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

October 4, 2000

Randal K. Edington, Vice President - Operations
River Bend Station
Entergy Operations, Inc.
P.O. Box 220
St. Francisville, Louisiana 70775

SUBJECT: RIVER BEND STATION--NRC INTEGRATED INSPECTION REPORT NO. 50-458/00-13

Dear Mr. Edington:

The NRC conducted inspections on August 6 through September 23, 2000, at your River Bend Station facility. The enclosed report presents the results of these inspections which were discussed with you and other members of your staff.

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

Based on the results of these inspections, the NRC has identified five issues that were evaluated under the risk significance determination process as having a very low safety significance (green). The NRC has also determined that four violations are associated with these issues. These violations are being treated as noncited violations (NCVs), consistent with Section VI.A.1 of the Enforcement Policy. These NCVs are described in the subject inspection report. If you contest the violation or significance of these NCVs, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with copies to the Regional Administrator, U.S. Nuclear Regulatory Commission, Region IV, 611 Ryan Plaza Drive, Suite 400, Arlington, Texas 76011, the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the River Bend Station facility.

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/

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

Docket No.: 50-458
License No.: NPF-47

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NRC Inspection Report No.
50-458/00-13

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ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket No.:	50-458
License No.:	NPF-47
Report No.:	50-458/00-13
Licensee:	Entergy Operations, Inc.
Facility:	River Bend Station
Location:	5485 U.S. Highway 61 St. Francisville, Louisiana
Dates:	August 6 through September 23, 2000
Inspectors:	T. W. Pruett, Senior Resident Inspector S. M. Schneider, Resident Inspector R. A. Kopriva, Senior Project Engineer J. S. Dodson, Health Physicist
Approved By:	William D. Johnson, Chief, Project Branch B Division of Reactor Projects

ATTACHMENTS: 1. Supplemental Information

2. NRC's Revised Reactor Oversight Process

SUMMARY OF FINDINGS

River Bend Station
NRC Inspection Report 50-458/00-13

IR 05000458-00-13; on 8/6-9/23/2000; Entergy Operations, Inc; River Bend Station. Integrated Resident/Regional Report. Equip. Align., Lic. Oper., Maint. Rule Impl., Pers. Perf. During Nonroutine Evol.& Events, Op. Evals., Rad. Mat. Process. & Trans.

The report covers a 7-week period of resident inspection and two announced inspections by a regional health physicist. 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.

Cornerstone: Mitigating Systems

- Green. The inspectors determined that scaffold components were installed in contact with permanent plant equipment without prior engineering approval. During tours of the plant between July 10 and September 7, 2000, the inspectors identified incorrectly installed scaffolding which contacted systems involving: control air, standby gas treatment, the main plant exhaust stack, and 480 volt switchgear. Additionally, scaffolding was identified which could have affected the operation of an auxiliary building ventilation system damper. The failure to properly install plant scaffolding as required by plant procedures was a violation of Technical Specification 5.4.1.a. This violation is being treated as a noncited violation consistent with Section VI.A.1 of the NRC Enforcement Policy. This issue was entered in the licensee's corrective action program as Condition Reports 2000-1350, 2000-1577, 2000-1584, and 2000-1657.

  The inspectors determined that the safety significance of the improperly installed scaffolding was very low because redundant components not affected by scaffolding were available (Section 1R04.1).

- Green. The inspectors determined that the licensee did not implement corrective actions for identified safety-related operations procedural technical deficiencies. Between April 3, 1995, and June 14, 2000, operations personnel did not implement corrective actions to revise eight operating procedures following the licensee's identification of technical deficiencies with the documents. The failure to properly identify and resolve technical deficiencies in procedures was a cross-cutting issue which was representative of a programmatic problem which had the potential to impact safety in that: operations personnel were not familiar with the procedure revision process, supervisory or peer reviews were typically not completed for procedure action requests, the operations procedure group was not aware of the content of the procedure revision backlog, quality assurance audits of procedure controls did not assess the content of the procedure backlog, periodic reviews of most operating procedures were not performed, and technical deficiencies with operations procedures remained uncorrected for several years. The failure to implement corrective actions for conditions adverse to quality was a violation of Criterion XVI of Appendix B to 10 CFR Part 50. This violation is being treated as a noncited violation consistent with Section VI.A.1 of the NRC Enforcement Policy. This issue was entered in the licensee's corrective action program as Condition Report 2000-1442.

The inspectors determined that the technical deficiencies associated with the procedures were of very low safety significance because, although the deficiencies could have caused some confusion and delay, trained operators would likely have been able to recognize the deficiencies and take the appropriate actions (Section 1R11).

- Green. The inspectors determined that engineering personnel did not properly characterize a maintenance activity associated with Valve E12-F067, which unexpectedly isolated residual heat removal Train C, as a maintenance preventable functional failure. The licensee's maintenance rule determination incorrectly assumed that a functional failure could not occur if the system was considered Technical Specification inoperable. This closes Unresolved Item 50-458/0011-04.

  The safety significance of this issue was very low because the additional maintenance preventable function failure did not result in the residual heat removal system exceeding a maintenance rule performance monitoring criteria of less than or equal to one maintenance preventable functional failure in an 18-month period. Additionally, two redundant trains of low pressure coolant injection remained available (Section 1R12.2).

- Green. The inspectors identified four examples of a failure to have adequate procedures or follow procedures. Specifically, offgas system procedures did not provide instructions which were appropriate to the circumstances in that no limitations on air purge flow rates were specified when operating offgas air purge Valves N64-F004A and -B. Consequently, on August 21, 2000, operations personnel fully opened an air purge valve, which resulted in a backpressure on the steam jet air ejectors and subsequent insertion of a manual reactor scram due to lowering main condenser vacuum. Additionally, during reviews of operability evaluations between August 31 and September 11, 2000, the inspectors identified inadequate operability evaluations involving: an inverter, 480 volt breakers, and standby cooling tower switchgear room ventilation. The failure to provide offgas system procedures with instructions appropriate to the circumstances and the failure to adequately perform operability evaluations as required by plant procedures was a violation of Criterion V of Appendix B to 10 CFR Part 50. This violation is being treated as a noncited violation consistent with Section VI.A.1 of the NRC Enforcement Policy. This issue was entered in the licensee's corrective action system as Condition Reports 2000-1506, 2000-1553, 2000-1572, and 2000-1583.

  The inspectors determined that the safety significance of the inadequate procedure and loss of main condenser vacuum with manual reactor scram event was very low. The reactor trip was uncomplicated and the main condenser remained in service throughout the duration of the scram recovery actions. Additionally, all equipment and operator responses following the event were appropriate. The safety significance of the inadequate operability evaluations was also very low in that subsequent operability evaluations determined that the affected components would have performed their intended safety functions (Sections 1R14 and 1R15).

Cornerstone: Public Radiation Safety

- Green. The inspector identified that the licensee did not properly classify the radioactive waste in two shipments. Radioactive Waste Shipments 00-058 and 00-059 contained sock type mechanical filters; however, there was no 10 CFR Part 61 waste stream analysis for any mechanical filters. Instead, the licensee utilized a bead resin waste stream analysis to classify the shipments. The licensee had not confirmed, through sampling and analysis, that these two waste streams were similar. Because the licensee had not sampled and analyzed the sock type mechanical filter waste stream, it did not provide reasonable assurance that the indirect method of identifying radionuclides was valid. Therefore, the radioactive waste in Radioactive Material Shipments 00-058 and 00-059 were not properly classified in accordance with 10 CFR 61.55 and were two examples of a violation of 10 CFR Part 20, Appendix G. This violation is being treated as a noncited violation consistent with Section VI.A.1 of the NRC Enforcement Policy. This issue was entered in the licensee's corrective action program as Condition Report 2000-1463.

