



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION IV  
1600 EAST LAMAR BOULEVARD  
ARLINGTON, TEXAS 76011-4511

September 10, 2018

Mr. William F. Maguire, Site Vice President  
Entergy Operations, Inc.  
River Bend Station  
5485 U.S. Highway 61N  
St. Francisville, LA 70775

SUBJECT: RIVER BEND STATION - NRC EXAMINATION REPORT 05000458/2018301

Dear Mr. Maguire:

On August 22, 2018, the U.S. Nuclear Regulatory Commission (NRC) completed an initial operator license examination at River Bend Station. The enclosed report documents the examination results and licensing decisions. The preliminary examination results were discussed on July 27, 2018, with Mr. Steve Vercelli, General Manager, Plant Operations, and other members of your staff. A telephonic exit meeting was conducted on August 22, 2018, with Mr. Vercelli, who was provided the NRC licensing decisions.

The examination included the evaluation of four applicants for reactor operator licenses, eight applicants for instant senior reactor operator licenses, and two applicants for upgrade senior reactor operator licenses. The license examiners determined that all of the fourteen applicants satisfied the requirements of Title 10 of the *Code of Federal Regulations* (CFR) Part 55, and the appropriate licenses have been issued. There were two post-examination comments submitted by your staff. Enclosure 1 contains details of this report and Enclosure 2 summarizes post-examination comment resolution.

Additionally, the NRC reviewed one self-revealed finding involving procedure quality, and one self-revealed finding involving exam security, that were evaluated under the risk significance determination process as having very low safety significance (Green). Because of the very low safety significance and because they were entered into your corrective action program, the NRC is treating these findings as non-cited violations, consistent with Section 2.3.2.a of the NRC Enforcement Policy. If you contest the violations or the significance of the non-cited violations, 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, D.C. 20555-0001, with copies to the Regional Administrator, U.S. Nuclear Regulatory Commission, Region IV, 1600 E. Lamar Blvd., Arlington, TX 76011-4511; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001; and the NRC Senior Resident Inspector at the River Bend Station. In addition, if you disagree with the cross-cutting aspects assigned to the findings in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region IV, and the NRC Senior Resident Inspector at the River Bend Station.

In accordance with 10 CFR 2.390 of the NRC's "Agency Rules of Practice and Procedure," 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 Agencywide Documents Access and Management 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/*

Vincent G. Gaddy, Chief  
Operations Branch  
Division of Reactor Safety

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

Enclosures:

1. Examination Report 05000458/2018301  
w/Attachment: Supplemental Information
2. NRC Post Examination Comment  
Resolution

RIVER BEND STATION - NRC EXAMINATION REPORT 05000458/2018301 – DATED SEPTEMBER 10, 2018

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ADAMS ACCESSION NUMBER: ML18250A287

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**U.S. NUCLEAR REGULATORY COMMISSION  
INSPECTION REPORT**

Docket Number: 05000458

License Number: NPF-47

Report Number: 05000458/2018301

Licensee: Entergy Operations, Inc.

Facility: River Bend Station

Location: Saint Francisville, Louisiana

Inspection Dates: July 23, 2018 to August 22, 2018

Inspectors: T. Farina, Chief Examiner, Senior Operations Engineer  
J. Kirkland, Senior Operations Engineer  
C. Osterholtz, Senior Operations Engineer  
M. Hayes, Operations Engineer  
N. Hernandez, Operations Engineer

Approved By: Vincent G. Gaddy  
Chief, Operations Branch  
Division of Reactor Safety

## SUMMARY

ER 05000458/2018301; 07/23/2018 – 08/22/2018; River Bend Station; Initial Operator Licensing Examination Report.

NRC examiners evaluated the competency of four applicants for reactor operator licenses, eight applicants for instant senior reactor operator licenses, and two applicants for upgrade senior reactor operator licenses at River Bend Station.

