of conditions adverse to quality.

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).

Should you have any questions concerning this inspection, we will be pleased to discuss them with you.

Sincerely,

/RA/

John L. Pellet, Chief
Operations Branch
Division of Reactor Safety

Docket No.: 50-285

License No.: DPR-40

Enclosures:
NRC Inspection Report No.
50-285/00-04

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ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket No.:	50-285
License No.:	DPR-40
Report No.:	50-285/00-04
Licensee:	Omaha Public Power District
Facility:	Fort Calhoun Station
Location:	Fort Calhoun Station FC-2-4 Adm., P.O. Box 399, Hwy. 75 - North of Fort Calhoun Fort Calhoun, Nebraska
Dates:	May 15 to 19, 2000
Inspectors:	Paul C. Gage, Senior Operations Engineer, Operations Branch Michael C. Hay, Resident Inspector, Project Branch C Gary W. Johnston, Senior Operations Engineer, Operations Branch Kriss M. Kennedy, Senior Project Engineer, Project Branch D Ryan E. Lantz, Operations Engineer, Operations Branch Thomas F. Stetka, Senior Operations Engineer, Operations Branch
Approved By:	John L. Pellet, Chief, Operations Branch Division of Reactor Safety

ATTACHMENTS:

Attachment 1: Supplemental Information

Attachment 2: Material Requested

Attachment 3: NRC's Revised Reactor Oversight Process

SUMMARY OF FINDINGS

Fort Calhoun Station
NRC Inspection Report No. 50-285/00-04

This announced inspection focused on the licensee's program for the identification and resolution of problems. The significance of issues is indicated by the color (green, white, yellow, red) and was determined by the Significance Determination Process in Inspection Manual Chapter 0609.

Identification and Resolution of Problems

- Based on the results of the inspection, there were no findings identified. The team concluded that the facility's corrective action program was effective in the identification, resolution, and prevention of conditions adverse to quality. The team noted that site personnel clearly understood the importance of this program. The limited number of minor exceptions identified by the team were primarily associated with the prioritization and classification of repetitive low level problems in radiation protection practices. However, based on the number and the nature of these exceptions, this did not indicate a performance issue in the licensee's program (Section 4OA2).

Report Details

Summary of Plant Status: The plant operated at 100 percent power throughout the inspection period.

4 OTHER ACTIVITIES

4OA2 Identification and Resolution of Problems

a. Inspection Scope

This inspection consisted of a review of the licensee's programs that were intended to identify and resolve problems discovered at the facility. The review focused on the following eight attributes: (1) complete and accurate identification of the problem in a timely manner commensurate with its significance and ease of discovery, (2) proper evaluation and disposition of operability and reportability issues, (3) consideration of extent of the condition (generic implications, common cause, repetitive, etc.), (4) classification and prioritization of the resolution of the problem, (5) identification of root and contributing causes, (6) identification of corrective actions, (7) completion of corrective actions in a timely manner, and (8) accurate accounting for equipment unavailability.

The team selected several broad areas based upon their risk importance, a review of the licensee's documented system status, the requirements of NRC Inspection Procedure 71152, and past NRC inspection findings. These selected items included: (1) electrical issues, (2) reactor fuel issues, (3) human performance issues, (4) repetitive issues, (5) generic communication responses, (6) self-assessments, (7) auxiliary feedwater system, and (8) instrument air system. The team reviewed over 200 corrective action documents related to the selected items against the 8 attributes to assess the licensee’s program for identifying and resolving conditions adverse to quality.

The team interviewed 2 managers, 3 supervisors, 16 engineers, and 3 maintenance craft personnel with respect to safety conscious work environment.

b. Observations and Findings

All of the personnel interviewed indicated no concerns with identifying safety issues and were satisfied with the employee concerns program for processing safety issues. In addition, none of these personnel noted any reluctance of other personnel to identify any safety issues.

Complete and Accurate Identification of the Problem in a Timely Manner

Based on the material reviewed, the team found that the licensee was identifying problems correctly and in a timely manner. The team observed that plant personnel conducted periodic surveillance tests of air accumulators associated with safety-related air operated valves. These tests verified that the accumulators were capable of supplying air for a duration consistent with the design basis of their associated air operated valve. The team noted that in the last 3 years, five test failures resulted from leaking check valves, whose function was to isolate the instrument air supply from the

accumulator in the event of a loss of instrument air. The team determined that licensee personnel appropriately addressed these test failures in their corrective action program. However, the team noted that Condition Report 199902361, "PCV-6680A-1-C Failed Drop Test," October 30, 1999, did not document the cause of the failed surveillance test as a leaking check valve, nor did it document that the check valve was replaced, nor that an inspection of the valve revealed particulate contamination.

There were no findings identified during inspection of this area.

Proper Evaluation and Disposition of Operability and Reportability Issues

Based on the over 200 corrective documents reviewed by the team, the licensee was properly evaluating operability and reportability issues. There were no findings identified during inspection of this area.

Consideration of Extent of the Condition (generic implications, etc.)

Based on the over 200 corrective documents reviewed by the team, the licensee's determination of extent of condition was proper. There were no findings identified during inspection of this area.

Classification and Prioritization of the Resolution of the Problem

Although the team concluded that the facility's corrective action program were effective in the identification, resolution, and prevention of conditions adverse to quality, there were a limited number of minor exceptions in the prioritization and classification of repetitive low level problems in radiation protection practices. However, based on the number and the nature of these exceptions, this did not indicate a performance issue in the licensee's program.