  The inspectors determined that the improper classification of radioactive material shipments was of very low safety significance because the shipments were not underclassified (Section 2PS2).

Report Details

Summary of Plant Status: The plant operated at essentially 100 percent power up to August 21, 2000. On August 21, 2000, operations personnel inserted a manual reactor scram due to lowering main condenser vacuum. On August 25, 2000, following repairs to the offgas system, the licensee commenced a reactor startup. The plant reached 100 percent power on August 27, 2000. The plant operated essentially at 100 percent power throughout the remainder of the inspection period.

1. REACTOR SAFETY
Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, Emergency Preparedness

1R04 Equipment Alignment (7111104)

.1 Installation of Scaffolding in Safety-Related Areas

a. Inspection Scope

The inspectors performed walkdowns of plant spaces to ensure temporary and permanent plant scaffolding was installed in accordance with Procedure GMP-0101, "Scaffold Installation and Removal."

b. Findings

The inspectors identified a violation for the failure to install scaffolding as required by Section 5.12 of Procedure GMP-0101, which specified that at no time shall scaffold components be allowed to come in contact with permanent plant equipment without prior engineering approval.

On July 10, 2000, the inspectors identified that temporary scaffolding had been installed in contact with the safety-related air supply for control building air-operated dampers without prior engineering approval. The licensee implemented immediate corrective actions to remove the scaffolding. Additionally, maintenance support personnel completed a walkdown of scaffolding erected in the plant and did not identify any other scaffolding issues.

On July 11, 2000, the inspectors questioned operations personnel on the impact the scaffolding may have had on the operability of the air supply to control building air-operated dampers. Operations personnel were unaware of the issue and informed the inspectors that a condition report had not been initiated. Following the discussion with the inspectors, maintenance support personnel initiated Condition Report (CR) 2000-1350 to document the noncompliance with Procedure GMP-0101.

On July 20, 2000, the inspectors informed licensee management that the incorrect installation of scaffolding appeared to be an isolated example and dispositioned the noncompliance as a minor violation which was not documented in an NRC inspection report.

On August 29, 2000, the inspectors identified that scaffolding in standby gas treatment Room A was in direct contact with two standby gas treatment filter Train A drain lines and that scaffolding obstructed the operation of auxiliary building ventilation Damper HVR-DMP46. Maintenance support personnel implemented corrective actions to remove the scaffolding; however, no condition report or walkdown of additional scaffolding was completed.

On August 31, 2000, the inspectors questioned operations personnel to determine if a condition report had been written on the scaffolding issues in standby gas treatment Room A. Operations personnel stated that a condition report had not been initiated. On September 6, 2000, maintenance support personnel initiated CR 2000-1577 to document the discrepancies with the scaffolding in standby gas treatment Room A. Additionally, maintenance support personnel completed a walkdown of installed scaffolding. No deficiencies were identified during the walkdown. The inspectors reviewed the evaluation associated with operation of Damper HVR-DMP46. Even though the scaffolding would have impacted the operation of the damper, it would not have impacted the ability of plant ventilation systems to respond during a plant event.

On September 7, 2000, the inspectors completed a limited walkdown of scaffolding installed in the auxiliary building crescent area, the 114 foot elevation of the auxiliary building, and adjacent to the main plant exhaust stack. The inspectors identified that scaffolding had been installed in contact with piping that exhausted to the main plant stack and that a ladder used to gain access to a scaffold platform was in contact with Motor Control Center NHS-MCC-2L2. Maintenance support personnel initiated CR 2000-1584 and implemented corrective actions to remove the effected scaffolding.

On September 15, 2000, the inspectors questioned the licensee to determine if the scaffolding which had been installed in contact with plant equipment had been evaluated for past operability. The licensee stated that the operability review should have been completed as part of the reportability review for each condition report. The inspectors reviewed CRs 2000-1350, 2000-1577, and 2000-1584 and determined that the reportability review had not assessed past operability. As a result, the licensee initiated CR 2000-1657 and commenced a review to determine the effect of the incorrectly installed scaffolding on the past operability of plant equipment.

The inspectors determined that the safety significance of the improperly installed scaffolding was very low because redundant components not affected by scaffolding were available. Nevertheless, the inspectors determined that the issue was more than a minor violation because, if the process controls for scaffold construction were left uncorrected, the issue could become a more safety significant concern.

Technical Specification 5.4.1.a requires, in part, that written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. Section 9 of Appendix A of Regulatory Guide 1.33 requires the licensee to have procedures for performing maintenance. Section 5.11 of Procedure GMP-0101, "Scaffold Installation and Removal," specified that scaffold components shall at no time be allowed to come in contact with permanent plant equipment without prior engineering approval. The installation of scaffolding in contact with permanent plant equipment in

five areas of the plant without prior engineering approval is a violation of Technical Specification 5.4.1.a and is being treated as a noncited violation (NCV 50-458/0013-01). This violation is in the licensee's corrective action program as Condition Reports 2000-1350, 2000-1577, 2000-1584, and 2000-1657.

.2 Verification of Standby Service Water System

a. Inspection Scope

The inspectors performed an equipment alignment check on the standby service water system to verify that the system was properly configured. The inspectors reviewed documents to determine the correct system lineup, performed a walkdown to identify any discrepancies between the existing system lineup and the correct lineup, reviewed outstanding maintenance work requests and deficiencies which would preclude the system from performing its function, and reviewed outstanding design issues and items tracked by the engineering department. The inspectors also sampled the condition reporting system to verify equipment alignment problems were being identified at an appropriate threshold and properly evaluated for resolution. The following procedures and documents were reviewed during the assessment:

- Service Water System Design Criteria, System Number 256, Standby Service Water
- Updated Safety Analysis Report (USAR)
- Engineering Diagram, PID-9-10E, System 256, "Service Water-Standby"
- SOP-0042, "Standby Service Water System (SYS #256)"
- STP-256-0201, "SWP Valve Lineup Verification"
- CSP-0006, "Chemistry Surveillance and Scheduling System"
- EOP-0005, Enclosure 22, "RPV Injection/Containment Flooding With Service Water"
- River Bend Station 10 CFR 50.59 Summary Report

b. Findings

There were no findings identified.

1R05 Fire Protection (7111105)

a. Inspection Scope

The inspectors toured standby gas treatment Room A, the fuel building 70 foot elevation, diesel generator Stairwell DG-067-01, and Tunnel B to assess the control of

transient combustible material, operational effectiveness of fire protection equipment, and the material condition of fire barriers. The following procedures were reviewed during the assessment:

- FPP-0030, "Storage of Combustibles"
- FPP-0050, “Handling of Flammable Liquids and Gases"
- FPP-0040, “Control of Transient Combustibles”

b. Findings

There were no findings identified.