The licensee developed the examinations using NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 11. The written examination was administered by the licensee on August 3, 2018. NRC examiners administered the operating tests on July 23-27, 2018.

The examiners determined that all applicants satisfied the requirements of 10 CFR Part 55, and the appropriate licenses have been issued.

### A. NRC-Identified and Self-Revealing Findings

#### **Cornerstone: Mitigating Systems**

The team reviewed a self-revealed Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the failure to provide accurate qualitative procedural guidance to determine Shutdown Cooling Safety Function color state in Modes 4 and 5, using OSP-0037, Rev 36, Shutdown Operations Protection Plan, Attachment 1, Shutdown Cooling Function Color States. Specifically, OSP-0037 Rev 36 defines the term "Flooded Up" as, "Flooded Up condition requires greater than 23 ft in the Reactor Cavity and the Cavity Gate open." OSP-0037 Rev 36, Attachment 1 contains a table with 6 columns that list combinations of decay heat loads (high, medium, and low), and reactor cavity water inventory, which are used to determine Shutdown Cooling risk. Only one of the six columns uses the correctly-defined term, "Flooded Up," for reactor cavity water inventory. Two of the six columns state "Flooded", and three of the columns state "Not FL", neither of which are defined terms in OSP-0037. This creates the potential for an operator to misinterpret the meaning of the column, and select a color code for Shutdown Cooling that represents a lower risk than is actually present. This potential was confirmed by erroneous applicant performance on the July 2018 NRC initial license exam. As an interim corrective action, the station issued a night order clarifying the typographical error, and initiated action to revise the procedure. This issue was entered into the licensee's corrective action program as Condition Report CR-RBS-2018-04414.

The failure to provide accurate qualitative procedural guidance to determine Shutdown Cooling Function Color State is a performance deficiency. The inspectors determined the performance deficiency was more than minor because it adversely affected the Procedure Quality attribute of the Mitigating Systems cornerstone, the objective of which is to ensure the availability, reliability, and capability of systems needed to respond to initiating events to prevent undesired consequences. Specifically, the procedure errors could cause a crew to underestimate Shutdown Cooling risk, with an adverse effect on conservative implementation of defense in depth in the planning, scheduling, and implementation of outage activities. The inspectors assessed the significance of the finding using Inspection Manual Chapter 0609, Appendix G, "Shutdown Operations

Significance Determination Process,” dated May 9, 2014. The team determined that the finding was of very low safety significance (Green) because the finding: (1) was not a deficiency affecting the design and qualification of a mitigating structure, system, or component, and did not result in a loss of operability or functionality; (2) did not represent a loss of system and/or function; (3) did not represent an actual loss of safety function of any train or safety system for longer than its technical specification allowed outage time, or two separate safety systems out-of-service for longer than their technical specification allowed outage time; (4) did not represent an actual loss of function of one or more non-technical specification trains of equipment designated as high safety-significance in accordance with the licensee’s maintenance rule program, with cavity either flooded or not flooded; (5) did not degrade a functional auto-isolation of RHR on low reactor vessel level; (6) did not screen as potentially risk significant due to an external event; (7) did not involve Fire Brigade training and qualification requirements, or brigade staffing; (8) did not involve the response time of the Fire Brigade to a fire; and (9) did not involve fire extinguishers, fire hoses, or fire hose stations. No Cross-Cutting Aspect is assigned, because the procedural errors were introduced in Revision 19, issued September 16, 2009, and are therefore not indicative of current licensee performance. (Section 4OA5)

### **Cornerstone: Mitigating Systems**

The team reviewed a self-revealed Green non-cited violation of 10 CFR Part 55.49, “Integrity of examinations and tests,” for the licensee’s compromise of a simulator JPM during exam administration. Specifically, on June 8, 2018, during a review of the draft exam, the NRC identified that the draft examiner guide for simulator JPM S7 contained exam material for simulator JPM S8. The licensee removed the erroneous exam material from the examiner guide, but failed to evaluate the extent of condition to ensure that the applicant handout did not also contain exam material from JPM S8. On July 26, 2018, while performing JPM S7, an applicant was reviewing his handout and found that the last page was the cue sheet for JPM S8, which was intended to be administered the following day. As an immediate compensatory measure, JPM S8 was administered to all applicants the day of the compromise, to prevent any opportunity for the compromise to spread or for applicants to specifically prepare for the JPM. This issue was entered into the licensee’s corrective action program as Condition Report CR-RBS-2018-04141.