The inspectors reviewed the corrective actions associated with Condition Reports 199902046, 199902099, 199902360, and 199902522. The events associated with Condition Reports 199902046 and 199902099 were referenced as two examples of a violation of 10 CFR 20.1902 requirements in NRC Inspection Report 50-285/99-12 issued November 15, 1999. The team noted that the corrective actions associated with these four condition reports were appropriate, and were completed in a timely manner commensurate with safety.

The failure to post a high radiation area and a radiation area as described in Condition Reports 199902360 and 199902522, respectively, were considered two additional examples of a violation identified in NRC Inspection Report 50-285/99-12. The risk significance of these licensee identified failures was determined to be very low because there was not a substantial potential for an overexposure. The team noted that no additional radiological posting deficiencies had been identified.

Condition Reports 199900951, 199901945, and 199902034 identified occurrences of seven radiation workers that entered radiation or high radiation areas not permitted by their associated radiation work permits. These events were documented as three

examples of a violation of Technical Specification 5.8.1 in NRC Inspection Report 50-285/99-12. These condition reports documented poor communication as the contributing cause for the failures to follow the effective radiation work permits. The team noted that no programmatic or broad corrective actions were identified by the licensee for these repetitive occurrences of similar events.

The team noted that the licensee's decision to address a repetitive deficiency by a formal root cause analysis was subjectively determined based on condition report tracking and trending information. The team verified that no explicit threshold guidance was established to determine an adverse trend. The team was informed by licensee representatives that adverse trends were tracked by two methods: (1) a monthly corrective action group report that distinguished condition reports according to tracking codes, and (2) all condition reports initiated were screened by the corrective action group and related condition reports were identified and noted in the “RELATED CR’S” section of the condition report.

During the review of the October 1999 trend report for condition reports involving poor radiation worker practices, the team noted that Condition Reports 199902142, 199902113, and 19991945 were excluded from the licensee's trend report. The inspectors identified that different trend codes were assigned to these condition reports even though they each involved radiation workers failing to follow radiation work permit requirements. The inspectors determined that the inconsistent coding of related events resulted in incomplete trending information, which reduced the effectiveness of the licensee’s ability to evaluate condition reports for adverse trends.

Subsequently, the licensee identified an additional example of a radiation worker failing to follow the requirements of the radiation work permit. Specifically, on October 13, 1999, a radiation worker entered a high radiation area on a radiation work permit that did not allow entry into that type of area. Condition Report 199902113 was initiated to evaluate this occurrence.

The worker entered the area by taking a route deemed not accessible by the radiation protection operations group. The individual climbed down a ladder from on top of the reactor vessel head and then swung around 90 degrees to utilize another ladder located on a crane, which allowed entry into the high radiation area. Radiation protection personnel noticed the event and had the individual exit the area. The team determined that the corrective actions for this condition report were narrowly focused since it only addressed the enhancement to hang a high radiation posting on a ladder that was not considered an accessible route. A licensee representative informed the team that a site wide human performance initiative was in the implementation process to address human performance deficiencies. The failure to follow the requirements of the radiation work permit as described in Condition Report 199902113 was considered an additional example of a violation identified in NRC Inspection Report 50-285/99-12.

The team noted an inconsistent utilization of the corrective action process for prioritizing and evaluating repetitive conditions of radiation workers failing to follow requirements of the radiation work permits. The ability to track and trend these repetitive deficiencies was limited due to inconsistent prioritization.

There were no findings identified during inspection of this area.

Identification of Root and Contributing Causes

Based on the scope of this inspection, the team found that the licensee was properly identifying causes of problems, with the following minor exception. The team noted that the root cause evaluations associated with four instrument air system test failures were limited and did not identify the cause of leaking check valves (Condition Reports 199800997, 199902227, 199902252, and 199902286). In each case, the team determined that licensee personnel took appropriate actions to replace the leaking check valve.

On January 13, 2000, licensee personnel initiated Condition Report 200000077 to evaluate all air operated valves that required an instrument air accumulator to perform their safety function in the event of a loss of instrument air, for placement into Maintenance Rule Category (a)(1). This condition report evaluated the extent of the condition, the consequences of the failure with regard to 10 CFR 50.65, and the possible root causes of the failed tests. As a result of the condition report, Check Valves IA-HCV-385-C and IA-HCV-386-C were placed in Maintenance Rule Category (a)(1). The licensee's root cause evaluation determined that the apparent cause of the leaking check valves was particulate contamination. The proposed corrective actions were to install filters upstream of two check valves. At the time of the inspection, licensee personnel were developing a modification to install these filters. The inspectors noted that while the licensee's root cause evaluation identified that particulate contamination caused the check valves to leak by, the evaluation did not address the source of the particulate contamination in the instrument air system.

The team noted that Condition Report 200000866, "Discharge Pressure And Flow Oscillations In FW-10," inaccurately described the cause of the condition and work accomplished. The condition report was the first of two written in response to the April 26, 2000, failure of the turbine driven auxiliary feedwater pump to maintain steady discharge pressure and flow during a surveillance test. Condition Report 200000866 identified that an obstructed orifice caused instrument drift in the pneumatic (speed) transmitter. The condition report noted that the orifice had been cleaned, the transmitter recalibrated, and the pump returned to service. This condition report was assigned to the maintenance group for disposition.