1R06 Flood Protection Measures (7111106)

a Inspection Scope

The inspectors verified that the licensee’s flooding mitigation plans and equipment were consistent with the licensee’s design requirements and the risk analysis assumptions. The areas inspected were Flood Zones AB-141-FL4 and AB-114-FL6 (auxiliary building 141 and 114 foot elevations, Flood Zones 4 and 6). These areas were inspected due to their susceptibility to internal flooding as identified in the USAR, the River Bend Individual Plant Evaluation, and flooding Calculation G13.18.12.3-15-0, “Internal Flooding Screening Analysis.” The following documents were reviewed during the assessment:

- Calculation G13.18.12.3*13, Revision 0, "Miscellaneous Internal Flooding Calculations"
- Calculation G13.18.12.3-15-0, “Internal Flooding Screening Analysis”
- Calculation G13.18.2.0*35, Revision 1, "Auxiliary Building Flooding Level 141, 15,000 Gallons Service Water"
- Calculation G13.2.3 (PN-314), Revision 0, "Maximum Flood Elevations for Moderate Energy Line Cracks in Category I Structures"
- Individual Plant Examination
- Updated Safety Analysis Report

b. Findings

There were no findings identified.

1R07 Heat Exchangers (7111107)

a. Inspection Scope

No risk significant heat exchangers were tested during the inspection period. Consequently, this inspection was not completed.

b. Findings

There were no findings identified.

1R11 Operator Requalification (7111111)

a. Inspection Scope

In response to observations during requalification training which involved procedure revisions, the inspectors reviewed open procedure action requests (PARs) for 14 randomly selected system operating, annunciator response, and abnormal operating procedures to determine if operations personnel were implementing corrective actions for identified technical deficiencies with plant procedures. The following documents and procedures were reviewed during the assessment:

- ADM-0006, “Controlled Documents and Plant Records”
- ADM-0022, "Conduct of Operations"
- OSP-0007, “Preparation, Review and Revision of Operations Sections Procedures”
- RBNP-0001, “Control and Use of River Bend Station Procedures”
- Guidelines for Development, Revision, and Use of River Bend Station Procedures
- River Bend Station Technical Specifications
- Quality Assurance Surveillance Report 801004
- Quality Assurance Audit Report 98-09-I-DOCC/PROREV
- Quality Assurance Audit Report 99-10-I-OPS

b. Findings

One violation was identified for the failure to implement corrective actions to revise procedures following the identification of technical deficiencies.

On July 27, 2000, during an observation of requalification training, the inspectors observed that the automatic actions specified in Procedure ARP-1RMS-DSPL230,

"DRMS RM-11 CRT Alarm Response," Alarm Point 1GP011, were incorrect. Procedure ARP-1RMS-DSPL230 specified that auxiliary building ventilation upstream isolation supply Damper 1HVR-AOD164 automatically closed when it did not. The inspectors questioned training personnel to determine if an immediate revision needed to be issued to correct the technical deficiency with Procedure ARP-1RMS-DSPL230. Training personnel stated that the technical deficiency had been documented with comment PAR ARP-1RMSDSPL230R1CM-03 on March 4, 1998, and that the procedure did not need to be corrected until the next revision.

Section 5.7 of Procedure RBNP-0001 specified that comment PARs were used to recommend improvements to procedures. The inspectors determined through discussions with operations management and the operations procedure group that comment PARs were not to be used to correct technical deficiencies identified in plant procedures. During a subsequent review of comment PAR ARP-1RMSDSPL230R1CM-03 by operations personnel and the operations procedure group, the licensee determined that the comment PAR was inappropriate and that the technical deficiency should have been corrected by an immediate revision to the procedure.

On August 3, 2000, the inspectors requested a listing of all open PARs involving safety-related operations procedures. The operations procedure group provided a listing of 144 open PARs affecting safety-related abnormal operating, system operating, and annunciator response procedures.

On August 4, 2000, the licensee initiated CR 2000-1442 to document the licensee's identification that five comment and editorial change PARs were used when a procedure revision should have been initiated.

On August 15, 2000, the inspectors completed a review of 49 PARs associated with five abnormal operating procedures, five annunciator response procedures, and four system operating procedures. During the review, the inspectors identified seven additional comment or editorial change PARs that involved technical deficiencies which should have been corrected by an immediate procedure revision. Specifically:

- On October 12, 1999, comment PAR AOP-003R16CM-02 was initiated for Procedure AOP-0003, "Automatic Isolations." The PAR specified that, for a Signal D Actuation and Isolation, the Group 3 valves are not affected on high drywell pressure unless a concurrent reactor core isolation cooling steam supply pressure low signal is received. Following questioning by the inspectors, operations personnel determined that the comment PAR was inappropriate and initiated a revision to correct the procedure.

- On February 9, 2000, comment PAR AOP-0016R12CM-03 was initiated for Procedure AOP-0016, "Loss of Standby Service Water." The PAR specified that return header isolation Valve SWP-V1213 should be listed. Valve SWP-V1213 would only be closed in step 5.1.7 if Valve MOV-096A had failed to close. If MOV-096A was closed and inventory is still being lost, then all four manual

isolation valves should be closed. Following questioning by the inspectors, operations personnel determined that the comment PAR was inappropriate and initiated a revision to correct the procedure.

- On December 27, 1999, comment PAR ARP-863-71R07BCM-05 was initiated for Procedure, ARP-863-71, “Panel 863-71A Alarm Response,” Window G07. The PAR specified that the annulus exhaust radiation alarm automatic actions to close auxiliary building exhaust system suction Valve HVR-AOD249 should be changed to close auxiliary building exhaust system Dampers HVR-AOD-010A and AOD-010B. Following questioning by the inspectors, operations personnel determined that the comment PAR was inappropriate and initiated a revision to correct the procedure.

- On, April 3, 1995, comment PAR ARP-863-71R07CM-01 was initiated for Procedure ARP-863-71, Window C07. The PAR specified that the annulus exhaust radiation alarm automatic actions to close auxiliary building exhaust Dampers HVR-AOD10A and 10B, and the trip of auxiliary building exhaust Fans HVR-FN7A and -B should be deleted. Following questioning by the inspectors, operations personnel determined that the comment PAR was inappropriate and initiated a revision to correct the procedure.

  Comment PAR ARP-863-71R07CM-01 also included the same deficiency described in comment PAR ARP-863-71R07BCM-05.

- On December 27, 1996, comment PAR ARP-863-71R7ACM-01 was initiated for Procedure ARP-863-71, Window E03. The PAR specified that the drywell unit cooler low flow alarm setpoint for DRS-FS57A changed from -.253 inches of water gauge (inwg) to -.300 inwg and the setpoint for DRS-57B changed from -.45 inwg to -.300 inwg. The changes were done per Modification Request 94-0096, “Revise Setpoints of 1DRS-FS57A-F." Following questioning by the inspectors, operations personnel determined that the comment PAR was inappropriate and initiated a revision to correct the procedure.

- On March 31, 1998, editorial change PAR ARP-870-51R08AEC-B was initiated for Procedure ARP-870-51, “Panel 870-51 Alarm Response,” Window G03. The PAR specified that level extreme high should be changed to level extreme low for five computer points. Following questioning by the inspectors, operations personnel determined that the editorial change PAR was inappropriate and initiated a revision to correct the procedure.

