UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-4005

October 26, 2004

EA-04-171

James J. Sheppard, President and
Chief Executive Officer
STP Nuclear Operating Company
P.O. Box 289
Wadsworth, Texas 77483

SUBJECT: SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION - NRC INTEGRATED INSPECTION REPORT 05000498/2004004 AND 05000499/2004004

Dear Mr. Sheppard:

On September 26, 2004, the US Nuclear Regulatory Commission (NRC) completed an inspection at your South Texas Project Electric Generating Station, Units 1 and 2, facility. The enclosed integrated report documents the inspection findings which were discussed on September 30, 2004, with Mr. Tom Jordan, Vice President, Engineering & Technical Services, and other members of your staff.

The inspection examined activities conducted under your licenses as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your licenses. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

This report documents four findings of very low safety significance (Green), evaluated under the risk significance determination process (SDP), all of which were determined to involve violations of NRC requirements. However, because of the very low safety significance and because they were entered into your corrective action program, the NRC is treating these findings as noncited violations (NCVs) consistent with Section VI.A of the NRC Enforcement Policy. If you contest any NCVs in this report, 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 76011-4005; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington DC 20555-0001; and the NRC Resident Inspector at South Texas Project Electric Generating Station, Units 1 and 2, facility.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be made 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/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

William D. Johnson, Chief
Project Branch A
Division of Reactor Projects

Dockets: 50-498
50-499
Licenses: NPF-76
NPF-80

Enclosure:
NRC Inspection Report 05000498/2004004 and 05000499/2004004
w/Attachment: Supplemental Information

cc w/enclosure:
Tom Jordan, Vice President
Engineering & Technical Services
STP Nuclear Operating Company
P.O. Box 289
Wadsworth, TX 77483

S. M. Head, Manager, Licensing
Nuclear Quality & Licensing Department
STP Nuclear Operating Company
P.O. Box 289, Mail Code: N5014
Wadsworth, TX 77483

C. Kirksey/C. M. Canady
City of Austin
Electric Utility Department
721 Barton Springs Road
Austin, TX 78704

L. Blaylock/J. Nesrsta
City Public Service Board
P.O. Box 1771
San Antonio, TX 78296

D. G. Tees/R. L. Balcom
Texas Genco, LP
P.O. Box 1700
Houston, TX 77251

Jon C. Wood
Cox Smith Matthews
112 E. Pecan, Suite 1800
San Antonio, TX 78205

A. H. Gutterman, Esq.
Morgan, Lewis & Bockius
1111 Pennsylvania Avenue NW
Washington, DC 20004

C. A. Johnson/A. C. Bakken
AEP Texas Central Company
P.O. Box 289, Mail Code: N5022
Wadsworth, TX 77483

INPO
Records Center
700 Galleria Parkway
Atlanta, GA 30339

Director, Division of Compliance & Inspection
Bureau of Radiation Control
Texas Department of State Health Services
1100 West 49th Street
Austin, TX 78756

Brian Almon
Public Utility Commission
William B. Travis Building
P.O. Box 13326
1701 North Congress Avenue
Austin, TX 78701-3326

Environmental and Natural
Resources Policy Director
P.O. Box 12428
Austin, TX 78711-3189

Judge, Matagorda County
Matagorda County Courthouse
1700 Seventh Street
Bay City, TX 77414

Terry Parks, Chief Inspector
Texas Department of Licensing
and Regulation
Boiler Program
P.O. Box 12157
Austin, TX 78711

Susan M. Jablonski
Office of Permitting, Remediation and Registration
Texas Commission on Environmental Quality
MC-122, P.O. Box 13087
Austin, TX 78711-3087

Ted Enos
4200 South Hulen
Suite 630
Fort Worth, TX 76109

Electronic distribution by RIV:
Regional Administrator **(BSM1)**
DRP Director **(ATH)**
DRS Director **(DDC)**
DRS Deputy Director **(GLS)**
Senior Resident Inspector **(JXC2)**
Branch Chief, DRP/A **(WDJ)**
Senior Project Engineer, DRP/A **(TRF)**
Staff Chief, DRP/TSS **(KMK)**
RITS Coordinator **(KEG)**
DRS STA **(DAP)**
Matt Mitchell, OEDO RIV Coordinator **(MAM4)**
STP Site Secretary **(LAR)**
G. F. Sanborn, D:ACES **(GFS)**
K. D. Smith, RC **(KDS1)**
F. J. Congel, OE **(FJC)**
OE:EA File **(RidsOeMailCenter)**

ADAMS: Yes ☐ No Initials: __wdj_
Publicly Available ☐ Non-Publicly Available ☐ Sensitive Non-Sensitive

R:_STP\2004\ST2004-04RP-jc.wpd

RIV:RI:DRP/A	RIV:RI:DRP/A	RIV:SRI:DRP/A	EO	C:DRS/EB
GLGuerra	JTaylor	JCruz	GFSanborn	JClark
E - WDJohnson	***T - WDJohnson***	***E - WDJohnson***	***/RA/***	***/RA/***
10/25/04	10/25/04	10/25/04	10/25/04	10/22/04

C:DRS/OB	C:DRS/PSB	C:DRS/PEB	C:DPR/A	
ATGody	MPShannon	LJSmith	WDJohnson	
/RA/	***/RA/***	**/RA/**	**/RA/**	
10/25/04	10/25/04	10/22/04	10/26/04	

ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Dockets:	50-498, 50-499
Licenses:	NPF-76 NPF-80
Report No:	05000498/2004004 05000499/2004004
Licensee:	STP Nuclear Operating Company
Facility:	South Texas Project Electric Generating Station, Units 1 and 2
Location:	FM 521 - 8 miles west of Wadsworth Wadsworth, Texas 77483
Dates:	June 27 through September 26, 2004
Inspectors:	J. Cruz, Senior Resident Inspector G. L. Guerra, Resident Inspector J. L. Taylor, Resident Inspector R. Lantz, Senior emergency Preparedness Inspector J. Drake, Operations Inspector M. Haire, Operations Inspector S. D. Cochrum, Resident Inspector, Project Branch C B. Henderson, Reactor Inspector, Engineering Branch B. Baca, Health Physicist
Approved By:	W. D. Johnson, Chief Project Branch A Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000498/2004004, 05000499/2004004; 06/27/04 - 09/26/04; South Texas Project Electric Generating Station; Units 1 & 2; Integrated Resident Report, Event Followup, Occupational Radiation Safety.

The report covered a three month period of resident inspection and announced inspections by Region IV inspectors. Four Green noncited violations were identified. The significance of issues is indicated by their color (Green, White, Yellow, or Red) and was determined by the Significance Determination Process in Inspection Manual Chapter 0609. Findings for which the significance determination process does not apply are indicated by the severity level of the applicable violation. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

A. NRC-Identified and Self-Revealing Findings

Cornerstone: Barrier Integrity

- Green. A noncited violation of Technical Specification 3.7.7.c and 4.7.7.e.3 was identified regarding control room envelope heating, ventilation, and air conditioning testing that identified some control room envelope areas not being at 1/8 inch water gauge positive pressure with respect to an adjacent area, as required. The licensee requested and received a Notice of Enforcement Discretion (NOED 04-06-001) for Technical Specification 3.7.7.c requirements.

  The failure to demonstrate control room operability in accordance with Technical Specification 4.7.7.e.3 is a performance deficiency. The finding is more than minor because it affected the barrier integrity cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events by maintaining the operational capability of the control room envelope heating, ventilation, and air conditioning boundary. The finding screened as Green, very low safety significance, in Phase 1 of the significance determination process because it represented a degradation of only the radiological barrier function provided for the control room (Section 4OA3.1).