During continued troubleshooting, following the discovery of the obstructed orifice, the licensee found the derivative relay in the speed control loop improperly set as documented in Condition Report 200000870, “Derivative Relay Set Incorrectly In FW-10.” This condition report involved several actions and a formal root cause analysis to be accomplished, all of which were in progress during this inspection. The team discovered that the maintenance group personnel assigned to disposition Condition Report 200000866 were not aware that the derivative relay had been found with an incorrect setting, but instead heard that the pump was being returned to service and, thus, documented it as such. Licensee personnel stated that the obstructed orifice would not have caused the observed speed oscillations. The team noted that an apparent lack of communications with the maintenance group involved in the initial work order to clean the obstructed orifice resulted in the erroneous comments made on Condition Report 200000866 regarding pump status. The licensee acknowledged the erroneous statements and updated the condition report to correctly describe the actions taken. The team considered this to be isolated example of poor interdepartmental communications, which resulted in erroneous information on the condition report, but resulted in no actual consequences on the system.

There were no findings identified during inspection of this area.

Identification of Corrective Actions

The team noted only one minor exception, as described below, in the licensee's normal effective identification of corrective actions. Condition Report 199901186, “NRC Information Notice 99-21: Recent Plant Events Caused By Human Performance Errors,” did not clearly address the applicability of the four industry events reported in the information notice. The team noted that the first two events described in NRC Information Notice 99-21 were directly applicable to the facility, but were not specifically addressed by the condition report. A licensee representative described that action had been taken to train operators on the events and the specific applicability to the facility, but was not specifically documented in the condition report. The condition report noted that the events in the information notice were reviewed with all operators in the operating experience lecture during requalification training. The team agreed with the adequacy of this action, and considered the lack of specific action information in the condition report to be minor in nature, and an isolated example of incomplete information in the condition report.

There were no findings identified during inspection of this area.

Completion of Corrective Actions in a Timely Manner

Of the over 200 documents reviewed, the team identified Condition Report 20000657 where the licensee's corrective actions were to be completed over a longer time frame than the team expected, based on the potential significance of the issue. This report involved dc voltages below vendor specification at the closing coils of 480 and 4160 volt circuit breakers used to sequence loads on to the emergency diesel generators during accident conditions.

Following receipt of the industry report on March 3, 1999, the licensee performed a calculation to determine the applicability and extent of this condition at the Fort Calhoun Station. The results of the completed Calculation FC06764 on March 3, 2000, indicated that the closing coil voltages for the 480 volt circuit breakers, also used to sequence loads onto the emergency diesel generators, were less than the minimum 90 volt dc specified by the vendor to close these circuit breakers. As the result of these findings, the licensee issued Condition Report 200000657.

The team questioned the operability of the installed circuit breakers based upon the calculation and test results. The licensee stated that it had used a number of conservatism assumptions in its calculation. Examples provided to the team included: (1) cable lengths were based on "cut" cable lengths longer than actual cable lengths, (2) temperatures were assumed to be higher than actual values, and (3) all of the circuit breakers were assured to operate simultaneously.

The licensee representative stated that the 480 volt circuit breakers had always operated properly during approximately 19 years of surveillance testing during the integrated engineered safety features test. The team noted that the remaining corrective actions were to reperform or validate Calculation FC 06764 using less conservative, but realistic data. If the results from the final calculation still indicate a potential of reduced closing coil voltages, the licensee planned to perform additional tests to determine the actual voltages at the installed circuit breakers.

Following these discussions with the licensee, the team reviewed the latest completed integrated engineered safety features test, Procedure OP-ST-ESF-0002, "Diesel Generator No. 1 and No. 2 Auto Operation," Revision 19, conducted on October 22, 1999. The team verified that this test simulated actual accident loading conditions and was successfully performed. In addition, the team confirmed through review of five completed surveillance tests (EM-ST-EE-0009, Monthly Surveillance Test for Station Battery Chargers) that were used to set the battery charger voltages to determine if these voltages were equal to or greater than the 130 volts dc assumed in Calculation FC06764. From this review, the team verified that the battery chargers voltages were being maintained at greater than 130 volts dc.

Based upon these reviews and discussions, the team determined that the licensee's evaluation that installed 480 volt circuit breakers remained operable was justified. However, the amount of time that had elapsed from when the problem was identified was longer than expected (initiated in March 1999 and unresolved as of the end of the inspection in May 2000), based on the potential significance of the issue.

There were no findings identified during inspection of this area.

Accurate Accounting for Equipment Unavailability

With the minor exception noted, the team found the licensee to be accurately accounting for equipment unavailability in the material reviewed. The team interviewed the system engineer for the auxiliary feedwater system and three maintenance rule group engineers to determine the sources of and methods used to track internal performance indicator data. The team specifically verified the accounting of four auxiliary feedwater related condition reports (199900170, 1999002488, 2000000372, and 2000000870), for unavailability in the reported performance indicators. The team reviewed the accounting for auxiliary feedwater unavailability during Surveillance Test IC-ST-IA-3009 in March 2000. The team reviewed the performance indicators for auxiliary feedwater unavailability reported to the NRC in March 2000 for general accuracy and consistency with the data collected by the maintenance rule group.