- On June 14, 2000, editorial change PAR SOP-0042R18BEC-C was initiated for Procedure SOP-0042, “Standby Service Water System.” The PAR specified that the equipment nomenclature in the electrical lineup for Breaker 17 of Panel ENB-PNL02A was incorrect. Following questioning by the inspectors, operations personnel determined that the editorial change PAR was inappropriate and initiated a revision to correct the procedure.

The inspectors identified that, in most instances, no supervisory reviews of comment PARs were made. The preparer of the comment PAR received a tracking number from

the administrative services group and the comment PAR was placed in a folder for the next routine revision of the affected procedure. Consequently, operations personnel and the operations procedure group were not aware of the content of comment PARs in the procedure revision backlog. Additionally, quality assurance personnel had not assessed the content of the procedure revision backlog during audits and surveillances of procedure controls.

Section 6.4.2 of Procedure ADM-0022 specified that the operations superintendent was responsible for conducting a periodic review of operating procedures per Procedure RBNP-0001 with the exception of abnormal operating procedures and emergency operating procedures, which will be reviewed annually. Additionally, Procedure ADM-0022 required documentation of the completed review. The inspectors reviewed Procedure RBNP-0001 and determined that no requirements were specified which involved periodic reviews of operations procedures other than the annual requirement to review abnormal operating, emergency operating, fire protection, security, and severe accident procedures. In addition, the operations superintendent stated that operations personnel need refresher training on the procedure revision requirements specified in Procedure RBNP-0001.

The inspectors determined that the technical deficiencies associated with the procedures were of very low safety significance because, although the deficiencies could have caused some confusion and delay, trained operators would likely have been able to recognize the deficiencies and take the appropriate actions. Nevertheless, the failure to periodically review and revise procedures was more than a minor violation because the cross-cutting issue was representative of a programmatic problem which had the potential to impact safety. Specifically, operations personnel were not familiar with the procedure revision process, supervisory or peer reviews were typically not completed on PARs, the operations procedure group was not aware of the content of the procedure revision backlog, quality assurance audits of procedure controls did not assess the content of the procedure revision backlog, periodic reviews of most operating procedures were not performed, and technical deficiencies with operations procedures remained uncorrected for several years.

Criterion XVI of Appendix B to 10 CFR Part 50 requires, in part, that measures be established to assure that conditions adverse to quality are promptly identified and corrected. Between April 3, 1995, and June 14, 2000, operations personnel did not implement corrective actions to revise eight operating procedures following the licensee's identification of technical deficiencies with the documents. The failure to implement corrective actions for conditions adverse to quality is a violation of Criterion XVI of Appendix B to 10 CFR Part 50 and is being treated as a noncited violation (NCV 50-458/0013-02). This violation is in the licensee’s corrective action program as Condition Report 2000-1442.

In response to the issue, the licensee initiated a review to determine if additional revisions needed to be made due to technical deficiencies with procedures. As a result of the review, the licensee revised 11 procedures and incorporated 5 immediate change editorial comment PARs. Additionally, the licensee initiated a corrective action to develop a long-term improvement plan for the maintenance of operations department procedures.

1R12 Maintenance Rule Implementation (7111112)

.1 Review of Maintenance Rule Determinations

a. Inspection Scope

The inspectors selected the following three performance problems associated with the standby service water system and evaluated the effectiveness of the licensee's corrective actions and maintenance rule determinations.

- CR 2000-0513, "Low Service Water Pressure Transmitter not Responding"
- CR 2000-0739, "Communication Flow Between Division I and Division II SSW"
- CR 2000-0895, "SSW Relief Valve Lifted Prematurely"

b. Findings

There were no findings identified.

.2 (Closed) Unresolved Item 50-458/0011-04

During a review of system event failure determinations associated with the residual heat removal (RHR) system, the inspectors identified CR 1999-1662, which described an inadvertent isolation of RHR C pump suction Valve E12-F105, while conducting maintenance on alternate decay heat removal system Valve E12-F067. While repacking Valve E12-F067, maintenance personnel removed the torque arm and caused the limit switch to indicate the valve was open. Valve E12-F067 was interlocked with Valve E12-F105, such that, if the limit switch for Valve E12-F067 indicated open, Valve E12-F105 would automatically close.

During the maintenance activity, the licensee had already declared RHR Train C inoperable for an unrelated reason. However, RHR Train C was considered available because it was able to perform its intended safety function of supplying water to the reactor vessel following a loss of coolant accident.

Engineering personnel completed a maintenance rule functional failure review and determined that a functional failure had not occurred because the system function was not required while RHR Train C was inoperable. Engineering personnel also determined that the inadvertent isolation made RHR Train C switch from an available to unavailable status.

The inspectors determined that a maintenance preventable functional failure had occurred because the maintenance on Valve E12-F067 resulted in the unplanned loss of the maintenance rule function of RHR Train C. In response, engineering personnel issued CR 2000-1411 and submitted a frequently asked question to the NRC to obtain clarification on when a system function is required per the maintenance rule.

In response to the frequently asked question, the NRC specified that entry into a Technical Specification limiting condition for operation does not preclude the licensee

from monitoring their performance criteria. Essentially, any event that results in the loss of a maintenance rule defined function or results in an unacceptable performance or test result due to an error or a maintenance activity process deficiency would be a maintenance preventable functional failure and should be identified and tracked as such. Therefore, the inspectors determined that engineering personnel did not properly characterize the maintenance activity associated with Valve E12-F067, which isolated RHR Train C, as a maintenance preventable functional failure.

The safety significance of this issue was very low because the failure of Valve E12-F067 did not result in the RHR system exceeding a maintenance rule performance monitoring criteria of less than or equal to one maintenance preventable functional failure in an 18-month period. Additionally, two redundant trains of low pressure coolant injection remained available.

1R13 Maintenance Risk Assessments and Emergent Work Control (7111113)

a. Inspection Scope

The inspectors evaluated the effectiveness of risk assessments performed by the licensee for the work weeks beginning August 13, September 4, and September 11, 2000. The following procedures were reviewed during the assessment:

- Maintenance Planning Guideline
- On-line Maintenance Guidelines
- Weekly Maintenance Schedules

b. Findings

There were no findings identified.

1R14 Personnel Performance During Nonroutine Plant Evolutions and Events (7111114)

a. Inspection Scope

The inspectors reviewed personnel performance immediately preceding and following the manual reactor scram due to lowering main condenser vacuum on August 21, 2000. The inspectors used NRC Inspection Manual Chapters 71111.14, “Personnel Performance During Nonroutine Plant Evolutions and Events,” and 71153, “Event Followup,” to evaluate the event response. The following licensee procedures and documents were reviewed during the assessment:

- CR 2000-1506, "Loss of Main Condenser Vacuum and Manual Scram"
- Design Specification 22A3089, "Offgas System Design Specification"
- Engineering Request 96-0045, "Offgas System Low Flow Annunciators"
- Event Notification Worksheet dated August 21, 2000

- GEK-83350, "Operation and Maintenance Instructions for Cleanup and Filtering Systems"
- ARP-845-00 Alarm G03, "Adsorber Train A Flow Hi/Low"
- GOP-0003, "Scram Recovery"
- SOP-0092, "Offgas System"
- USAR

b. Findings

One violation was identified for the failure to have a procedure which was appropriate to the circumstances for operation of the offgas system.