- Green. A noncited violation of Technical Specification 6.8.1 was identified. The finding involved a partially opened flush line valve in the Train B high head safety injection system that provided a containment bypass leak path. This resulted in a condition where the radiological control room dose limits of General Design Criteria 19 and the offsite dose limits of 10 CFR Part 100 would have been exceeded in the event of a design basis accident.

  This finding is greater than minor because the finding is associated with the configuration control attribute of the barrier integrity cornerstone and affects the

cornerstone objective to provide reasonable assurance that the physical design barrier would protect the public against a release caused by a loss of coolant accident. A Phase 2 evaluation was required because the finding represented an actual open pathway in the physical integrity of reactor containment. The Phase 2 evaluation determined that the leak rate would be less than 10 percent of the containment volume. Because the leakage from containment to the environment was not greater than 100 percent of the containment volume per day, in accordance with NRC Inspection Manual Chapter 0609, Appendix H, Section 6.1, step 3, "Phase 2 Assessment," this finding was of very low risk significance (Section 4OA3.2).

Cornerstone: Occupational Radiation Safety

- Green. A self-revealing noncited violation of Technical Specification 6.12.1 was reviewed because a worker entered a high radiation area without proper radiation work permit authorization. On July 28, 2004, an individual received an electronic personal dosimeter alarm after entering a high radiation area in the Unit 2 Pipe Penetration Room 211. The radiation work permit used by the individual did not allow entry into such areas. The finding was entered into the licensee's corrective action program.

  The failure to have proper radiation work permit authorization prior to entering a high radiation area is a performance deficiency. This finding is greater than minor because it is associated with the Occupational Radiation Safety Program and Process attribute and affected the cornerstone objective, which is to ensure adequate protection of the worker health and safety from exposure to radiation. Using the Occupational Radiation Safety Significance Determination Process, the inspector determined that the finding was of very low safety significance because it did not involve (1) ALARA planning and controls, (2) an overexposure, (3) a substantial potential for overexposure, or (4) an impaired ability to assess dose. In addition, this finding had a crosscutting aspect associated with human performance (Section 2OS2).

- Green. The inspector identified a noncited violation of 10 CFR 20.1501(a) because a radiological survey was not performed before work commenced. On April 4, 2004, the Unit 2 reactor head was lifted to a 15 - 20 inch hold point a during shift change. Once the hold point was reached, workers began staging stud hole cover equipment near the reactor flange before a survey was taken to determine the radiological conditions. Immediate corrective actions were to suspend the work activity, move the workers to a low dose area, perform the survey, and inform the workers of the current radiological conditions. In addition, the finding was entered into the licensee's corrective action program.

  The failure to perform a radiological survey before commencing work activity is a performance deficiency. This finding is greater than minor because it is associated with the Occupational Radiation Safety Program and Process attribute and affected the cornerstone objective, which is to ensure adequate protection of the worker health and safety from exposure to radiation. Using the Occupational Radiation Safety Significance

Determination Process, the inspector determined that the finding was of very low safety significance because it did not involve (1) ALARA planning and controls, (2) an overexposure, (3) a substantial potential for overexposure, or (4) an impaired ability to assess dose. In addition, this finding had cross-cutting aspects associated with human performance and problem identification and resolution (Section 2OS2).

B. Licensee-Identified Violations

None.

REPORT DETAILS

Summary of Plant Status

Unit 1 operated at essentially 100 percent power throughout the inspection period.

Unit 2 operated at essentially 100 percent power throughout the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R04 Equipment Alignment (71111.04)

a. Inspection Scope

The inspectors conducted partial walkdowns of the following three risk-significant systems to verify that they were in their proper standby alignment as defined by system operating procedures and system drawings. During the walkdowns, inspectors examined system components for materiel conditions that could degrade system performance. In addition, the inspectors evaluated the effectiveness of the licensee's problem identification and resolution program in resolving issues which could increase event initiation frequency or impact mitigating system availability.

- The inspectors performed a partial system walkdown of the Unit 1 solid state protection system Train R logic and actuation Train A on August 5. The walkdown was performed with the system engineer to access the logic cabinets to verify the proper equipment lineup. The inspectors also examined component condition.

- The inspectors performed a partial system walkdown of the Unit 2 auxiliary feedwater system Train D on August 5. The inspectors also examined component condition.

- The inspectors performed a partial system walkdown of the Unit 1 standby diesel generator system Train B on September 2. The inspectors also examined component condition.

b. Findings

No findings of significance were identified

1R05 Fire Protection (71111.05)

a. Inspection Scope

The inspectors toured six plant areas to assess the licensee's control of transient combustible materials, the material condition and lineup of fire detection and suppression systems, and the material condition of manual fire equipment and passive fire barriers. The licensee's fire preplans and fire hazards analysis report were used to identify important plant equipment, fire loading, detection and suppression equipment

locations, and planned actions to respond to a fire in each of the plant areas selected. Compensatory measures for degraded equipment were evaluated for effectiveness. The following plant areas were inspected:

- (Unit 1) Turbine driven auxiliary feedwater pump room on June 29 (Fire Zone 400)
- (Unit 1) Electrical penetration area, 35 foot elevation, Room 201, on July 23 (Fire Zone 031)
- (Unit 1) Essential cooling water pump rooms, Rooms 104-109, on August 24 (Fire Zones Z600-602)
- (Unit 1) Volume control tank valve rooms on August 24 (Fire Zone Z119)
- (Unit 2) Volume control tank valve rooms on August 24 (Fire Zone Z119)
- (Unit 1) Auxiliary shutdown panel room on September 21 (Fire Zone 071)

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification (71111.11)

a. Inspection Scope

On September 7, the inspectors assessed Crew 2E during licensed operator simulator requalification training. The inspectors observed a control room simulator scenario that included responding to various equipment problems and a request to reduce power from the load dispatcher. The scenario also included information which prompted a manual reactor trip. The inspectors observed the performance of Crew 2E for clarity and formality of communications, the correct use of procedures, performance of high risk operator actions, monitoring of critical safety functions, and the oversight and direction provided by the shift supervisor. The inspectors reviewed the scenario sequence and objectives, observed the training critique, and discussed the crew's performance with training instructors. In addition, the inspectors attended the critique held by the operating crew to assess individual performance and training effectiveness. The inspectors also observed a class room training presentation on reactivity management given by the Operations Manager.

b. Findings

No findings of significance were identified.

1R12 Maintenance Implementation (71111.12)

a. Inspection Scope

The inspectors independently verified that licensee personnel properly implemented 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," for the following two systems:

- (Common) Essential chill water systems on September 13
- (Common) Chemical and volume control systems on September 17

The inspectors reviewed whether the structures, systems, or components were properly characterized in the scope of the Maintenance Rule Program and whether the failures or performance problems were properly characterized. In addition, the inspectors assessed the appropriateness of the established performance criteria. The inspectors also independently verified that the corrective actions and responses implemented were appropriate and adequate.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspectors assessed whether the performance of risk assessments for selected planned and emergent maintenance activities were in accordance with 10 CFR 50.65(a)(4). The inspectors assessed the completeness and accuracy of the information considered in the risk assessments and compared the actions taken to manage the resultant risk with the requirements of the licensee's Configuration Risk Management Program. The inspectors reviewed these assessed risk configurations against actual plant conditions and any in-progress evolutions or external events to verify that the assessments were accurate, complete, and appropriate for the conditions. In addition, the inspectors walked down the control room and plant areas to verify that compensatory measures identified by the risk assessments were appropriately performed. The inspectors reviewed the following five activities:

- (Unit 1) Risk assessment regarding the removal from service of Steam Generator Feedwater Pump 21 for planned maintenance on July 9
- (Unit 2) Evaluation of the cumulative risk effect of online maintenance during a Train C systems work week on July 27
- (Unit 2) Evaluation of high risk work on main generator grounding switch on August 11 (Evaluation 1197 for Work Authorization Number (WAN) 276362)

- (Unit 2) Evaluation of high risk work on reactor coolant system Loop 2D pressurizer spray valve on September 1 (Evaluation 1231 for WAN 282142)

- (Unit 2) Evaluation of continued full power operations with pressurizer pressure control systems in degraded conditions on September 15

b. Findings

No findings of significance were identified.