The team noted that the data reported for unavailability hours was consistent with data from the condition reports and the Surveillance Test IC-ST-IA-3009 performed in March 2000. The team noted that a statement in the analysis section of the performance indicators was incorrect, in that it stated that unavailability for Valve FW-10 this month was attributed to periods of inoperability due to performance testing. This statement was not updated from the previous month's report. The licensee corrected the error to accurately describe the source of unavailability hours. The team considered this error to be administrative in nature with no consequences on the performance indicator data.

There were no findings identified during inspection of this area.

4OA6 Meetings

a. Exit Meeting Summary

The inspectors presented the inspection results to Mr. W. Gates, Vice President, and other members of licensee management at the conclusion of the onsite inspection on May 19, 2000. The licensee's management acknowledged the findings presented.

A telephonic exit meeting was held on June 7, 2000, with Mr. S. Gambhir, Division Manager Nuclear Operations, and other licensee staff members, during which the team leader characterized the results of the in-office review following the team's departure from the site. The inspectors asked the licensee's management whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

ATTACHMENT 1

PARTIAL LIST OF PERSONS CONTACTED

Licensee

R. Clemens, Plant Manager
R. Cusick, System Engineering
S. Gambhir, Division Manager, Nuclear Operations
E. Matzke, Nuclear Licensing
R. Phelps, Division Manager, Nuclear Engineering
R. Plath, Supervisor, Electrical / Instrumentation and Control Engineering
M. Puckett, Manager, Radiation Protection
R. Reno, Supervisor, ALARA and Radiological Equipment
J. Spilker, Manager, Corrective Action Group
M. Tesar, Division Manager, Nuclear Support Services

NRC

C. Osterholtz, Resident Inspector
J. Pellet, Chief, Operations Branch
W. Walker, Senior Resident Inspector

PARTIAL LIST OF DOCUMENTS REVIEWED

PROCEDURES

NUMBER	TITLE	REVISION
SO-R-2	Condition Reporting and Corrective Action	10
NOD-QP-19	Cause Analysis Program	20
NOD-QP-20	Human Performance Enhancement System Program	8
NOD-QP-21	Operating Experience Review Program	11
SO-O-43	Fuel Reliability Action Plan	7
OP-ST-ESF-0002	Diesel Generator No. 1 and No. 2 Auto Operation	19
EM-ST-EE-0009	Monthly Surveillance Test for Station Battery Chargers	15
EM-ST-EE-0009	Monthly Surveillance Test for Station Battery Chargers	16
OP-ST-EE-0010	Manual Emergency DC Transfer Switch Surveillance Test	9
EPDM-144	Emergency Preparedness Performance Indicator Program	0
SO-G-101	Radiation Worker Practices	13

CONDITION REPORTS

NUMBER	TOPIC	DATE
199600965	HCV-921,922 leaking by causes inoperable process monitor	July 31, 1996
199700474	IA-HCV-385-C failed drop test	April 25, 1997
199700506	IA-HCV-1107A-C failed drop test	May 1, 1997
199700507	IA-HCV-1107B-C failed drop test	May 1, 1997
199700979	RM-064 declared inoperable	August 5, 1997
199701036	Mainsteam line radiation monitor	August 19, 1997
199701424	Station Blackout design basis for 125 Vdc charger	October 16, 1997
199701430	125 Vdc Station Battery No. 1	October 18, 1997
199800355	Auxiliary feedwater panel instrumentation	March 10, 1998
199800448	Raw water pump pressure instrument not correct	March 19, 1998
199800871	IA-HCV-386-C failed drop test	April 22, 1998
199800997	IA-HCV-1107B-C failed drop test	May 1, 1998
199801358	Tracking of open items for CR 199701424	June 19, 1998
199801745	Emergency classifications	September 2, 1998
199802308	IN 99-04 Unplanned radiation exposures	March 15, 1999
199802337	INPO SEN196 RCS vessel level decrease during loop transfer	April 14, 1999
199802340	IN 99-10 Degredat9ion of prestressing tendons	April 16, 1999
199802344	IN 99-13 Medium voltage circuit breaker maintenance	May 6, 1999
199802347	IN 99-14 RCS draindown at Quad Cities	May 11, 1999
199900029	Inadequate procedure change for FW-10 testing	January 7, 1999
199900038	Conflicting valve lineup for two test procedures	January 8, 1999
199900067	Molded case circuit breaker inspection and test	January 15, 1999
199900110	161kV switchyard trenching cable cut	January 21, 1999
199900123	Turbine building roof fan VA158D caused ground	January 25, 1999

NUMBER	TOPIC	DATE
199900130	Molded case circuit breaker failed test	January 26, 1999
199900134	Condition adverse to quality during circuit breaker test	January 27, 1999
199900155	CCW pump AC-3C suction pressure indicator isolation valves closed	January 31, 1999
199900170	FW-10 inoperability due to accumulator check valve leakage	February 3, 1999
199900171	Near miss, change of intent on temporary procedure change	February 3, 1999
199900176	Plant shutdown for FW-10 inoperability	February 3, 1999
199900221	Common cause analysis results for human errors	December 1, 1998
199900224	Procedural compliance	December 1, 1998
199900240	Blocked SI-2B CCW valves HCV-2811A and HCV-2811B	February 12, 1999
199900340	Battery #2, Cell #22 below equalizing charge screening criteria	March 1, 1999
199900440	Feedwater heater 2B local site glasses isolated	March 16, 1999
199900444	Containment spray pump SI-3A casing vent valve	March 17, 1999
199900463	Seal water heat exchanger	March 18, 1999
199900465	Received 480V bus ground alarm	March 18, 1999
199900538	Adverse trend in RCS gaseous activity	March 26, 1999
199900595	Panel AI-153 received a trouble alarm for a ground fault	April 6, 1999
199900615	Fit and Form of rectifiers and capacitors for rod drive motors	April 7, 1999
199900641	Increased number of failed fuel pins	April 13, 1999
199900761	Screen wash strainer in incorrect mode of operation	April 28, 1999
199900882	AC sequencer S2-2 auto start lock out relay failed to trip	May 18, 1999
199900938	Inverter B trouble and Instrument bus B low voltage alarms.	May 27, 1999
199900946	MCC-3B3-B04 inadvertent tripping	May 26, 1999
199900951	Failure to follow radiation work permit	May 28, 1999
199900956	Incorrect PRA model for FW-54	May 28, 1999