The compromise of initial license exam material to an applicant before the intended date of administration is a performance deficiency. The inspectors determined the performance deficiency was more than minor, and therefore a finding, because it adversely affected the Human Performance attribute of the Mitigating Systems cornerstone, the objective of which is to ensure the availability, reliability, and capability of systems needed to respond to initiating events to prevent undesired consequences. Additionally, if left uncorrected the performance deficiency could have the potential to lead to a more significant safety concern, by causing license decisions to be made based on compromised exams which were not administered in an equitable or consistent manner. The inspectors assessed the significance of the finding using Inspection Manual Chapter 0609, Significance Determination Process, Appendix I, Licensed Operator Requalification Significance Determination Process. The team determined that the finding was of very low safety significance (Green) because the finding was related to initial license exam security (block 10), but did not cause an actual negative effect on the equitable and consistent administration of the initial license exam (block 11), because the exam team took immediate compensatory action to rearrange

the exam schedule and administer the compromised JPM that day, preventing any opportunity for applicants to unduly prepare for the compromised JPM, or for other applicants to learn of it. The finding was related to the cross-cutting aspect of Evaluation in the cross-cutting area of Problem Identification and Resolution because after the NRC identified that draft simulator JPM S7 erroneously contained exam material from simulator JPM S8, the licensee failed to evaluate the extent of condition of this error to ensure that other exam materials were not also affected. [P.2] (Section 40A5)

B. Licensee-Identified Violations

No findings were identified.

## REPORT DETAILS

### 4. OTHER ACTIVITIES (OA)

#### 40A5 Other Activities (Initial Operator License Examination)

##### .1 License Applications

###### a. Scope

NRC examiners reviewed all license applications submitted to ensure each applicant satisfied relevant license eligibility requirements. Examiners also audited two of the license applications in detail to confirm that they accurately reflected the subject applicant's qualifications. This audit focused on the applicant's experience and on-the-job training, including control manipulations that provided significant reactivity changes.

###### b. Findings

1. No findings were identified. However, during the review of draft license applications, the NRC identified that River Bend Station intended to request a Generic Fundamentals Exam (GFE) waiver under NUREG 1021 ES-204 D.1.k.(4), for an applicant who did not satisfy the explicit requirements listed for this waiver. Specifically, the waiver requires, in part, that the applicant be enrolled in a Licensed Operator Requalification program, and pass annual and biennial NRC requalification exams as an RO or SRO. The applicant in question was a Shift Technical Advisor (STA), therefore he did not participate in the annual operating test as an RO or SRO, and therefore did not qualify for the waiver. In response, the licensee administered to the applicant an equivalent GFE prepared by the facility, which the applicant passed, thereby satisfying alternate waiver criteria per ES-204 D.1.k.(3).

Upon receipt of the final license applications, the NRC identified errors in the applications for four individuals. Specifically, the applications for three individuals documented information about facilities where they were previously licensed or docketed in blocks 15, 16, and 17 of NRC Form 398, which are reserved for information about the current facility, River Bend Station. The application for a fourth individual contained erroneous dates for the issuance and termination of a previously-held license at River Bend Station. In response, the licensee corrected and resubmitted the affected license applications. These issues were entered into the licensee's corrective action program as CR-RBS-2018-03946.

##### .2 Examination Development

###### a. Scope

NRC examiners reviewed integrated examination outlines and draft examinations submitted by the licensee against the requirements of NUREG-1021. The NRC examination team conducted an onsite validation of the operating tests.

b. Findings

NRC examiners provided outline, draft examination and post-validation comments to the licensee. The licensee satisfactorily completed comment resolution prior to examination administration.