1R14 Personnel Performance During Nonroutine Plant Evolutions (71111.14, 71153)

a. Inspection Scope

The inspectors observed one nonroutine evolution described below to verify that activities were conducted in accordance with licensee procedures and Technical Specification requirements. The inspectors reviewed the licensee's planning documents, attended pre-job briefs, and observed personnel performance in the control room and in the field.

- (Unit 2) Licensee response to the body to bonnet leak identified on reactor coolant system Loop 2D pressurizer spray valve on September 22

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed five operability evaluations conducted by licensee personnel during the report period involving risk-significant systems or components. The inspectors evaluated the technical adequacy of the licensee's operability determination, determined whether appropriate compensatory measures were implemented, and determined whether pre-existing plant conditions were considered, as applicable. Additionally, the inspectors evaluated the adequacy of the licensee's problem identification and resolution program as it applied to operability evaluations. Specific operability evaluations reviewed are listed below:

- (Unit 1) Evaluation of Technical Specification 3.0.3 entry due to lightning strike near site (CR 04-8572) on June 30

- (Unit 1) Evaluation of loose star washers discovered in Essential Chiller 12C local control panel (CR 04-10012) on July 21

- (Unit 2) Evaluation of Accumulator 2B Level Transmitter LT-952 calibration (CR 04-10495) on August 2
- (Unit 1) Evaluation of a 3/4 inch horizontal lighting conduit passing through a vertical free air cable bundle (CR 04-10404-1) on August 5
- (Unit 2) Evaluation of high vibrations on high head safety injection Pump 2B (CR 04-10577) on August 9

b. Findings

No findings of significance were identified.

1R16 Operator Workarounds (71111.16)

a. Inspection Scope

The inspectors reviewed licensee-identified operator workarounds and other existing equipment conditions with the potential to be workarounds to verify that they had been identified and assessed in accordance with STP's Total Impact Assessment document and to determine if the functional capability of the system or human reliability in responding to initiating events had been affected. The ability of operators to implement normal and emergency operating procedures with the existing equipment issues was specifically evaluated. The following item was reviewed:

- (Unit 2) Cumulative -Operations Total Impact Assessment items list the week of September 23

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications (71111.17B)

a. Inspection Scope

This inspection is the second of two inspections to satisfy the requirements of the Inspection Procedure 71111.17B. The first inspection is documented in NRC Inspection Report 05000498/2004-002; 05000499/2004-002. The inspection procedure required a minimum sample size of 5 to 10 plant modifications. The inspectors reviewed nine permanent plant modification packages and associated documentation. The inspectors reviewed procedures governing plant modifications to evaluate the effectiveness of the programs for implementing modifications, such that, the modifications do not adversely affect the design and licensing basis of the facility. Procedures and permanent plant modifications reviewed are listed in the attachment to this report. The inspectors interviewed the cognizant design and system engineers for the identified modifications to gain understanding of the modification packages.

b. Findings

No findings of significance were identified.

1R19 Postmaintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed postmaintenance test procedures and associated testing activities for six risk-significant mitigating systems. In each case, the associated work orders and test procedures were reviewed against the attributes in Inspection Procedure 71111, Attachment 19, to determine the scope of the maintenance activity and determine if the testing was adequate to verify equipment operability. The Updated Final Safety Analysis Report, Technical Specifications, and design basis documents were also reviewed, as applicable, to determine the adequacy of the acceptance criteria listed in the test procedures. The inspectors witnessed or reviewed the results of postmaintenance testing for the following maintenance activities:

- (Unit 1) Plant Surveillance Procedure 0PSP03-AF-0007, “Auxiliary Feedwater Pump 14 Inservice Test,” Revision 28, review of postmaintenance testing on June 29 (Work Authorization Number (WAN) 254738)

- (Unit 1) Plant Surveillance Procedure 0PSP03-CS-0003, “Containment Spray Pump 1C Inservice Test,” Revision 11, review of postmaintenance testing on July 21 (WAN 256400)

- (Unit 2) Plant Surveillance Procedure 0PSP03-CC-0003, “Component Cooling Water Pump 2C Inservice Test,” Revision 9, review of postmaintenance testing on July 30 (WAN 252952)

- (Unit 2) Incore instrumentation system work on Detectors C and E, review of work package postmaintenance testing results on August 12 (WAN 280214 and 286215)

- (Unit 1) Plant Surveillance Procedure 0PSP11-ZH-0008, “CRE AND FHB HVAC In-place HEPA Filter Leak Test,” Revision 13, review of postmaintenance testing on August 25 (WAN 281592)

- (Unit 2) Plant Maintenance Procedure 0PMP04-CV-0004, “Positive Displacement Charging Pump Maintenance,” Revision 13, review of postmaintenance testing on August 26 (WAN 262300)

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors evaluated the adequacy of three periodic tests of important nuclear plant equipment. This review included aspects such as preconditioning, the impacts of testing during plant operations, the adequacy of acceptance criteria, test frequency, procedure adherence, record keeping, the restoration of standby equipment, test equipment and the effectiveness of the licensee's problem identification and resolution program. The inspectors observed or reviewed the following tests:

- (Unit 2) Plant Surveillance Procedure 0PSP03-DG-0003, "Standby Diesel Generator 23 Operability Test," Revision 26, on July 27 (WAN 257111)
- (Unit 1) Plant Surveillance Procedure 0PSP03-AF-0007, "Auxiliary Feedwater Pump 14 Inservice Test," Revision 29, on August 26 (WAN 259337)
- (Unit 1) Plant Surveillance Procedure 0PSP03-DG-0001, "Standby Diesel Generator 11 Operability Test," Revision 26, on September 22 (WAN 283308)

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications (71111.23)

a. Inspection Scope

The inspectors reviewed the two temporary modification packages listed below. The inspectors assessed the following attributes to the extent practical: (1) the adequacy of the safety evaluation; (2) the consistency of the installation with the modification documentation; (3) the updating of drawings and procedures, as applicable; and (4) the adequacy of the post-installation testing. The inspectors held discussions with the assigned engineers and walked down the temporary modifications.

- T1-04-10705-4, "Remove MSIB 7412 from service and utilize DS-25 as parallel feed to downstream loads by back feeding via spare DS-38," on August 9
- T2-04-7545-2, "Disable Train A Core Exit Thermocouple TE-11," on September 2

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness [EP]

1EP1 Exercise Evaluation (71114.01)

a. Inspection Scope

The inspectors reviewed the objectives and scenario for the 2004 Biennial Emergency Preparedness Exercise to determine if the exercise would acceptably test major elements of the emergency plan. The scenario included a main turbine trip with failure of the reactor to automatically trip, a large break loss of reactor coolant, and loss of power to vital switchgear and other equipment malfunctions. Subsequent loss of all coolant injection sources caused reactor core uncovery and significant fuel damage. Failure of two containment isolation valves resulted in an offsite release of radioactivity. The licensee activated all of their emergency facilities to demonstrate the capability to implement the emergency plan.