NUMBER	TOPIC	DATE
199900957	Diesel generators testing	May 26, 1999
199901011	Heaters 5A and 5B continuous vent orifice bypass valves open	June 8, 1999
199901033	Breaker for AC-10C would not charge	June 10, 1999
199901147	Group 4 rods inserted to 114.5 inches withdrawn at 97% power	June 25, 1999
199901172	Part 21 ABB 4Kv vacuum breakers	June 29, 1999
199901186	IN 99-21 human performance errors	July 1, 1999
199901197	Hard ground on dc bus #2	July 3, 1999
199901288	INPO OE10009 Flooding as a result of postulated fire	July 16, 1999
199901292	INPO SEN199 Rev. 1 Feedwater heater shell rupture	July 16, 1999
199901316	Clearance tag found hanging after tagging sheet completed	July 12, 1999
199901330	CE Technote 99-03 Reactor vessel holddown ring	July 23, 1999
199901372	Failure of program in CECOR	July 29, 1999
199901416	Hydrogen gas excess flow check valve found open	August 5, 1999
199901490	480V bus ground 1B4C alarmed	August 12, 1999
199901592	NRC Generic Letter 99-02 Activated charcoal testing	August 23, 1999
199901600	AFW USAR verification project, recirculation valves	August 24, 1999
199901601	AFW USAR verification project, EFWST	August 24, 1999
199901604	AFW USAR verification project, ventilation testing	August 24, 1999
199901661	DC bus #2 ground	August 27, 1999
199901665	Pressure switch PC-2855 caused ground on dc bus 2	August 29, 1999
199901733	480 volt bus ground	September 4, 1999
199901775	DB-50 breaker minimum trip force and seismic enhancements	September 10, 1999
199901782	XC-105 declared inoperable	September 13, 1999
199901795	Condition reports not generated as required	September 15, 1999
199901808	Condition reports not generated as required	September 17, 1999

NUMBER	TOPIC	DATE
199901856	Switchyard substation 3451 control building alarmed	September 24, 1999
199901919	Clearance tag hung in wrong location	September 27, 1999
199901926	Tagged closed leaking screen wash pump CW-3B suction valve	September 30, 1999
199901927	480V bus ground alarm for Bus 1B4C	October 1, 1999
199901934	Clearance tag on fire water system strainer breaker not removed	September 29, 1999
199901945	Failure to follow radiation work permit	October 3, 1999
199901961	Performance indicators for PARS	October 4, 1999
199901977	Loss of VCT level indication when fuses removed	October 5, 1999
199901980	Raw water pump de-energized when Bus 1B3B taken OOS	October 5, 1999
199901985	Breaker 1B3B-2 removed from service	October 5, 1999
199901991	Fire protection system drain valve found not fully closed	October 6, 1999
199902000	Molded case circuit breaker failed test criteria	October 5, 1999
199902003	Block heater for FP-1B de-energized when 1B3B taken OOS	October 6, 1999
199902034	Failure to follow radiation work permit	October 8, 1999
199902036	Electrical equipment qualification	October 7, 1999
199902046	Failure to post a high radiation area	October 9, 1999
199902078	Near miss, HE-3 Tagout With Active Load	October 11, 1999
199902079	AFW pump FW-54 recirculation isolation valve removed with tag	October 11, 1999
199902083	Pressurizer RC-4 relief valve set pressure test	October 11, 1999
199902092	IN 99-10 Revision 1 Degredat9ion of prestressing tendons	October 12, 1999
199902099	Failure to post a radiation area	October 12, 1999
199902113	Failure to follow radiation work permit	October 13, 1999
199902118	Wrong waste-gas valve removed for maintenance	October 13, 1999
199902142	Failure to follow radiation work permit	October 15, 1999