NRC examiners determined the written examinations and operating tests initially submitted by the licensee were within the range of acceptability expected for a proposed examination.

.3 Operator Knowledge and Performance

a. Scope

On August 3, 2018, the licensee proctored the administration of the written examinations to all fourteen applicants. The licensee staff graded the written examinations, analyzed the results, and presented their analysis and post-examination comments to the NRC on August 13, 2018.

The NRC examination team administered the various portions of the operating tests to all applicants on July 23-27, 2018.

b. Findings

Introduction. The team reviewed a self-revealed Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," for the failure to provide accurate qualitative procedural guidance to determine Shutdown Cooling Safety Function color state in Modes 4 and 5, using OSP-0037, Rev 36, Shutdown Operations Protection Plan, Attachment 1, Shutdown Cooling Function Color States.

Description. OSP-0037 is used, in part, to assign risk color states to various safety functions during Modes 4 and 5, to assist in planning, scheduling, and implementing outage activities in a safe manner. One of these safety functions is Shutdown Cooling. OSP-0037 Rev 36 defines the term "Flooded Up" as, "Flooded Up condition requires greater than 23 ft in the Reactor Cavity and the Cavity Gate open." OSP-0037 Rev 36, Attachment 1 contains a table with six columns that list combinations of decay heat loads (high, medium, and low), and reactor cavity water inventory, which are used to determine Shutdown Cooling risk. Only one of the six columns uses the correctly-defined term, "Flooded Up," for reactor cavity water inventory, however. Two of the six columns state "Flooded", and three of the columns state "Not FL", neither of which are defined terms in OSP-0037. This attachment further contains a note which states, in part, "Flooded-up Condition requires that the cavity gate be open. ..." This note was at one time referenced in the column headings, but was subsequently removed. This creates the potential for an operator to misinterpret the meaning of the column, and select a color code for Shutdown Cooling that represents a lower risk than is actually present. This potential was confirmed by observed erroneous applicant performance on the July 2018 NRC initial license exam. Specifically, it was observed that an operator could misinterpret the erroneous term "Flooded" to mean a condition where the reactor cavity contains greater than 23 ft of inventory, but the cavity gate is closed. Such a misinterpretation would cause a non-conservative determination of Shutdown Cooling

risk by at least one color state under many conditions, and potentially more than one color state. As an interim corrective action, the station issued a night order clarifying the typographical error, and initiated action to revise the procedure. This issue was entered into the licensee's corrective action program as Condition Report CR-RBS-2018-04414.

Analysis. The failure to provide accurate qualitative procedural guidance to determine Shutdown Cooling Function Color State is a performance deficiency. The inspectors determined the performance deficiency was more than minor because it adversely affected the Procedure Quality attribute of the Mitigating Systems cornerstone, the objective of which is to ensure the availability, reliability, and capability of systems needed to respond to initiating events to prevent undesired consequences. Specifically, the procedure errors could cause a crew to underestimate Shutdown Cooling risk, with an adverse effect on conservative implementation of defense in depth in the planning, scheduling, and implementation of outage activities. The inspectors assessed the significance of the finding using Inspection Manual Chapter 0609, Appendix G, "Shutdown Operations Significance Determination Process," dated May 9, 2014. The team determined that the finding was of very low safety significance (Green) because the finding: (1) was not a deficiency affecting the design and qualification of a mitigating structure, system, or component, and did not result in a loss of operability or functionality; (2) did not represent a loss of system and/or function; (3) did not represent an actual loss of safety function of any train or safety system for longer than its technical specification allowed outage time, or two separate safety systems out-of-service for longer than their technical specification allowed outage time; (4) did not represent an actual loss of function of one or more non-technical specification trains of equipment designated as high safety-significance in accordance with the licensee's maintenance rule program, with cavity either flooded or not flooded; (5) did not degrade a functional auto-isolation of RHR on low reactor vessel level; (6) did not screen as potentially risk significant due to an external event; (7) did not involve Fire Brigade training and qualification requirements, or brigade staffing; (8) did not involve the response time of the Fire Brigade to a fire; and (9) did not involve fire extinguishers, fire hoses, or fire hose stations. No Cross-Cutting Aspect is assigned, because the procedural errors were introduced in Revision 19, issued September 16, 2009, and are therefore not indicative of current licensee performance.