The inspectors evaluated exercise performance by focusing on the risk-significant activities of classification, notification, protective action recommendations, and assessment of offsite dose consequences in the simulator control room and the following emergency response facilities:

- Technical Support Center
- Operations Support Center
- Emergency Operations Facility

The inspectors also assessed personnel recognition of abnormal plant conditions, the transfer of emergency responsibilities between facilities, communications, protection of emergency workers, emergency repair capabilities, and the overall implementation of the emergency plan to verify compliance with the requirements of 10 CFR 50.47(b), 10 CFR 50.54(q), and Appendix E to 10 CFR Part 50.

The inspectors attended the post-exercise critiques in each of the above emergency response facilities to evaluate the initial licensee self-assessment of exercise performance. The inspectors also attended the formal presentation of critique items to plant management. The inspectors completed one sample during the inspection.

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation (71114.06)

a. Inspection Scope

On August 31, 2004, the licensee exercised their emergency response “Red” team. The inspectors used the guidance in Inspection Procedure 71114.06 to assess this licensee evaluated emergency drill. The inspectors observed and reviewed drill activities in the control room simulator and the emergency operations facility. The inspectors evaluated operators and licensee emergency response staff for clarity and formality of communications, the correct use of procedures, and the oversight and direction provided by the shift supervisor and emergency director. The inspectors also observed

the licensee's use of emergency action levels for proper emergency classification and reporting timeliness, reviewed the scenario sequence and objectives, and reviewed the licensee's critique. Additionally, the inspectors evaluated the use of the training simulator and interactions between controllers and drill players.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety [OS]

2OS2 ALARA Planning and Controls (71121.02)

a. Inspection Scope

The inspector assessed licensee performance with respect to maintaining individual and collective radiation exposures as low as is reasonably achievable (ALARA). The inspector used the requirements in 10 CFR Part 20 and the licensee's procedures required by the licensee's Technical Specifications as criteria for determining compliance. The inspector interviewed licensee personnel and reviewed:

- Current 3-year rolling average collective exposure
- Eight outage and on-line maintenance work activities scheduled during the inspection period, previous work history data, and associated work activity exposure estimates which were likely to result in the highest personnel collective exposures
- Site specific trends in collective exposures, plant historical data, and source-term measurements
- Eight work activities of highest exposure significance completed during the last outage.
- ALARA work activity evaluations, exposure estimates, and exposure mitigation requirements
- Intended versus actual work activity doses and the reasons for any inconsistencies
- Interfaces between operations, radiation protection, maintenance, maintenance planning, scheduling and engineering groups
- Integration of ALARA requirements into work procedure and RWP documents

- Shielding requests and dose/benefit analyses
- Dose rate reduction activities in work planning
- Post-job (work activity) reviews
- Assumptions and basis for the current annual collective exposure estimate, the methodology for estimating work activity exposures, the intended dose outcome, and the accuracy of dose rate and man-hour estimates
- Method for adjusting exposure estimates, or re-planning work, when unexpected changes in scope or emergent work were encountered
- Use of engineering controls to achieve dose reductions and dose reduction benefits afforded by shielding
- First-line job supervisors' contribution to ensuring work activities are conducted in a dose efficient manner
- Exposures of individuals from selected work groups (contractor, maintenance, and health physics)
- Declared pregnant worker program during the current assessment period, monitoring controls, and the exposure results
- Quality assurance monitoring reports and observations related to the ALARA program since the last inspection
- Resolution through the corrective action process of problems identified through post-job reviews and post-outage ALARA report critiques
- Corrective action documents related to the ALARA program and follow-up activities such as initial problem identification, characterization, and tracking
- Effectiveness of self-assessment activities with respect to identifying and addressing repetitive deficiencies or significant individual deficiencies

The inspector completed 12 of the required 15 samples and 9 of the optional samples.

b. Findings

.1 Introduction. A Green self-revealing noncited violation of Technical Specification 6.12.1 was reviewed because a worker entered a high radiation area without proper radiation work permit authorization and without knowing the radiological conditions.

Description. On July 28, 2004, an individual received an electronic personal dosimeter alarm after entering the Unit 2 Pipe Penetration Room 211. Room 211 was posted and

barricaded as a Caution High Radiation Area with general area dose rates as high as 120 mrem per hour along the travel path to the work area. The radiation work permit used by the individual did not allow entry into such areas. In addition, the individual did not receive the appropriate radiological briefing for the area entered.

Analysis. The failure to have proper radiation work permit authorization prior to entering a high radiation area is a performance deficiency. This finding is considered more than minor because it is associated with the Occupational Radiation Safety Program and Process attribute and affected the cornerstone objective, which is to ensure adequate protection of the worker health and safety from exposure to radiation.

Since this occurrence involves a worker's unplanned, unintended dose or potential for such a dose that could have been significantly greater as a result of a single minor, reasonable alteration of circumstances, this finding was evaluated with the Occupational Radiation Safety Significance Determination Process. Using the Occupational Radiation Safety Significance Determination Process, the inspector determined that the finding was of very low safety significance because it did not involve (1) ALARA planning and controls, (2) an overexposure, (3) a substantial potential for overexposure, or (4) an impaired ability to assess dose.

In addition, this finding had a crosscutting aspect associated with human performance. The failure of licensee personnel to use the proper radiation work permit for access to a high radiation area directly contributed to the finding.

Enforcement. Technical Specification 6.12.1 states, in part, that each high radiation area shall be barricaded and posted as a high radiation area and the entrance controlled by a radiation work permit. The controlling radiation work permit authorizes access to such areas. However, on July 28, 2004, a worker entered a high radiation area that was not authorized by his radiation work permit. The failure to have proper radiation work permit authorization prior to entering a high radiation area is of very low safety significance and is entered into the licensee's corrective action program (Condition Report 04-10470). This violation is being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000499/2004004-01, Failure to use a proper high radiation area radiation work permit.

.2 Introduction. The inspector identified a Green noncited violation of 10 CFR 20.1501(a) because a radiological survey was not performed before commencing work activities. The work area experienced a change in radiological conditions due to the reactor head lift.

Description. On April 4, 2004, reactor stud cover activities began near the Unit 2 reactor head before a survey was performed and radiological conditions determined. A radiological survey was to be performed once the reactor head had achieved a 15 - 20 inch lift. The reactor stud cover work was suspended, the workers moved to a low dose area, and the survey performed. Due to the reactor head lift, radiological conditions had notably changed. For example, dose rates near the reactor head were 80 mrem per hour maximum general area and increased to 300 mrem per hour once the

reactor head was lifted to the 15 - 20 inch stud cover installation and radiological survey point. In addition, the maximum dose rate measured in the area of the reactor studs and stud holes reached 1300 mrem per hour.

Furthermore, miscommunication during shift changes between licensee personnel about the requirements of the work plan and the progress of the reactor head lift caused health physics personnel to not be readily available for associated lift activities.

Analysis. The failure to perform a radiological survey before work activities began is a performance deficiency. This finding is greater than minor because it is associated with the Occupational Radiation Safety Program and Process attribute and affected the cornerstone objective, which is to ensure adequate protection of the worker health and safety from exposure to radiation.

Since this occurrence involves workers' unplanned, unintended dose or potential for such a dose that could have been significantly greater as a result of a single minor, reasonable alteration of circumstances, this finding was evaluated with the Occupational Radiation Safety Significance Determination Process. Using the Occupational Radiation Safety Significance Determination Process, the inspector determined that the finding was of very low safety significance because it did not involve (1) ALARA planning and controls, (2) an overexposure, (3) a substantial potential for overexposure, or (4) an impaired ability to assess dose.