NUMBER	TOPIC	DATE
199902144	13 failed fuel rods in cycle 18 core	October 15, 1999
199902162	AFW pump FW-10 pneumatic positioner found in bypass position	October 16, 1999
199902208	Broken movable arcing contact link	October 20, 1999
199902211	Spent fuel pool bridge found down-powered	October 20, 1999
199902214	HPSI header crosstie breaker closed with danger tag hung	October 20, 1999
199902227	IA-HCV-386-C failed drop test	October 20, 1999
199902229	EFW storage tank level controller drain valve found open	October 20, 1999
199902234	Corrective action process changes needed	October 21, 1999
199902252	IA-LCV-383-1-C failed drop test	October 21, 1999
199902260	Relay 27T2X/1A4-24 failed to pickup on an actuation signal	October 22, 1999
199902261	Battery charger No. 2 AC input breaker, EE-8D-CB1, tripped	October 22, 1999
199902264	Effectiveness of corrective actions not assigned	October 22, 1999
199902272	Water found in two tagged systems thought to be drained	October 23, 1999
199902278	Type C testing of containment sump recirculation penetration	October 24, 1999
199902279	Unable to trip SI-3B breaker from control room	October 24, 1999
199902286	IA-HCV-1107A-C failed drop test	October 25, 1999
199902293	Vital busses 1A3 and 1A4 de-energized	October 26, 1999
199902315	Loss of SFP cooling	October 27, 1999
199902340	Pressurizer pressure low signal blocking relay discovered blocked	October 28, 1999
199902350	Penetration M-14 Type C leakage failure	October 29, 1999
199902355	Post refuel core physics test technical specification violation	October 29, 1999
199902360	Failure to post a high radiation area	October 30, 1999
199902361	PCV-6680A-1-C failed drop test	October 30, 1999
199902367	1B4A volt bus ground alarm	October 30, 1999

NUMBER	TOPIC	DATE
199902370	Equipment tagout database did not match drawings	October 30, 1999
199902382	Water to emergency shower and eye wash station found isolated	October 31, 1999
199902389	DC amps swinging 30 to 50 amps on battery charger #2	October 30, 1999
199902413	Lower cavity drain overflow	October 30, 1999
199902418	Pressurizer pressure low signal blocking relay discovered blocked	October 30, 1999
199902453	Raw water drain valve found open	November 4, 1999
199902476	Reactor coolant pump seal vent	November 4, 1999
199902488	YCV-1045 stoke time test failure	November 8, 1999
199902491	Letdown strainer outlet sample valve found closed	November 9, 1999
199902522	Failure to post a radiation area	November 10, 1999
199902545	Errors discovered in equipment tagging database	November 15, 1999
199902586	Multiple starts of FW-10 for startup preparations	November 10, 1999
199902597	Planar radial peaking factor approaching COLR limit	November 18, 1999
199902655	No freon in VA-90 due to hole in its cooling coils	November 21, 1999
199902675	INPO OE10459 Inadvertent draindown of RCS	December 8, 1999
199902686	CR for trending purpose, action level 3	December 9, 1999
199902690	Portable heaters effect on diesel generator loading	December 10, 1999
199902712	Human performance self assessment results	December 16, 1999
200000033	Modification MR-FC-98-008 USQ disagreement	January 13, 1999
200000077	Air operated valves placed into maintenance rule category (A)(1)	January 13, 2000
200000084	INPO SOER99-01 Loss of grid	January 14, 2000
200000097	INPO SER1-00 RCS leak for RHR piping failure	January 17, 2000
200000098	INPO SOER99-01 Loss of grid	January 17, 2000
200000099	Failed fuel action plan	January 17, 2000
200000102	INPO SOER99-01 Loss of grid	January 18, 2000

NUMBER	TOPIC	DATE
200000104	INPO SOER99-01 Loss of grid	January 18, 2000
200000106	INPO SOER99-01 Loss of grid	January 18, 2000
200000108	INPO SOER99-01 Loss of grid	January 18, 2000
200000109	INPO SOER99-01 Loss of grid	January 18, 2000
200000118	INPO SOER99-01 Loss of grid	January 19, 2000
200000120	INPO SOER99-01 Loss of grid	January 19, 2000
200000123	INPO SOER99-01 Loss of grid	January 19, 2000
200000128	INPO SOER99-01 Loss of grid	January 19, 2000
200000156	Charging pump CH-1A cooling tank drain valve not fully closed	January 21, 2000
200000170	Charging pump CH-1A seal water overflow tank valve found closed	January 25, 2000
200000204	Instrument air valves for HCV-2880A and HCV-2880B found closed	January 27, 2000
200000205	4160 VAC ground detection system is not available	January 27, 2000
200000213	Fuel analysis assumption inaccuracies	January 28, 2000
200000279	INPO OE10300 Inoperability of both offsite sources	February 8, 2000
200000280	OE 10659, reluctance to report human performance issues	February 8, 2000
200000372	Near miss, technical specification required run of FW-10	February 23, 2000
200000438	Human performance improvement initiative	March 3, 2000
200000490	Crack found on one of DG-1's cylinder piston oil cooling pipes	February 29, 2000
200000517	AFW USAR verification project, emergency feedwater tank	March 9, 2000
200000557	INPO OE10774 Rosemount setpoint methodology	March 13, 2000
200000570	AFW pump FW-54 chemical feed isolation valve found open	March 14, 2000
200000577	Overcharging of battery	March 15, 2000
200000657	Testing anomalies encountered on a spare 480V load breaker	March 24, 2000