Enforcement. Title 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," states, in part, "Activities affecting quality shall be prescribed by documented instructions, procedures, or drawing, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings. Instructions, procedures, or drawings shall include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished."

Contrary to the above, on September 16, 2009, Revision 19 was issued to procedure OSP-0037, Shutdown Operations Protection Plan, which contained errors in Attachment 1, Shutdown Cooling Function Color States. Specifically, in five of six columns that describe various combinations of decay heat loads and reactor cavity water inventory, non-defined terms for reactor cavity water inventory are used. Additionally, a reference note which clarified the meanings of these terms was removed from the relevant columns. This created the potential for an operator to misinterpret the meanings of the columns, and select a non-conservative value for shutdown cooling function color state.

This potential was observed by the NRC by erroneous performance on the NRC initial license exam administered on July 24, 2018. To correct this issue, the licensee is working through its procedure change process and corrective action program via the assigned condition report.

Because this finding is of very low safety significance and has been entered into the licensee's corrective action program as Condition Report CR-RBS-2018-04414, this violation is being treated as a non-cited violation, consistent with Section 2.3.2.a of the NRC Enforcement Policy. (NCV 05000458/2018301-01, "Inadequate Procedure for Shutdown Operations Protection Plan.")

c. Other Observations

All applicants passed the written examination and all parts of the operating test. The final written examinations and post examination analysis and comments may be accessed in the ADAMS system under the accession numbers noted in the attachment.

The examination team noted four generic weaknesses associated with applicant performance on the dynamic scenario section of the operating tests. The weaknesses are as follows:

- (1) Inability to mitigate a failure of the controlling RPV Level Instrument with the Feedwater Master Flow Controller in Automatic mode of operation at high power. Three of four crews were unable to adequately control feedwater flow manually when the controlling RPV level instrument failed high. Each of these three crews caused either a manual or automatic reactor SCRAM on low RPV level, which should not have been necessary had the control board operators promptly taken manual control of the Master Flow Controller, increased flow to stabilize RPV level, and swapped to an alternate RPV level instrument.
- (2) Inability to mitigate a high-power ATWS following a feedwater level transient. Following the feedwater level transient described in (1) above, an ATWS occurred due to a failure of the SCRAM Pilot Valve solenoids to de-energize. None of the four crews responded to this combination of events in the same way:
  - (a) One crew never identified that the SCRAM Pilot Valve solenoids failed to de-energize, and mitigated the event by dispatching operators to manually vent the SCRAM air header, which takes longer to perform than manually de-energizing the solenoids in the control room.
  - (b) A second crew took an excessively long time to manually de-energize SCRAM Pilot Valve solenoids, requiring an emergency depressurization due to exceeding the Suppression Pool Heat Capacity Temperature Limit (SRVs were dumping to the Suppression Pool for an extended period).
  - (c) A third crew overfed the RPV following the reactor SCRAM, causing a Level 8 trip of all feedwater sources on high RPV Level. With a high-power ATWS present, RPV level rapidly lowered, requiring an emergency depressurization on low RPV level.