In addition, this issue had a cross-cutting aspect associated with problem identification and resolution. After reviewing the corrective action documentation and interviewing the radiation protection staff, the inspector determined that the immediate corrective actions had an insufficient extent of cause or extent of condition evaluation. Specifically, the corrective actions did not provide a review to address a potential for inadequate procedures or work plans. Routine surveys were not clearly directed by the procedure or work plan. Workers were expected to remember where surveys were to be performed in a sequence of critical work activities. The licensee acknowledged that the problem resolution did not meet its expectations and initiated an additional action item in Condition Report 04-4767.

Further, this finding had crosscutting aspects associated with human performance. The failure of licensee personnel to clearly communicate necessary radiological work plan activities and responsibilities directly contributed to the finding.

Enforcement. 10 CFR 20.1501(a) states, in part, surveys shall be made that are reasonable under the circumstances to evaluate the magnitude and extent of radiation levels, concentrations or quantities of radioactive material, and the potential radiological hazard. A survey or evaluation, when appropriate, includes a physical survey of the location and levels of radiation or concentration or quantity of radioactive material. However, during the reactor head lift, a radiological survey was not performed after a notable change in radiological conditions. Because the failure to perform a radiological survey is of very low safety significance and has been entered into the licensee's corrective action program (Condition Report 04-4767), this violation is being treated as

an NCV, consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000499/2004004-02, Failure to perform a radiological survey.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

.1 Emergency Preparedness Cornerstone:

a. Inspection Scope

The inspectors sampled submittals for the performance indicators listed below for the period from July 1, 2003, through June 30, 2004. The definitions and guidance of Nuclear Engineering Institute NEI 99-02, "Regulatory Assessment Indicator Guideline," Revision 2, were used to verify the licensee's basis for reporting each data element in order to verify the accuracy of performance indicator data reported during the assessment period.

- Drill and exercise performance
- Emergency response organization participation
- Alert and notification system reliability

The inspectors reviewed a 100 percent sample of drill and exercise scenarios, licensed operator simulator training sessions, notification forms, and attendance and critique records associated with training sessions, drills, and exercises conducted during the verification period. The inspectors reviewed the qualification, training, and drill participation records for a sample of 10 emergency responders. The inspectors reviewed alert and notification system maintenance records and procedures, and a 100 percent sample of siren test results. The inspectors also interviewed licensee personnel that were responsible for collecting and evaluating the performance indicator data. The inspectors completed three samples during this inspection.

b. Observations

The inspectors determined that two licensed senior operators had not been included in the emergency response organization participation performance indicator as required. Both of these active licensed senior operators were qualified shift managers, and were available to stand the shift manager watch since the fourth quarter of 2003. Nuclear Engineering Institute 99-02, Section 2.4, page 92, lines 1-2 states, that "All individuals qualified to fill the Control Room Shift Manager/ Emergency Director position that actually might fill the position should be included in this indicator." The two senior operators had actually stood watch in the shift manager position during the fourth quarter 2003 through second quarter 2004 time period. The inspectors determined that failure to track the two senior operators was indicative of a minor weakness in the program for tracking emergency response organization qualification and training.

The licensee reviewed the last eight quarters of performance indicator data and did not identify another example where a shift manager qualified senior operator was not tracked. The licensee wrote Condition Record CR-04-11148, "Operations-relief unit supervisors have not been reported in the key ERO Performance indicator," to address this issue. The licensee also verified and the inspectors agreed that the reported emergency response organization performance indicator color would not have been affected.

.2 Mitigating Systems Performance Indicator Review

a. Inspection Scope

The inspectors reviewed performance indicator data for the period from the second quarter of 2003 through the second quarter of 2004 to assess the accuracy and completeness of the indicator reporting. The inspectors used NEI 99-02, "Regulatory Assessment Performance Indication Guideline," Revision 2, as guidance for this inspection. The following five performance indicators were reviewed for both units for a total of ten indicators examined:

- Safety system functional failures
- Safety system unavailability for the following systems:

  Emergency power
  High head safety injection
  Auxiliary feedwater
  Residual heat removal

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

.1 Annual Sample Review for Emergency Preparedness

a. Inspection Scope

The inspectors selected four condition records (corrective action program inputs) for detailed review based on their linkage with event classification, notification of offsite authorities, and processes for providing protective action recommendations. The records were reviewed to ensure that the full extent of the issues were identified, an appropriate evaluation was performed, and appropriate corrective actions were specified and prioritized.

b. Findings and Observations

No findings of significance were identified.

.2 Cross-References to Problem Identification and Resolution Findings Documented Elsewhere for Emergency Preparedness

No problem identification and resolution cross-references were identified.

.3 Problem Identification and Resolution Review for Permanent Plant Modifications

a. Inspection Scope

Inspection Procedure 71111.17B requires that the inspectors select a sample of problems documented by the licensee and verify appropriateness of the corrective actions. The inspectors selected seven problem notifications, dating to 2002, associated with modifications.

b. Findings

No findings of significance were identified.

.4 Cross-References to Problem Identification and Resolution Findings Documented Elsewhere

Section 2OS2 describes an NRC identified finding with insufficient extent of cause or extent of condition evaluation.

4OA3 Event Followup (71153)

.1 (Closed) Licensee Event Report (LER) 05000498;499/2004-002-00: Control Room Envelope HVAC Testing

Introduction. A Green noncited violation of Technical Specification 3.7.7.c and 4.7.7.e.3 was identified regarding control room envelope HVAC testing that resulted in some control room envelope areas not being at 1/8 inch water gauge positive pressure with respect to an adjacent area. The licensee requested and received a Notice of Enforcement Discretion (NOED 04-06-001) for Technical Specification 3.7.7.c requirements.

Description. The function of the control room ventilation system in its emergency mode lineup is to maintain a positive pressure within the control room envelope with respect to adjacent areas in order to minimize unfiltered inleakage. This assures that the radiological dose to the control room operators remains within the limits of General Design Criteria 19 of 10 CFR Part 50, Appendix A. On March 6, 2004, the licensee completed testing of the Unit 1 control room envelope in accordance with Generic Letter 2003-01, “Control Room Habitability.” The testing method used was the component test method described in Nuclear Energy Institute 99-03, “Control Room Habitability Guidance.” This test method measures the pressure inside the control room envelope

with respect to adjacent areas in a series of locations such that the test points represent the control room boundary and verify that the control room is at a positive pressure with respect to the adjacent area. All leakage should be outleakage from the control room envelope. These results were then to be compared to the tracer gas test method to attempt to validate the component test method as a valid test for determining control room envelope inleakage. The licensee used Plant Engineering Procedures 0PEP05-HE-0002, "Control Room Envelope Differential Test," Revision 3, and 0PEP05-HE-0003, "Control Room Envelope Tracer Gas In-leakage Test," Revision 0.

On March 5, 2004, the resident inspectors informed licensee representatives during the component testing and prior to the tracer gas studies that, although the component test was measuring areas that were not in the normal surveillance procedure for Technical Specification compliance; the control room envelope should be considered inoperable since a number of the additional areas tested were found to fail the 1/8 inch water-gauge requirement detailed in Technical Specification Surveillance Requirement 4.7.7.e.3. Six test points in Unit 1 and seven test points in Unit 2 did not meet the surveillance requirement. On March 17 after consultation with the NRC, the licensee determined that they were in noncompliance and requested a Notice of Enforcement Discretion (NOED) for the 12 hour shutdown action. The NOED was requested and approved for both units as discretion was determined to be appropriate as the radiological dose to the control room operators would remain within the limits of General Design Criteria 19 of 10 CFR Part 50, Appendix A. The pressure in the control room envelope remained positive with respect to adjacent areas although some areas did not meet the 1/8 inch water-gauge requirement. Also, in addition to the positive relative pressure condition at all points, the control room makeup and cleanup filtration system remained functional. The licensee implemented compensatory measures which included making potassium iodine and self contained breathing apparatus available. A Technical Specification change was approved on April 15, 2004. The licensee determined that the Unit 1 control room makeup and cleanup filtration system (CRMCFS) was inoperable from at least March 6 through April 15, 2004. Also, the Unit 2 CRMCFS was inoperable from at least March 2003, when its component test indicated some deficient areas, until April 15, 2004.