NUMBER	TOPIC	DATE
200000676	Non-running screen wash seal water pump valves out of position	March 29, 2000
200000677	Both sets of pre-filters and after filters were in service	March 29, 2000
200000679	Vacuum priming drain tank drain valve found open	March 30, 2000
200000696	INPO OE10808 Inadequate tagout boundaries	March 31, 2000
200000699	RCS dose equivalent iodine exceeded technical specification 2.1.3 limit	April 1, 2000
200000726	Frequent intermittent dc bus #2 alarms	April 4, 2000
200000730	Identify adverse trend in the area of valve mispositioning events	April 4, 2000
200000734	IN 2000-06 Offsite power voltage inadequacies	April 4, 2000
200000745	DG-2 governor would not allow unloading the generator	April 6, 2000
200000761	BASSS inoperable due to the failure of core burnup to update	April 10, 2000
200000769	DC bus #2 ground	March 15, 2000
200000781	Numerous intermittent dc bus #2 ground alarms	April 11, 2000
200000788	Inverter D frequency abnormal oscillations	April 12, 2000
200000790	MiniCECOR/BASSS program failures	April 12, 2000
200000829	INPO OE10909 Missed surveillance of reactor trip breaker	April 18, 2000
200000830	Breaker for welding receptacle found in open position	April 18, 2000
200000857	Gas decay tank valves	April 23, 2000
200000866	Discharge pressure and flow oscillations in FW-10	April 26, 2000
200000870	Derivative relay set incorrectly in FW-10	April 27, 2000
200000877	Operation of steam trap ST-15	April 28, 2000
200000914	SIRW tank recirculation valve found open	May 3, 2000
200000931	Maintenance rule application for FW-10	April 26, 2000

MISCELLANEOUS DOCUMENTS

Failed Fuel Mitigation Plan

Licensee Event Report (LER) 98-16, General Shutdown Technical Specification Action Statement Entry Due to Uninstalled Relay Covers, January 4, 1999

NRC Inspection Reports 50-285/99-03, 50-285/99-13, 50-285/00-02

Calculation FC06764, Voltage Drop Calculation - DC Control Power to Diesel Generator Output Breakers and ESF Auto - Sequenced Load Breakers, March 3, 2000

OE 9616, Incorrect Calculation of Voltages at 480V and 4kV Switchgear Close Coils, January 29, 1999

Root Cause Analysis and Generic Implications Analysis Report, CR 199900110, “Switchyard Cable Cutting Resulting in Fast Transfer of Buses 1A3 and 1A4,” March 8, 1999.

Root Cause Analysis and Generic Implications Analysis Report, CR 199900170, “Plant Shutdown due to Failed Surveillance Test for FW-10,” March 1, 1999.

Common Cause Analysis Report, April 1- September 30, 1999

Level A Cause Analysis Report, CR 199902355, “Post Refueling Core Physics Testing,” November 22, 1999

Level B Cause Analysis, CR 199902476, “Venting Reactor Coolant Pump Seals during the 1999 Refueling Outage,” December 14, 1999

Cause Determination Number 10020001, CR 199902279, “Containment Spray Pump SI-3B Failed to Stop On Demand,” April 6, 2000

LER 99-01, “Shutdown Technical Specification Entry due to Auxiliary Feedwater Inoperability,” March 5, 1999,

LER 99-06, “Missed Technical Specification Requirement for Low Power Core Physics Test,“ November 29, 1999

Engineering Support Continuing Training Guide Number ESCT 99-022

“Human Performance Leadership Team Mission,” presented at the Leadership Team Kick-off Luncheon, March 3, 2000.

Performance Indicator Data Input Sheet, March 2000, Auxiliary Feedwater.

WANO and NRC Performance Indicators, Auxiliary Feedwater System Unavailability, March 2000.

Safety Analysis for Operability, SAO 97-002 Revision 0, “Station Eight Hour Battery Capacity for a DBA,” October 23, 1997

Work Order 15197, “SI-331 is leaking boric acid,” October 29, 1998

General Form FC1173D, “Non-significant Configuration Change,” Revision 1

Root Cause Analysis for Condition Report 199701036, “Failure to Declare RM064 Inoperable,” September 15, 1997

Work Order 962477, “Determine leakage of Valcor valves (HCV-921 and HCV-922), August 2, 1996

Work Order 973680, “HCV-922 appears to be leaking past is shut seat,” May 2, 1998

Work Order 973961, “HCV-921, Replace this valve incorporating the results of EAR-97-221,” May 7, 1991

Substitute Replacement Item Engineering Change Notice (ECN) ECN 97-351/5536, March 16, 1998

Action Request AR25586, SOER 98-02 “Circuit Breaker Reliability,” October 16, 1998

Action Request AR26930, IN-99-11, “Incidents Involving Use of Radioactive Iodine-131,” May 7, 1999

ATTACHMENT 2

Material Requested for the 71152 Inspection

- All procedures governing or applying to the corrective action program, including the processing of information regarding generic communications and industry operating experiences.

- Procedures and descriptions of any informal systems, especially used by operations, for issues below the threshold of the formal corrective action program.

- Index of all corrective action documents (e.g., condition reports) from January 1999 to March 2000.

- Index of all work requests, work orders, temporary modifications, and calibration failures associated with the high pressure safety injection system and the instrument air system since January 1999.

- All major corrective action documents (i.e., those that subsume or roll-up one or more smaller issues) since January 1999.

- All corrective action documents associated with non-escalated no response required or Non-Cited Violations since January 1999.

- All audits or assessments (since January 1999) performed on the corrective action program, high pressure safety injection system, and the instrument air system.

- All system health reports (since January 1999) for the high pressure safety injection system, and the instrument air system.

- All corrective action program reports or metrics (since January 1999) used for tracking effectiveness of the corrective action program.

- All risk analysis performed for currently open significant conditions adverse to quality (including open design modifications).