The following summarizes the sequence of events that caused main control room personnel to insert a manual scram of the reactor due to lowering condenser vacuum on August 21, 2000:

7:30 a.m. Adsorber Train A low flow alarm received in the main control room. The alarm setpoint was 5 standard cubic feet per minute (scfm) and the actual flow rate was 4 scfm.

3:25 p.m. A nonlicensed operator was directed by main control room personnel to open offgas system air purge Valve N64-F004, consistent with the long-term actions specified in Procedure ARP-845-00 Alarm G03.

3:26 p.m. Main condenser vacuum began to lower. Main control room personnel entered AOP-0005, “Loss of Main Condenser Vacuum, Trip of Circulating Water Pump,” and directed the nonlicensed operator to close Valve N64-F004.

3:28 p.m. Valve N64-F004 was closed. Main condenser vacuum was approximately 25.1 inches of mercury (inhg) and lowering.

3:29 p.m. Main control room personnel reduced reactor power to 90 percent.

3:30 p.m. Main control room personnel reduced reactor power to 84 percent.

3:31 p.m. Main condenser vacuum reached 24.9 inhg. Main control room personnel manually scrammed the reactor due to main condenser vacuum being less than or equal to 25 inhg. Operations personnel entered Procedures AOP-0001, "Reactor Scram"; AOP-0002, "Main Turbine and Generator Trips"; and EOP-0001, "Reactor Pressure Vessel Control."

The inspectors determined that operations personnel appropriately responded to the lowering main condenser vacuum by inserting a manual reactor scram. All safety systems functioned as expected.

Procedure ARP-845-00, Alarm G03, was revised on May 16, 2000, to specify that, if condenser air in leakage is so low that the offgas system flow is less than 7 scfm per adsorber train, then Valves N64-F003A, -F003B, -F004A, and -F004B may be opened as required, using Valves N64-F004A and -B as a last resort to clear the low flow alarm. The inspectors also reviewed PAR ARP-845-00R09PR-10, which was used to revise the procedure. The basis section of the PAR specified that Valves N64-F0004A and -B could be throttled open to raise offgas system flow above the setpoint. The inspectors determined that no warning statements, limitations, or cautions were annotated in Procedure ARP-845-00, Alarm G03, to restrict operations personnel from applying a high purge air flow rate by fully opening Valves N64-F004A and -B.

The inspectors also determined that Procedure SOP-0092 had been revised on May 16, 2000, to add the operation of Valves N64-F004A and -B as the last resort to raising offgas system flow. The basis section of PAR SOP-0092R19PR-20 also specified that Valves N64-F004A and -B could be throttled open to raise offgas system flow. The inspectors determined that no warning statements, limitations, or cautions were annotated in Procedure SOP-0092 to restrict operations personnel from applying a high purge air flow rate by fully opening Valves N64-F004A and -B.

The inspectors reviewed the 10 CFR 50.59 screening forms completed for the May 16, 2000, revisions to Procedures ARP 845-00, Alarm G03, and SOP-0092. Both screening forms specified that Valves N64-F004A and -B could be throttled open to raise offgas system flow. The screening forms specified that Valves N64-F004A and -B should not be used to introduce high purge flow rates and that the supplemental purge air to restore the low flow condition should only require 2 to 3 scfm. The screening forms also referenced USAR Section 11.3.2.1.5, which specified that the offgas system was conservatively sized for 40 scfm of air inleakage. The inspectors determined that none of the screening form limitations for operation of Valves N64-F004A and -B were included in the revisions for Procedures ARP-845-00 Alarm G03 and SOP-0092.

On August 21, 2000, at 3:26 p.m., a nonlicensed operator was directed to open Valve N64-F004A. No guidance which limited the air flow rate into the offgas system was provided by main control room personnel. The nonlicensed operator opened the valve and observed the local flow indicator increase from 13 scfm to off-scale (greater than 70 scfm). The main control room indication pegged on the normal flow range at 30 scfm and peaked at 90 scfm on the startup range. Design engineering personnel performed subsequent calculations and determined that the full equilibrium flow rate to the offgas system from fully opening Valve N64-F004A was between 300-500 scfm. Engineering personnel also determined that the increase in the air purge rate from opening Valve N64-F0004A produced a sufficient back pressure to stall the steam jet air ejectors. Once the steam jet air ejectors stalled, main condenser vacuum decreased to below 25 inhg, and operations personnel inserted a manual reactor scram.

The inspectors determined that the safety significance of the inadequate procedure and loss of main condenser vacuum with manual reactor scram event was very low. The

reactor trip was uncomplicated and the main condenser remained in service throughout the duration of the scram recovery actions. Additionally, all equipment and operator responses following the event were appropriate. Nevertheless, the issue was more than a minor violation because the inadequate offgas system procedures resulted in an actual impact on plant safety.

Criterion V of Appendix B to 10 CFR Part 50 required, in part, that activities affecting quality shall be prescribed by documented procedures of a type appropriate to the circumstances. The inspectors determined that Procedures ARP-845-00, Alarm G03, and SOP-0092 did not include instructions which were appropriate to the circumstances in that no limitations on air purge flow rates were specified when operating Valves N64-F004A and -B. The failure to provide offgas procedures with instructions appropriate to the circumstances is a violation of Criterion V of Appendix B to 10 CFR Part 50, which is being treated as a noncited violation (NCV 50-458/0013-03). The issue was entered into the licensee's corrective action system as CR 2000-1506.

Before restart of the facility on August 25, 2000, the licensee completed revisions of offgas system procedures to alert operators of the impact of operating Valves N64-F004A and -B. Additionally, the licensee completed several repair activities to improve the material condition of the offgas system. The improvements were successful in raising the flow rate through the offgas system. These repair activities included flushing of loop seal lines to remove obstructions; replacement of desiccant, prefilters, and several valves with flow obstructions; and the removal of accumulated water from low points in the offgas system.

1R15 Operability Evaluations (7111115)

a. Inspection Scope

The inspectors reviewed the following documents to ensure that operability was properly justified, the components remained available, and there was not a significant increase in risk.

- CR 2000-0353, “Reactor Vessel Level Indication B21-N680D Outside Channel Check Requirement”
- CR 2000-1553, "Inverter ENB-INV01A System Trouble Alarm Following Grid Transient"
- CR 2000-1572, "Cracks in the Base of 480 Volt Breaker Handles"
- CR 2000-1583, "Damper HVY-DMP6B Failed Open"
- Maintenance Action Item (MAI) 337736, "Standby Service Water Pumphouse Switchgear Room A Fan 2C Intake Backdraft Damper"
- Procedure RBNP-0078, "Operability Determinations"

- Calculation G13.18.2.1*072, "Ventilation and Heat Gain Requirements for SCT Pumphouse and Switchgear Rooms"

b. Findings

The inspectors identified three additional examples of the violation of Criterion V of Appendix B to 10 CFR Part 50 for the failure to complete adequate operability evaluations.

Criterion V of Appendix B to 10 CFR Part 50 required, in part, that activities affecting quality shall be prescribed by documented procedures of a type appropriate to the circumstances and shall be accomplished in accordance with these procedures. Section 6 of Procedure RBNP-0078, "Operability Determinations," required that a condition report be initiated as a mechanism to document an operability evaluation when a potential operability concern is identified. Additionally, if a structure, system, or component has a degraded or nonconforming condition, then a shift technical advisor or senior reactor operator shall develop an operability determination.