- (d) A fourth crew responded to the high-power ATWS as expected.
- (3) Inability to correctly evaluate Technical Specifications for the condition of RCIC Inoperable with a subsequent loss of Division III (HPCS Inoperable). Two of Four SRO applicants incorrectly entered LCO 3.0.3 on this malfunction, which required action within 1 hour to be in Mode 2 in 7 hours, and be in Mode 3 in 13 hours. The correct Technical Specification had a limiting required action to be in Mode 3 in 12 hours.
- (4) When a lockout of Division III (HPCS) Bus occurred, the Division III DG started and ran unloaded, with cooling provided by Normal Service Water. The station expectation as proposed in the exam submittal was that the crew would secure the DG due to running unloaded without the ability to tie it to a bus. None of the four crews secured the DG however. It was later determined that no clear guidance existed as to how long a DG should be allowed to run unloaded in this condition.

These issues were entered into the licensee's corrective action program as CR-RBS-2018-04533. Copies of all individual examination reports were sent to the facility Training Manager for evaluation and determination of appropriate remedial training.

#### .4 Simulation Facility Performance

##### a. Scope

The NRC examiners observed simulator performance with regard to plant fidelity during examination validation and administration.

##### b. Findings

No findings were identified. However, during administration of the exam, it was identified that improvements could be made to the operation of some simulator support software. Specifically, the simulator uses a Training Action Monitor (TAM) log to track all physical manipulations made on the simulator during the course of a scenario. However, this log uses redundant nomenclature to log diverse manipulations, such that it diminishes the ability of evaluators to reconstruct and analyze trainee actions post-scenario. For example, whether an applicant places the Master Flow Controller in Manual or Auto, Open or Close, the TAM log simply records "680-3B FW REG VALVES MASTER FLOW CONTROLLER – Monitor." While this is not an issue of simulator fidelity, it does reduce the effectiveness of the TAM log as an evaluation tool. This issue was entered into the licensee's corrective action program as CR-RBS-2018-04167.

#### .5 Examination Security

##### a. Scope

The NRC examiners reviewed examination security for examination development during both the onsite preparation week and examination administration week for compliance with 10 CFR 55.49 and NUREG-1021. Plans for simulator security and applicant control were reviewed and discussed with licensee personnel.

b. Findings

Introduction. The team reviewed a self-revealed Green non-cited violation of 10 CFR Part 55.49, "Integrity of examinations and tests," for the licensee's compromise of simulator JPM S7 during exam administration.

Description. On June 8, 2018, during a review of the draft exam, the NRC identified that the draft examiner guide for simulator JPM S7 contained exam material for simulator JPM S8. The licensee removed the erroneous exam material from the examiner guide, but failed to evaluate the extent of condition to ensure that the applicant handout did not also contain exam material from JPM S8. On July 26, 2018, while performing JPM S7, an applicant was reviewing his handout and found that the last page was the cue sheet for JPM S8, which was intended to be administered to that applicant the following day. As an immediate compensatory measure, JPM S8 was administered to all applicants the day of the compromise, to prevent any opportunity for the compromise to spread or for applicants to specifically prepare for the JPM. This issue was entered into the licensee's corrective action program as Condition Report CR-RBS-2018-04141.

Analysis. The compromise of initial license exam material to an applicant before the intended date of administration is a performance deficiency. The inspectors determined the performance deficiency was more than minor, and therefore a finding, because it adversely affected the Human Performance attribute of the Mitigating Systems cornerstone, the objective of which is to ensure the availability, reliability, and capability of systems needed to respond to initiating events to prevent undesired consequences. Additionally, if left uncorrected the performance deficiency could have the potential to lead to a more significant safety concern, by causing license decisions to be made based on compromised exams which were not administered in an equitable or consistent manner. The inspectors assessed the significance of the finding using Inspection Manual Chapter 0609, Significance Determination Process, Appendix I, Licensed Operator Requalification Significance Determination Process. The team determined that the finding was of very low safety significance (Green) because the finding was related to initial license exam security (block 10), but did not cause an actual negative effect on the equitable and consistent administration of the initial license exam (block 11), because the exam team took immediate compensatory action to rearrange the exam schedule and administer the compromised JPM that day, without any opportunity for applicants to unduly prepare for the compromised JPM, or for other applicants to learn of it. The finding was related to the cross-cutting aspect of Evaluation in the cross-cutting area of Problem Identification and Resolution because after the NRC identified that draft simulator JPM S7 erroneously contained exam material from simulator JPM S8, the licensee failed to evaluate the extent of condition of this error to ensure that other exam materials were not also affected. [P.2]