Analysis. The failure to demonstrate control room operability in accordance with Technical Specification 4.7.7.e.3 is a performance deficiency. The finding is more than minor because it affected the barrier integrity cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events by maintaining the operational capability of the control room envelope HVAC boundary. A Phase 1 screening was performed by the resident inspectors. The inspectors answered "yes" to the question under the barriers cornerstone column of "Does the finding only represent a degradation of the radiological barrier function provided for the control room?" Hence, the finding screened as Green, very low safety significance.

Enforcement. Technical Specification 4.7.7.e.3 requires that each control room makeup and cleanup filtration system shall be demonstrated operable at least once per 18

months by verifying that the system maintains the control room envelope a positive pressure of greater than or equal to 1/8 inch water gauge at less than or equal to a pressurization flow of 2000 cfm relative to adjacent areas during system operation. The surveillance requirements of Technical Specification 4.7.7.e.3 were not met for Unit 1 from at least March 6 through April 15, 2004. Also, in Unit 2, the surveillance requirement was not met from at least March 2003 to April 15, 2004. A Notice of Enforcement Discretion (NOED 04-06-001) for Technical Specification 3.7.7.c requirements was issued on March 17, 2004, and a Technical Specification change to 4.7.7.e.3 was granted on April 14, 2004. Because this failure to comply with Technical Specification requirements is of very low safety significance and is in the licensee's corrective action program under CR 04-3148, this violation is being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy:
NCV 05000498;499/2004004-03, Failure to Comply with Technical Specification Surveillance Requirements for Control Room Envelope (EA-04-171).

.2 (Closed) LER 05000498/2004-003-00: An Unanalyzed Condition That Degraded Plant Safety Due to a Valve Out of Position

a. Inspection Scope

The inspectors reviewed the LER and CR 04-4033, documenting this event in the licensee's corrective action program, to verify that the identified cause and corrective actions were reasonable.

b. Findings

Introduction. A Green noncited violation of Technical Specification 6.8.1 and Regulatory Guide 1.33 was identified. The finding involved a partially opened flush line valve in the Train B high head safety injection system that provided a containment bypass leak path. This resulted in a condition where the radiological control room dose limits of General Design Criteria 19 and the offsite dose limits of 10CFR100 would have been exceeded in the event of design basis accident.

Description. On March 26, 2004, during a Train B high head safety injection pump surveillance test a pump room sump alarm actuated. After investigation, the licensee discovered that the source of the sump filling was that the flush line isolation valve was approximately 1/8 turns open. The line was isolated and the leak stopped. The partially open flush line isolation valve would provide a containment bypass leak path during a design basis loss of coolant accident (LOCA) when the safety injection system switched to recirculation mode. Licensee engineering analysis had previously concluded that any leakage in excess of 436 gallons per day, based on current local leak rate tests and integrated leak rate tests for the containment boundary during a design basis LOCA would result in unacceptable onsite and offsite dose consequences. The licensee determined that the flush line valve had leaked in excess of 436 gallons per day during the surveillance test. The last successful surveillance test was performed on January 1, 2004, and no leakage was noted from this valve.

The cause of the valve being out of position was indeterminate. However, the most likely cause of the valve being out of position is someone using the valve handle as an aid in exiting the ladder located adjacent to it. Corrective actions included removing the valve handles in both units to prevent recurrence and a site wide communication and lessons learned announcement was implemented.

Analysis. In accordance with NRC Inspection Manual Chapter 0612, Appendix B, "Issue Screening," this finding is greater than minor because the finding is associated with the configuration control attribute of the barrier integrity cornerstone and affects the cornerstone objective to provide reasonable assurance that the physical design barrier would protect the public against a release caused by a loss of coolant accident. If an accident were to occur, dose limits onsite and offsite could be exceeded. A Phase 1 screening by the resident inspectors passed to a Phase 2 evaluation because "yes" was answered to the containment barriers question, "Does the finding represent an actual open pathway in the physical integrity of reactor containment?" A Phase 2 evaluation was performed by the resident inspectors and was reviewed by a Region IV Senior Reactor Analyst. The analyst performed an independent calculation of the leak volume that would have occurred during a loss of coolant accident. The licensee event report indicated that the leak from the system would be 436 gallons per day. The leakage of concern would have been sump water with an estimated temperature of 350E F during a design-basis loss of coolant accident. As a bounding analysis, the analyst assumed an isothermal loss of water through the leak. Using these assumptions the leak would have resulted in a loss of approximately 107,000 ft^3/day of superheated steam from the system. This is less than 10 percent of the containment volume. Because the leakage from containment to the environment was not greater than 100 percent of the containment volume per day, in accordance with NRC Inspection Manual Chapter 0609, Section 6.1, Step 3, "Phase 2 Assessment," this finding was of very low risk significance.

Enforcement. Technical Specification 6.8.1 states that procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Appendix A of Regulatory Guide 1.33. Regulatory Guide 1.33, Appendix A, Section 1.c, requires procedures for equipment control. Conduct of Operations, Chapter 8, "Equipment Configuration Management," Revision 8, provides direction for control of equipment and system status to ensure plant configuration is maintained, and that the Shift Supervisor is responsible for maintaining plant configuration at all times. On March 26, the licensee discovered that plant configuration was not maintained in that the Train B high head safety injection flushing line valve was not in its required position causing a containment bypass condition. With the high head safety injection flushing line valve partially open, control room and offsite dose limits would be exceeded following a design basis accident. Because this failure to maintain containment integrity is of very low safety significance (Green) and has been entered in the licensee's corrective action program, this violation is being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000498/2004004-04, Containment Integrity Degraded Due to Failure to Maintain Plant Equipment Configuration Control.

.3 (Closed) LER 05000498/2003-001-00: Partial Loss of Offsite Power in Units 1 and 2 Resulting in an Engineered Safety Feature Actuation

On January 19, 2003, the north switchyard bus automatically deenergized in response to a fault which resulted in an engineered safety feature actuation. The details of this event and the NRC's subsequent issuance of two Green NCVs regarding inadequate procedures were documented in Inspection Report 0500498;499/2002006. The corrective actions implemented in response to this event were documented in accordance with the licensee's Corrective Action Program in Condition Records 03-925, 03-928 and 03-949. No additional issues were identified by the inspectors. This LER is closed.

.4 (Closed) LER 05000498/2003-002-00, 01: Manual Reactor Trip Due to Reduced Deaerator Level

On March 1, 2003, Unit 1 was manually tripped in response to indications of a loss of condensate flow. Upon initiation of the manual trip, all safety related equipment operated as required. The details of this event and the NRC's subsequent issuance of a Green NCV regarding the failure to include the condensate polisher system within the scope of the Maintenance Rule program and in accordance with 10 CFR 50.65(b)(2)(iii) were documented in Inspection Report 0500498;499/2002006. The corrective actions implemented in response to this event were documented in accordance with the licensee's Corrective Action Program in Condition Record 03-3192. No additional issues were identified by the inspectors. This LER is closed.