The inspectors determined that the inadequate operability evaluations were of very low safety significance in that the licensee subsequently determined that the affected components would have been able to perform their intended safety functions. Nevertheless, the inspectors determined that this issue was more than a minor violation because, if the process controls for operability determinations were left uncorrected, the issue could become a more safety significant concern.

Inverter Operability Evaluation

On August 31, 2000, coincident with a grid transient, vital bus inverter system trouble alarm for Inverter ENB-INV-01A annunciated in the main control room and would not reset. Investigation by operations personnel determined that the inverter continued to supply voltage and frequency within the design tolerances. Operations personnel documented the issue in CR 2000-1553.

On September 1, 2000, the inspectors reviewed Revisions 1 and 2 of the operability evaluation completed by operations personnel for CR 2000-1553. Two operating crews indicated in the evaluation for operability that the vital bus was being carried by the inverter with a portion of the load being supplied by the battery bus (battery charger carrying a portion of the load) verses the full load being carried by the rectifier output. Additionally, when questioned about the operability of the inverter, one of the two operating crews informed the inspectors verbally of the above stated condition.

The inspectors reviewed the bases for Technical Specification 3.8.7, "Inverters Operating," and determined that an operable inverter required that the associated vital bus be powered by the inverter via inverted dc voltage from the required Class 1E battery or from an internal ac source via a rectifier with the battery available as a backup. The inspectors determined that the inverter would be inoperable if it was

supplied by both the dc and ac sources simultaneously and that operations personnel used faulty reasoning in their development and explanation of the basis for inverter operability.

The inspectors questioned a third operating crew and the operations manager on the basis for operability described in CR 2000-1553. The operations manager and the operating crew stated that the operability evaluations were incorrect. Additionally, they stated that the inverter had not been supplied by both the dc and ac power sources as described in the condition report, but from the dc voltage source alone.

On September 5, 2000, the inspectors determined that the operability evaluations in CR 2000-1553 had not been revised to reflect the correct information regarding the condition of the inverter. Operations personnel stated that the evaluation would be revised to reflect the correct basis for operability.

On September 11, 2000, the inspectors determined that the operability evaluation for Inverter ENB-INV1A had not been revised. After additional prompting by the inspectors, operations personnel initiated CR 2000-1601 to document the basis for the operability of Inverter ENB-INV1A. The inspectors determined that the failure to perform an adequate operability evaluation for the degraded inverter was a second example of the violation of Criterion V of Appendix B to 10 CFR Part 50. This example was entered in the licensee's corrective action program as CR 2000-1553.

480 Volt Breaker Operability Evaluation

On September 6, 2000, the inspectors identified cracks in the plastic breaker handles associated with 6 safety-related 480 volt breakers. The inspectors determined that the cracks exceeded the criteria specified in Modification Request 94-0048, "Revise MCC specifications to Provide Inspection Criteria for Cracked Handles." The inspectors identified that cracks in the breaker handles were opened and that the use-as-is determination in Modification Request 94-0048 specified that replacement of the handle was required if the crack had opened or was completely through the plastic. In response, engineering personnel initiated CR 2000-1572 and a maintenance action item for each of the affected breakers.

The inspectors reviewed the operability evaluation completed by operations personnel for CR 2000-1572. Operations personnel determined that all of the equipment supplied by the breakers remained operable and that no credible failure could prevent the breaker from tripping. In addition, if mechanical operation of the affected breakers were required, the affected components would already be inoperable and repairs would need to be made prior to declaring the components operable.

The inspectors determined that Procedure AOP-0052, "Fire Outside the Main Control Room in Areas Containing Safety Related Equipment," required that operations personnel be able to manually disconnect and reconnect all loads on safety-related motor control centers. The inspectors questioned operations personnel to determine if the breakers with the cracked handles could be manually disconnected and

reconnected. Operations personnel stated that the ability to operate the breakers manually had not been assessed during the operability evaluation.

On September 7, 2000, operations personnel revised the CR 2000-1572 operability evaluation to include the preparation of a technical evaluation by engineering personnel to determine if the ability to operate the breaker manually was required for operability and, if so, would the cracked handles affect operation of the breaker.

On September 11, 2000, engineering personnel completed the technical evaluation to support operability of the breakers with the cracked handles. The technical evaluation specified that one of the functions of the breakers was to provide for manual operation to open or close the circuit. The inspectors determined that the technical evaluation appropriately considered the factors which may impact manual operation of the breaker. The inspectors determined that the failure to perform an adequate operability evaluation for the degraded breakers was a third example of the violation of Criterion V of Appendix B to 10 CFR Part 50. This example was entered in the licensee's corrective action program as CR 2000-1572.

Standby Cooling Tower (SCT) Supply Damper Operability Evaluation

On August 29, 2000, the inspectors conducted a standby service water equipment alignment review in various areas of the plant including the SCT. During the alignment check of systems in the SCT switchgear room, the inspectors noted that Damper HVY-DMP6B was open with the fan not running. The inspectors informed operations personnel in the work control center of this condition.

On August 30, 2000, the inspectors conducted a walkdown of the SCT deficiencies with the service water system engineer. At this time, Fix-It-Now team personnel were observed investigating the position of Damper HVY-DMP6B.

On August 31, 2000, the inspectors discussed the status of Damper HVY-DMP6B with work control center personnel. Work control center personnel indicated that neither an MAI nor a CR had been written to work on Damper HVY-DMP6B. They indicated that an MAI would be written to correct the damper problem. The inspectors noted that no operability evaluation had been performed on this condition.

On September 6, 2000, the inspectors contacted the work control center to determine the status of the Damper HVY-DMP6B issue. Work control center personnel indicated that no MAI or CR had been written on the damper problem. After inspector prompting, MAI 337653 was written later that day to adjust the counterweight on the damper. The inspectors noted that no operability evaluation was performed on this condition.

On September 7, 2000, CR 2000-1583 was written to document the problem with the SCT switchgear room fan damper. Fan HVY-FN2C, the fan in line with Damper HVY-DMP6B, was identified as inoperable in CR 2000-1583. However, the inspectors determined that the operability determination did not consider the effect of recirculating air from the SCT switchgear room to the inlet plenum of Fan HVY-FN2A, if Damper HVY-DMP6B failed open and Fan HVY-FN2C was secured. The inspectors

also determined that Fan HVY-FN2C was not tagged out, despite being considered inoperable, to preclude its automatic operation and thereby prevent Damper HVY-DMP6B from failing open and affecting the operation of Fan HVY-FN2A.

On September 11, 2000, the inspectors discussed the above operability evaluation with control room personnel to determine how operation with Damper HVY-DMP6B failed open affected the operability of Fan HVY-FN2A and the components in the switchgear room. Operations personnel indicated that the effect could not be determined without performing testing and calculations. Operations personnel then tagged out Fan HVY-FN2C to prevent its operation until testing and calculations could be performed to verify that Fan HVY-FN2A was not affected.

On September 14, 2000, engineering and operations personnel performed testing of the SCT ventilation system to determine the past operability of the system with SCT switchgear ventilation Damper HVY-DMP6B failed open. The testing was completed using MAI 337736 and Procedure SOP-0070, “Yard Structures - HVAC.”