Enforcement. Title 10 CFR Part 55, Section 49, "Integrity of examinations and tests," states, "Applicants, licensees, and facility licensees shall not engage in any activity that compromises the integrity of any application, test, or examination required by this part. The integrity of a test or examination is considered compromised if any activity, regardless of intent, affected, or, but for detection, would have affected the equitable and consistent administration of the test or examination. This includes activities related to the preparation and certification of license applications and all activities related to the

preparation, administration, and grading of the tests and examinations required by this part.

Contrary to the above, on July 26, 2018, while performing simulator JPM S7, an applicant was reviewing his handout and found that the last page was the cue sheet for simulator JPM S8, which was intended to be administered to that applicant the following day. The NRC had previously identified that the draft examiner guide for JPM S7 contained material for JPM S8; the licensee removed the erroneous material from the examiner guide, but failed to evaluate the extent of condition to ensure that the applicant handout did not also contain exam material from JPM S8. As an immediate compensatory measure, JPM S8 was administered to all applicants the day of the compromise, to prevent any opportunity for the compromise to spread or for applicants to specifically prepare for the JPM.

Because this finding is of very low safety significance and has been entered into the licensee's corrective action program as Condition Report CR-RBS-2018-04141, this violation is being treated as a non-cited violation, consistent with Section 2.3.2.a of the NRC Enforcement Policy. (NCV 05000458/2018301-02, "Exam Security Compromise While Administering Simulator JPM")

#### **40A6 Meetings, Including Exit**

##### Exit Meeting Summary

The chief examiner presented the preliminary examination results to Mr. Steve Vercelli, General Manager, Plant Operations, and other members of the staff on July 27, 2018. A telephonic exit was conducted on August 22, 2018, between Mr. Thomas Farina, Chief Examiner, and Mr. Vercelli.

The licensee did not identify any information or materials used during the examination as proprietary.

## **SUPPLEMENTAL INFORMATION**

### **KEY POINTS OF CONTACT**

#### **Licensee Personnel**

R. Northrup, Supervisor, Operations Training  
S. Durbin, Operations Training Superintendent  
G. Kimich, Lead Exam Developer

#### **NRC Personnel**

J. Sowa, Senior Resident Inspector  
T. Farina, Chief Examiner

### **ADAMS DOCUMENTS REFERENCED**

Accession No. ML18239A243 - FINAL WRITTEN EXAMS  
Accession No. ML18239A244 - FINAL OPERATING TEST  
Accession No. ML18239A245 - POST EXAM ANALYSIS-COMMENTS

## NRC Resolution to the River Bend Station Post Examination Comments

A complete text of the licensee's post examination analysis and comments, as well as the NRC's detailed evaluation, can be found in ADAMS under Accession Number ML18239A245.

### **SRO ADMINISTRATIVE JPM A6**

**COMMENT:** JPM A6 required applicants to determine whether removal of an LPRM dry tube could be authorized under the given initial conditions, and to provide a justification. One of the initial conditions states that, "Containment is open." This condition does not specifically state what portion of containment is "open." The key is written such that the applicant is expected to identify that Technical Specification 3.6.1.10, Primary Containment – Shutdown, requires Primary Containment to be OPERABLE during operations with a potential for draining the reactor vessel (OPDRVs). Based on this requirement, the LPRM dry tube removal cannot be authorized, because it is an OPDRV.

Based on the given initial condition that "containment is open," applicants can also apply Technical Specification 3.6.1.2, Primary Containment Airlocks. Technical Specification 3.6.1.2 requires two primary containment air locks to be OPERABLE during an OPDRV. If the primary containment airlocks were "open," (which often occurs during outages) this Technical Specification would apply and prevent the LPRM dry tube removal as well.