.5 (Closed) LER 05000499/2003-002-00: Automatic Safety Injection Actuation

On March 9, 2003, Unit 2 experienced an automatic safety injection actuation in response to low steam line pressure. Upon initiation of the safety injection actuation, all safety related equipment operated as expected. The details of this event and the NRC's subsequent issuance of a Green NCV regarding an inadequate procedure were documented in NRC Inspection Report 0500498;499/2002006. A Green human performance finding was also identified because operators failed to control reactor coolant system (RCS) pressure, causing the lifting of a pressurizer PORV. The corrective actions implemented in response to this event were documented in accordance with the licensee's Corrective Action Program in Condition Records 03-3694, 03-3697 and 03-3703. No additional issues were identified by the inspectors. This LER is closed.

.6 (Closed) LER 05000498/2003-005-00: Auxiliary Feedwater Pump 11 Breaker Failure to Close

On September 4, 2003, Auxiliary Feedwater Pump 11 did not start because the supply breaker failed to close during routine surveillance testing. The cause of the failure was determined to have been the increased mechanical resistance of the breaker mechanism caused by the random build up of tolerances from wear and case distortion. In violation of Technical Specification 3.8.1.1 Action D, auxiliary feedwater Pump 11 was

determined to have been out of service while Standby Diesel Generator 13 was also out of service on August 18 and 19, 2003. The details of this event and the NRC's subsequent issuance of a licensee-identified Green NCV were documented in Inspection Report 0500498;499/2003003. The corrective actions implemented in response to this event were documented in accordance with the licensee's Corrective Action Program in Condition Record 03-13724. No additional issues were identified by the inspectors. This LER is closed.

.7 (Closed) LER 0500499/2002-004-001: Turbine Blade Failure

On December 15, 2002, Unit 2 was manually tripped in response to high turbine generator vibrations and indications of turbine damage. The issues associated with this LER were discussed in NRC Inspection Report 0500499/2002005. The NRC's review of the licensee's response to the event was documented in NRC Inspection Report 0500499/2003010. The corrective actions implemented in response to this event were detailed in accordance with the licensee's Corrective Action Program in Condition Report 02-19072. No additional issues were identified by the inspectors. This LER is closed.

4OA4 Cross Cutting Aspects of Findings

Section 2OS2 describes two findings involving human performance aspects. The first finding involves the failure of licensee personnel to use the proper radiation work permit for high radiation area access. The second finding involves the failure of licensee personnel to clearly communicate necessary radiological work plan activities and responsibilities during the reactor head lift.

4OA5 Other

.1 (Closed) URI 05000498;499/2004002-03: Control Room Envelope HVAC Testing

See Section 4OA3.1 for review of LER 05000498;499/2004002: Control Room Envelope HVAC Testing. No other findings were identified. This URI is closed.

.2 Temporary Instruction (TI) 2515/154: "Spent Fuel Material Control and Accounting at Nuclear Power Plants"

a. Scope

The inspectors collected the data specified in Phases I and II of the TI. The data was forwarded to the individuals identified in the TI, for consolidation and assessment.

b. Findings

No findings of significance were identified.

.3 The inspectors reviewed the World Association of Nuclear Operators Peer Review

report for the site visit during the weeks of January 19 and 26, 2004. The inspectors did not identify any findings that warranted additional tracking.

4OA6 Meetings, Including Exit

The results of the permanent plant modifications inspection effort were presented to Mr. J. Sheppard and other members of licensee management on August 12, 2004.

The results of the emergency preparedness exercise inspection were presented to Mr. J. Sheppard and members of his staff at the conclusion of the inspection on August 13, 2004. During the meeting, the inspectors returned the only proprietary document reviewed during the inspection to the facility emergency preparedness supervisor.

The results of the radiation safety inspection were presented to Mr. G. Parkey, Executive Vice President of Generation and General Plant Manager, and other members of his staff on September 2, 2004.

The results of the resident inspection were presented to Mr. T. Jordan, Vice President, Engineering & Technical Services, and other members of licensee management on September 30, 2004.

In each case, the inspectors asked the licensee representatives whether any materials examined during the inspection should be considered proprietary. No additional proprietary information was identified.

Other Meetings

On September 8, 2004, Mr. Luis Reyes, NRC Executive Director for Operations and Dr. Bruce Mallett, Regional Administrator, Region IV, toured the plant and visited with licensee management.

40A7 Licensee-identified Violations

None.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

R. Aguilera, Supervisor Radiological Engineering, Health Physics
W. Bealefield, Senior Staff Specialist
J. Beers, Supervisor, Design Engineering
C. Bowman, Manager, Plant Engineering
W. Bullard, Manager, Health Physics
K. Coates, Manager, Maintenance
F. Cox, Design Engineer
J. Crenshaw, Manager, Plant Engineering
L. Earls, Consulting Engineer, Health Physics
R. Gangluff, Manager, Chemistry
E. Heacock, Senior Electrical Design Engineer
S. Head, Manager, Licensing
K. House, Supervisor, Plant Design Engineering
M. Johnson, Licensing Specialist
G. Jones, IAC Senior Design Engineer
T. Jordan, Vice President, Engineering and Technical
J. Jump, Manager Training
M. Kanavos, Manager, Design Engineering
D. Leazar, Manager, Nuclear Fuels and Analysis
R. Laroya, Quality, Senior Reactor Operator
M. McBurnett, Manager, Quality and Licensing
M. Meier, Manager Generation Station Support
A. Mikus, Supervisor, Communication and Public Affairs
W. Mookhoek, Licensing Engineer
J. Morris, Licensing Engineer
A. Morgan, Supervisor, Emergency Response
J. Myers, ALARA Specialist, Health Physics
G. Parkey, Vice President, Generation
U. Patel, Senior Engineer
L. Peter, Manager, Operations Division Unit 2
G. Powell, Manager, Operating Experience Group
K. Richards, Manager, Outage and Projects
D. Rohan. Licensed Operator, Operations Support
W. Russell, Procedure Supervisor
R. Savage, Senior Staff Specialist
W. Schulz, Mechanical Senior Design Engineer
P. Serra, Manager, Plant Protection
J. Sheppard, President and CEO
B. Sotos, IAC Engineer
C. Stone, Supervisor, Health Physics

D. Swett, Supervisor ALARA/Planning, Health Physics
K. Taplett, Licensing Engineer
S. Thomas, Manager, Engineering Projects
D. Towler, Manager, Quality
T. Walker, Manager, Quality
G. Williams, Specialist, Health Physics

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Open

05000499/2004004-01	NCV	Failure to use a proper high radiation area radiation work permit (Section 2OS2)
05000499/2004004-02	NCV	Failure to perform a radiological survey (Section 2OS2)
05000498;499/2004004-03	NCV	Failure to Comply with Technical Specification Surveillance Requirements for Control Room Envelope (Section 4OA3.1)
05000498/2004004-04	NCV	Containment Integrity Degraded Due to Failure to Maintain Plant Equipment Configuration Control (Section 4OA3.2)

Closed

05000499/2004004-01	NCV	Failure to use a proper high radiation area radiation work permit (Section 2OS2)
05000499/2004004-02	NCV	Failure to perform a radiological survey (Section 2OS2)
05000498;499/2004004-03	NCV	Failure to Comply with Technical Specification Surveillance Requirements for Control Room Envelope (Section 4OA3.1)
05000498/2004004-04	NCV	Containment Integrity Degraded Due to Failure to Maintain Plant Equipment Configuration Control (Section 4OA3.2)
05000498;499/2004-002-00	LER	Control Room Envelope HVAC Testing (Section 4OA3.1)