MAI 337736 had maintenance personnel simulate the high temperature condition with Damper HVY-DMP6B open, Fan HVY-FN2C secured, and Fan HVY-FN2A running. In this condition, the potential existed for an unknown quantity of air to be recirculated from the SCT switchgear room. If sufficient air was recirculated, then adequate cooling would not be provided in the SCT switchgear room. Even though the system was aligned to an abnormal configuration, operations personnel did not enter the Technical Specification limiting condition for operation associated with the standby service water system. The abnormal plant configuration lasted for approximately 5 minutes, therefore, the inspectors determined that no Technical Specifications required actions needed to be completed. Nevertheless, the inspectors determined that operations personnel did not properly evaluate the effect of ventilation system testing on the operability of the standby service water system.

The inspectors determined that the failure to perform adequate operability evaluations for the degraded damper was a fourth example of the violation of Criterion V of Appendix B to 10 CFR Part 50. This example was entered in the licensee's corrective action program as CR 2000-1583.

The test results indicated that the actual total flow rate for the operating fan was 6802 cfm with 1096 cfm being recirculated through failed open Damper HVY-DMP6B. The minimum design flow requirements for the SCT switchgear room area was 5110 cfm. The licensee determined that adequate cooling existed since the total flow rate minus the recirculated air exceeded the minimum design required air flow for the SCT switchgear ventilation room. The inspectors determined that adequate cooling to the SCT switchgear ventilation room could be maintained with Damper HVY-DMP6B failed open.

1R16 Operator Workarounds (7111116)

a. Inspection Scope

The inspectors reviewed the licensee's list of identified operator workarounds and other previously identified degraded conditions on equipment not considered as operator workarounds to assess their cumulative effects on the ability of operators to respond to plant transients.

The following documents were reviewed by the inspectors during this inspection:

- Operator Work Around Main Control Room Deficiency Program Guidelines
- Operations Work Around List

b. Findings

There were no findings identified.

1R19 Postmaintenance Testing (7111119)

a. Inspection Scope

The inspectors reviewed the postmaintenance testing requirements specified for the MAIs listed below to ensure that testing activities were adequate to verify system operability and functional capability:

- MAI 334993, "Replace Valve SWP-SOV602C"
- MAI 337360, "Repair Remote Synchronizing Switch Light Socket"

b. Findings

There were no findings identified.

1R20 Refueling and Outage Activities (7111120)

a. Inspection Scope

The inspectors evaluated the licensee's activities following the August 21, 2000, reactor scram through completion of the restart of the facility on August 27, 2000, to ensure that shutdown risk was properly evaluated and that operational requirements were met prior to changing plant modes or configurations.

b. Findings

There were no findings identified.

1R22 Surveillance Testing (7111122)

a. Inspection Scope

The inspectors reviewed the surveillance tests listed below to verify that systems were capable of performing their intended safety functions and to ensure that requirements for Technical Specifications, the USAR, and procedures were met:

- STP-203-1605, “E22-S001CGR Load Test”
- STP-508-4811, "Response Time Test of Scram Relays C71A-K14's, RPS Channels A, B, C, D"
- STP-508-4815, “RPS Channel D Response Time Test”

b. Findings

There were no findings identified.

.2 (Closed) Licensee Event Report 50-458/0010: Unplanned isolation of reactor core isolation cooling system. The inspectors determined that the issue is minor and warrants no additional inspection.

1R23 Temporary Plant Modifications (7111123)

a. Inspection Scope

No risk significant temporary modifications were implemented by the facility since the last review of the area. Consequently, this inspection was not completed.

b. Findings

There were no findings identified.

1EP06 Drill Evaluation (7111406)

a. Inspection Scope

No emergency plan drills or exercises were performed by the facility during the inspection period. Consequently, this inspection was not completed.

b. Findings

There were no findings identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

2OS1 Access Controls to Radiologically Significant Areas (7112101)

a. Inspection Scope

Radiation workers and radiation protection personnel were interviewed concerning their radiation protection work requirements. A number of tours of the radiologically controlled area were conducted. The following items were reviewed and compared with regulatory requirements:

- Access controls and surveys of three significant high dose work areas in the radiologically controlled area: reactor water cleanup heat exchanger room, tip drive area, and reactor building chemistry sample panel area.
- Job-In-Progress Reviews. No work was being performed in areas less than 1 rem per hour in which collective worker exposures were estimated to result in greater than 1 person-rem. Therefore, this aspect of the above procedure could not be verified
- Radiation work permits and specified electronic pocket dosimeter setpoints
- Placement of personnel dosimetry
- Radiation postings and barricades used at entrances to high dose rate areas, high radiation areas, and very high radiation areas
- Job coverage by radiation protection personnel
- Radiation protection prejob briefing for the fuel pool cleanup work

b. Findings

There were no findings identified.

Cornerstone: Public Radiation Safety

2PS2 Radioactive Material Processing and Transportation (7112202)

a. Inspection Scope

The inspector interviewed licensee personnel, walked down liquid and solid radioactive waste processing systems, and reviewed the following items to determine if the licensee is meeting the objective of this cornerstone which is to ensure adequate protection of public health and safety from exposure to radioactive material released into the public domain from routine operations.

- Radioactive material processing and shipping procedures
- The status of radioactive waste process equipment that was not operational and/or abandoned in place
- Changes made to the radioactive waste processing systems since the last inspection in December 1999
- Waste stream mixing and/or sampling procedures, methodology for waste concentration averaging, and waste classification procedures
- Radiochemical sample analysis results for each of the radioactive waste streams
- The use of scaling factors and calculations used to account for difficult to measure radionuclides
- Changes in waste stream composition due to changing operational parameters and analysis updates
- Shipment packaging, surveying, labeling, marking, placarding, vehicle checks, emergency instructions, disposal manifest, shipping papers provided to the driver, and licensee verification of shipment readiness
- Transport cask certificates of compliance and cask loading and closure procedures
- Transferee's licenses and state/DOT permits
- Conduct of radioactive waste processing and radioactive material shipment preparation activities
- Training program for the conduct of radioactive waste processing and radioactive material shipment preparation activities
- Twelve nonexcepted package shipment records
- Licensee event reports, special reports, audits, and self-assessments related to the radioactive material and transportation programs performed since the last inspection in December 1999
- Fourteen condition reports written against the radioactive material and shipping programs since the previous inspection in December 1999

b. Findings

Waste Classification

The inspector identified that the licensee did not properly classify the radioactive waste in two shipments. During the review of the 10 CFR Part 61 analysis results and shipping

documentation packages, the inspector determined that Radioactive Waste Shipments 00-058 and 00-059 contained sock type mechanical filters. Additionally, the inspector determined that there was no 10 CFR Part 61 waste stream analysis for any mechanical filters. Instead, the licensee utilized a bead resin waste stream analysis to classify the shipments. However, the licensee had not confirmed, through sampling and analysis, that these two waste streams were similar. The licensee confirmed that there had been no previous shipments during the inspection period using this method.

10 CFR Part 20, Appendix G, Section III.A.1, requires that any licensee who transfers radioactive waste to a land disposal facility or a licensed waste collector shall prepare all wastes so that the waste is classified according to 10 CFR 61.55. 10 CFR 61.55 (a)(8) states, in part, that the concentration of a radionuclide may be determined by indirect methods, such as use of scaling factors which relate the inferred concentration of one radionuclide to another that is measured, if there is reasonable assurance that the indirect methods can be correlated with actual measurements.