- All corrective action documents (condition reports since January 1999) associated with:

  (1) Repetitive problems or issues
  (2) Reactor fuel related issues
  (3) Human performance issues
  (4) Operator workarounds
  (5) High pressure safety injection system
  (6) Instrument air system
  (7) Occupational exposure
  (8) Emergency preparedness

- All corrective action documents associated with green findings of NRC inspection reports since June 1999.

- All corrective action documents related to the following industry operating experience generic communications:

Part 21 Reports	NRC Generic Letters	NRC Information Notices
99-05	98-002	99-004
99-06	98-004	99-010
99-07		99-011
99-08		99-013
99-22		99-014
99-33		99-021
99-34		
99-51		

Supplemental Material Requested for the 71152 Inspection

Sort on Level 7 Condition Reports for last 12 months
SOER 98-02
Procedure NOD-QP-20, “Human Performance Evaluation System Program”

Response files or packages associated with the following Licensee Event Reports:

98-15	98-16	99-01	99-02
99-03	99-05	99-06	

Condition Reports from 1/99 to present for:

I. Mispositioned equipment such as valves, breakers, dampers, etc
II. Equipment tagging errors
III. AFW/EFW turbine speed control

Copy of the following condition reports, including root cause evaluation, risk significance assessment, and corrective actions.

1997-11430	1999-0915	1999-1668	1999-2089	1999-2522
1998-0997	1999-0938	1999-1724	1999-2113	1999-2536
1999-1985	1999-0951	1999-1736	1999-2136	1999-2680
1999-0029	1999-0956	1999-1782	1999-2142	1999-2686
1999-0067	1999-0957	1999-1795	1999-2144	1999-2690
1999-0110	1999-1012*	1999-1808	1999-2160	1999-2761
1999-0134	1999-1052	1999-1808	1999-2169	2000-0077
1999-0158	1999-1068	1999-1815	1999-2227	2000-0099
1999-0158	1999-1147	1999-1886	1999-2234	2000-0284
1999-0170	1999-1174	1999-1887	1999-2245	2000-0372
1999-0224	1999-1245	1999-1891	1999-2256	2000-0558
1999-0298	1999-1272	1999-1945	1999-2264	2000-0570
1999-0340	1999-1372	1999-1959	1999-2279	2000-0585
1999-0364	1999-1545	1999-2003	1999-2293*	2000-0599
1999-0433	1999-1558	1999-2026	1999-2301	2000-0699
1999-0465	1999-1571	1999-2034	1999-2315	2000-0761
1999-0538	1999-1600	1999-2043	1999-2360	2000-0790
1999-0641	1999-1601	1999-2046	1999-2413	2000-0813
1999-0706	1999-1602	1999-2049	1999-2428	2000-0857
1999-0771	1999-1603	1999-2072	1999-2452	2000-0870
1999-0847	1999-1604	1999-2078	1999-2476	
1999-0882				

ATTACHMENT 3

NRC's REVISED REACTOR OVERSIGHT PROCESS

The federal Nuclear Regulatory Commission (NRC) recently revamped its inspection, assessment, and enforcement programs for commercial nuclear power plants. The new process takes into account improvements in the performance of the nuclear industry over the past 25 years and improved approaches of inspecting and assessing safety performance at NRC licensed plants.

The new process monitors licensee performance in three broad areas (called strategic performance areas): reactor safety (avoiding accidents and reducing the consequences of accidents if they occur), radiation safety (protecting plant employees and the public during routine operations), and safeguards (protecting the plant against sabotage or other security threats). The process focuses on licensee performance within each of seven cornerstones of safety in the three areas:

Reactor Safety	Radiation Safety	Safeguards
● Initiating Events	● Occupational	● Physical Protection
● Mitigating Systems	● Public	
● Barrier Integrity		
● Emergency Preparedness		

To monitor these seven cornerstones of safety, the NRC uses two processes that generate information about the safety significance of plant operations: inspections and performance indicators. Inspection Findings will be evaluated according to their potential significance for safety, using the Significance Determination Process, and assigned colors of GREEN, WHITE, YELLOW or RED. GREEN Findings are indicative of issues that, while they may not be desirable, represent very low safety significance. WHITE Findings indicate issues that are of low to moderate safety significance. YELLOW Findings are issues that are of substantial safety significance. RED Findings represent issues that are of high safety significance with a significant reduction in safety margin.

Performance indicator data will be compared to established criteria for measuring licensee performance in terms of potential safety. Based on prescribed thresholds, the indicators will be classified by color representing varying levels of performance and incremental degradation in safety: GREEN, WHITE, YELLOW, and RED. GREEN indicators represent performance at a level requiring no additional NRC oversight beyond the baseline inspections. WHITE corresponds to performance that may result in increased NRC oversight. YELLOW represents performance that minimally reduces safety margin and requires even more NRC oversight. And RED indicates performance that represents a significant reduction in safety margin, but still provides adequate protection to public health and safety.

The assessment process integrates performance indicators and inspection so the agency can reach objective conclusions regarding overall plant performance. The agency will use an Action Matrix to determine in a systematic, predictable manner, which regulatory actions should be taken based on a licensee's performance. The NRC's actions in response to the significance (as represented by the color) of issues will be the same for performance indicators as for inspection findings. As a licensee's safety performance degrades, the NRC will take more and increasingly significant action, which can include shutting down a plant, as described in the Action Matrix.

More information can be found at: http://www.nrc.gov/NRR/OVERSIGHT/index.html.