05000498/2004-003-00	LER	An Unanalyzed Condition That Significantly Degraded Plant Safety Due to a Valve Out of Position (Section 4OA3.2)
05000498/2003-001-00	LER	Partial Loss of Offsite Power in Units 1 and 2 Resulting in an Engineered Safety Feature Actuation (Section 4OA3.3)
05000498/2003-002-00, 01	LER	Manual Reactor Trip Due to Reduced Deaerator Level (Section 4OA3.4)
05000499/2003-002-00	LER	Automatic Safety Injection Actuation (Section 4OA3.5)
05000498/2003-005-00	LER	Auxiliary Feedwater Pump 11 Breaker Failure to Close (Section 4OA3.6)
0500499/2002-004-001	LER	Turbine Blade Failure (Section 4OA3.7)
05000498;499/2004002-03	URI	Control Room Envelope HVAC Testing (Section 4OA5.1)

LIST OF DOCUMENTS REVIEWED

In addition to the documents identified in the inspection report, the following documents were selected and reviewed by the inspectors to accomplish the objectives and scope of the inspection and to support any findings:

Section 1EP1 Exercise Evaluation (71114.01)

South Texas Project Emergency Plan, Revision 20, ICN-20-1
Emergency Response Procedures:
0ERP01-ZV-TS01, “TSC Manager,” Revision 10
0ERP01-ZV-TS04, “Radiological Manager,” Revision 10
0ERP01-ZV-IN01, “Emergency Classification,” Revision 6
0ERP01-ZV-IN02, “Notifications to Offsite Agencies,” Revision 17
0ERP01-ZV-IN03, “Emergency Response Organization Notification,” Revision 10
0ERP01-ZV-IN07, “Offsite Protective Action Recommendations,” Revision 9
0ERP01-ZV-EF01, “EOF Director,” Revision 11
0ERP01-ZV-EF03, “Radiological Director,” Revision 9
0ERP01-ZV-EF15, “Dose Assessment Specialist,” Revision 4
0ERP01-ZV-EF18, “Offsite Agency Communicator,” Revision 5

Emergency Planning Policy Guides:

0PGP05-ZV-0001, “Emergency Response Exercises and Drills,” Revision 06
0PGP05-ZV-0002, “Emergency Response Activities Schedule,” Revision 10
0PGP03-ZT-0139, “Emergency Preparedness Training Program,” Revision 09
0PEP02-ZG-0007, “Post Accident Failed Fuel Guidelines,” Revision 03

White Team NRC/FEMA Evaluated Exercise August 10-11, 2004, Management Critique

Emergency Response Desktop Guides:

ZV-0001, “STAMPEDE Users Manual,” Revision 00
ZV-0013, “Alert Radio Maintenance and Distribution,” Revision 00
ZV-0014, “Emergency Response Equipment Operability,” Revision 00

Emergency Planning Policy Guides:

0PGP05-ZV-0003, “Emergency Response Organization,” Revision 07
0PGP05-ZV-0007, “Prompt Notification System,” Revision 06
0PGP05-ZV-0013, “Performance Indicator Tracking Guide,” Revision 01

Emergency Exercise/Event Reports:

Red Team NRC/FEMA Evaluated Exercise, July 10, 2002
Red Team tabletop drill, June 19, 2003
Unusual Event of July 16, 2003 from Hurricane Claudette
White Team Exercise, August 27, 2003
Unusual event of April 6, 2004 from tornado observation
White Team combined functional drill, May 25, 2004
White TeamDress Rehearsal Exercise, June 22, 2004

Permanent Plant Modification Inspection (71111.17B)

Condition Records:

CR-03-10873, “... Actions taken as the result of Hurricane Claudette...”
CR-04-00254, “Evaluate the addition of shelter in the STP PAR Scheme”
CR-04-04829, “LER 1-04-004; Invocation of 10CFR50.54(X)..."
CR-04-11148, “Operations-relief unit supervisors have not been reported in the key ERO PI”

Procedures

0PGP03-ZE-0310, “Plant Modifications and Minor Change Enhancement,” Revision 6
0PGP03-ZO-0003, “Temporary Modifications,” Revision 20
0PGP04-ZA-0002, “Condition Report Engineering Evaluation,” Revision 5
0POP01-ZA-0049, “Condition Report Operations Evaluation Program,” Revision 3

0PGP03-ZX-0002, “Condition Reporting Process,” Revision 27
0POP04-ZE-0309, “Design Change Package,” Revision 13

Modifications

DCP 98-687-9	DCP 01-7156-5	DCP 00-16406-7	DCP 02-17085-8
DCP 03-1605-1	DCP 03-2041-21	DCP 03-11703-6	DCP 0313944-3
DCP 00-10937-3			

Condition Reports

02-14070	02-16457	02-17395	02-19155	03-3192
03-3597	03-11696			

Completed Test Procedures

Feedwater Isolation Valve Energize-to-Actuate Post Modification Test

Section 2OS2: ALARA Planning and Controls (71121.02)

Corrective Action Documents

04-01340	04-04888	04-05556	04-06477
04-02938	04-05010	04-05609	04-06675
04-04511	04-05131	04-05716	04-06755
04-04515	04-05345	04-05756	04-07604
04-04543	04-05383	04-05757	04-08528
04-04624	04-05396	04-05786	04-10246
04-04684	04-05476	04-05901	04-10830
04-04700	04-05480	04-06317	

ALARA Review Packages

04-1149-01	2RE10 Steam Generator Primary Side Inspections
04-1149-02	2RE10 Steam Generator Secondary Side Inspections
04-1149-03	2RE10 Rapid Refueling
04-1149-05	2RE10 Reactor Coolant Pump 2C Motor Replacement
04-1149-06	2RE10 Reactor Coolant Pump 2B Platform Modification
04-1149-07	2RE10 Core Exit Thermocouples
04-1149-09	2RE10 Replacement of NI Detectors and Cabling
04-1149-12	2RE10 In Service Inspections and FAC Testing

Quality Observations, and Monitoring Reports

GO-04-0-0381	GO-04-9-0708	GO-04-9-1775
GO-04-1-0892	GO-04-9-0703	MN-04-2-0288
GO-04-9-0679	GO-04-9-0733	MN-04-2-0426

Procedures

0PGP03-ZR-0051	Radiological Access and Work Controls, Revision 18
0PGP03-ZR-0052	ALARA Program, Revision 7
0PRP07-ZR-0001	ALARA Engineering and Procedure Review, Revision 2
0PRP07-ZR-0004	Temporary Shielding, Revision 8
0PRP07-ZR-0010	Radiation Work Permits, Revision 14
0PRP07-ZR-0011	Radiological Work ALARA Reviews, Revision 5
0PRP08-ZR-0001	Personnel Decontamination, Revision 6

ALARA Committee Minutes
Meeting Minutes dated March 1, 2004
Meeting Minutes dated April 7, 2004
Meeting Minutes dated June 24, 2004

Miscellaneous
Form 1, Declaration of Pregnancy dated August 17, 2004
Long Range ALARA Plan - 2004 Revision
Radiation Work Permit 2004-0-0002, “Maintenance and Plant Support”
Radiation Work Permit 2004-0-0012, “HRA/HCA - Maintenance and Plant Support”
Temporary Shielding Request 2004-2-002
Temporary Shielding Request 2004-2-014
Temporary Shielding Request 2004-2-015
Unit Two Tenth Refueling Outage ALARA Report

LIST OF ACRONYMS

ALARA	As Low As is Reasonably Achieved
CFR	*Code of Federal Regulations*
CR	condition report
LER	licensee event report
NCV	noncited violation
URI	unresolved item
WAN	work authorization number