Because the licensee had not sampled and analyzed the sock type mechanical filter waste stream, it did not provide reasonable assurance that the indirect method of identifying radionuclides was valid. Therefore, the waste classifications associated with Radioactive Material Shipments 00-058 and 00-059 were two examples of a violation of 10 CFR Part 20, Appendix G. This violation was processed through the Public Radiation Safety Significance Determination Process which indicated that the violation had very low safety significance because it did not cause the shipments to be underclassified. This violation is being treated as a noncited violation consistent with Section VI.A.1 of the NRC Enforcement Policy. This violation is in the licensee's corrective action program as Condition Report 2000-1463 (NCV 50-458/0013-04).

4. OTHER ACTIVITIES

4OA2 Performance Indicator Verification (71151)

a. Inspection Scope

The inspector reviewed corrective action program records for locked high radiation areas, very high radiation areas, and unplanned exposure occurrences for the past 12 months to confirm that these occurrences were properly recorded as performance indicators. Radiologically controlled area exit transactions with exposures greater than 100 millirem for the past 12 months were reviewed, and selected examples were investigated to determine whether they were within the dose projections of the governing radiation work permits. Additionally, radiological effluent release program corrective action records, licensee event reports, and annual effluent release reports documented during the past four quarters were reviewed to determine if any events exceeded the performance indicator thresholds.

b. Findings

There were no findings identified.

4OA6 Management Meetings

Exit Meeting

The health physicist inspector presented the inspection results of the radioactive material processing and transportation inspection to Mr. R. King, Director, Nuclear Safety Assurance, and other members of licensee management at an exit meeting on August 10, 2000. The licensee acknowledged the findings presented.

The health physicist inspector presented the access controls to radiologically significant areas inspection results to Mr. Dwight Mims, General Manager Plant Operations, and other members of licensee management at the conclusion of the inspection on August 25, 2000. The licensee acknowledged the findings presented.

The resident inspectors presented the results of the inspection to Mr. Dwight Mims, General Manager Plant Operations, and other members of licensee management at the conclusion of the inspection on September 26, 2000. The licensee acknowledged the findings presented.

The inspector asked the licensee whether any materials examined during the inspection should be considered proprietary. The licensee specified that offgas system design Document GEK-83350, "Operation and Maintenance Instructions for Cleanup and Filtering Systems," was proprietary information.

ATTACHMENT 1

PARTIAL LIST OF PERSONS CONTACTED

Licensee

R. Biggs, Coordinator, Licensing
W. Brian, Director, Engineering
E. Bush, Superintendent Operations
R. Edington, Vice President-Operations
J. Fowler, Manager, Quality Assurance
D. Heath, Supervisor, Health Physics Shift
T. Hildebrandt, Manager, Maintenance
J. Holmes, Manager, Technical Support
R. King, Director, Nuclear Safety Assurance
J. Leavines, Manager, Licensing
J. McGhee, Manager, Operations
D. Mims, General Manager
D. Myers, Senior Specialist, Licensing
P. Page, Supervisor, Radiation Protection
A. Shahkarami, Manager, System Engineering
D. Wells, Superintendent, Radiation Protection
M. Wyatt, Manager, Planning and Scheduling/Outage

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

50-458/0013-01	NCV	Failure to properly install scaffolding (Section 1R04.1)
50-458/0013-02	NCV	Failure to implement corrective actions for technical deficiencies associated with procedures (Section 1R11)
50-458/0013-03	NCV	Four examples of the failure to have adequate procedures or follow procedures (Sections 1R14 and 1R15)
50-458/0013-04	NCV	Failure to properly classify the radioactive waste in two shipments (Section 2PS2)

Closed

50-458/0010	LER	Unplanned isolation of reactor core isolation cooling system (Section 1R22.2)
50-458/0011-04	URI	Review of functional failure criteria for inoperable but available structures, systems, and components (Section 1R12.2)

LIST OF ACRONYMS AND INITIALISMS USED

CFR	Code of Federal Regulations
CR	condition report
inhg	inches of mercury
inwg	inches of water gauge
scfm	standard cubic feet per minute
MAI	maintenance action item
NCV	noncited violation
NRC	U.S. Nuclear Regulatory Commission
PAR	procedure action request
RHR	residual heat removal
SCT	standby cooling tower
USAR	Updated Safety Analysis Report

LIST OF DOCUMENTS REVIEWED

Listing of radioactive waste and material shipments from December 1999 through August 1, 2000.

Shipping Documentation Packages 99-0103, 99-0105, 99-0107, 99-0118, 99-0119, 00-003, 00-051, 00-054, 00-057, 00-058, 00-059, 00-061.

Listing of condition reports from April 1,1999, through August 18, 2000.

Condition Reports 1999-0442, 1999-0453, 1999-0598,1999-1005, 1999-1007, 1999-1010, 1999-1114, 1999-1070,1999-1225, 1999-1245, 1999-1426, 1999-1574, 1999-1667, 1999-1704, 1999-1814, 1999-1826, 1999-1880, 1999-1948, 1999-1725, 1999-1989, 1999-2025, 2000-0216, 2000-0249, 2000-0326, 2000-0496, 2000-0515, 2000-0522, 2000-0540, 2000-0632, 2000-0642, 2000-0656, 2000-0762, 2000-0867, 2000-1016, 2000-1035, 2000-1165, 2000-1218, 2000-1228, 2000-1232.

Radiation Work Permits 99-1000, 99-6014, 99-9011, 00-1502.

10 CFR Part 61 Analysis data packages for 1999.

Radiation Protection Self Assessment Report - Radwaste, August 2, 2000
Radiation Protection Self Assessment Report, August 22, 2000
Radiation Protection Program Assessment/Audit, January 17-21, 2000
Quality Assurance Surveillances 906002, 911001, 002002, 20003006.
1999 Annual Effluent Release Report.
1999 Annual Environmental Operating Report

Station Operating Manual Procedures:
ADM-0095, “Radwaste Processing Control Program,” Revision 0
RBNP-024, “Radiation Protection Plan,” Revision 9
RPP-0005, “Posting of Radiologically Controlled Areas,” Revision 22
RPP-0006, “Radiological Surveys,” Revision 14

RSP-0200, “Radiation Work Permits,” Revision 20
RSP-0212, “Drywell Entry,” Revision 9
RSP-0217, “Access Control,” Revision 12
RWS-0206, “Radwaste Scaling Factors Program,” Revision 8
RWS-0207, “Radwaste Shipping Procedure,” Revision 13
RWS-0304, “Radioactive Waste Handling and Control,” Revision 11
RWS-0306, “Set-Up and Operation of the RDS-1000 Dewatering Unit,” Revision 5
RWS-0310, “Operation of the Nuclear Packaging Model WC-18000 Waste Compactor,” Revision 6A
RWS-0321, “Operation of the Radwaste Shipping Computer Software,” Revision 4
RWS-0337, “Operation of the Battery Powered Remote Controlled Liner Grapple,” Revision 1
RWS-0340, “Operation of the Material Release Facility,” Revision 0

Training Material:
VEN-HPTS-00002.00, “Radioactive Waste Packaging, Transportation, and Disposal Reference Manual,” Revision 1999

VEN-HPTS-00003.00, “RC-102, Use of WMG Programs and Regulatory Interfaces,” Revision 3

ATTACHMENT 2

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, or 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. 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.