River Bend recommends adding Technical Specification 3.6.1.2, Primary Containment Airlocks, as an acceptable justification for not authorizing the LPRM dry tube removal.

**NRC RESOLUTION:** The NRC disagrees with the licensee's recommendation to accept Technical Specification 3.6.1.2 as a justification for not authorizing LPRM dry tube removal. In order for Technical Specification 3.6.1.2 to be applicable, the applicant must make an assumption about the condition of the primary containment air locks that is beyond that which is provided in the initial conditions. NUREG 1021, Appendix E instructs applicants that, "When answering a question, do not make assumptions regarding conditions that are not specified in the question unless they occur as a consequence of other conditions that are stated in the question." Although included in the section specific to the Written Exam, this guidance can reasonably be applied to the performance of an Administrative JPM as well. The given initial conditions only contain sufficient detail to determine that Technical Specification 3.6.1.10 is the justification for not authorizing LPRM dry tube removal.

Based on the above, no change to JPM A6 is approved. However, a comment will be added to the Final JPM A6 stored in ADAMS, "Per RBS post-exam comment, future revisions of this JPM should specify the condition of primary containment air locks, for increased clarity."

### **SRO ADMINISTRATIVE JPM A7**

**COMMENT:** JPM A7 required applicants to determine shutdown risk levels for various safety functions, to include Shutdown Cooling Safety Function and Overall Plant Risk. The applicants were expected to determine that both Shutdown Cooling Safety Function and Overall Plant Risk color states are YELLOW.

During the administration of JPM A7, there was a procedure deficiency noted with OSP-0037, Shutdown Operations Protection Plan (SOPP), Attachment 1, Shutdown Cooling Function Color States. This attachment has several columns to be used to determine the color states.

There is a note 5 which states, "Flooded-up Condition requires that the cavity gate be open. This may be Yellow if calculations show that SFC alone is capable of removing all decay heat. Otherwise SFC must be used in conjunction with ADHR."

The JPM was written to test the condition of this note. The initial conditions state the cavity gate is CLOSED. Based on the initial conditions, the "Med DH/Not FL" column should have been selected and the color code corresponding to RHR A & B availability was YELLOW.

There is a typo in the procedure that should apply note 5 to columns 5-7 only differing by decay heat level, however only column 5 states "Flooded Up." Columns 6-7 state "Flooded." Based on this typographical error the applicant could select column 6 "Med DH/Flooded" and select GREEN as the corresponding color for RHR A & B. Without the definition of "Flooded" or "Flooded Up" the applicant could assume less inventory than "Hi DH / Flooded Up" Green condition due to the cavity gate being closed, but potentially offset by less decay heat (Med DH / Flooded), maintaining Green condition.

Based on this typographical error, the station believes that the JPM should be modified to accept either YELLOW or GREEN as correct answers for Shutdown Cooling Function Color State and Overall Risk Color State.

**NRC RESOLUTION:** In spite of the typographical errors present in procedure OSP-0037, nine of the ten SRO applicants, as well as the pre-exam validators, chose "YELLOW" Shutdown Cooling and Overall Plant Risk, as expected. Because of this, it is the exam team's opinion that JPM A7 is a valid tool for evaluating applicant performance, and should be retained on the exam.

One SRO applicant, however, recognized that there was a deviation between the defined condition of "Flooded Up," and the as-written conditions in five of the columns of OSP-0037 Attachment 1, which read either "Flooded" or "Not FL", and were not defined. The applicant exercised due diligence by asking the examiner to clarify if the procedure read as intended. The exam team was not able to identify that the approved station procedure was in error until after administration of JPM A7 was complete, and therefore accurate clarification was unable to be provided to the applicant during performance of the JPM. The applicant believed that the procedure read as intended, and that "Flooded" was a separate condition from "Flooded Up", representing the condition of reactor cavity level greater than 23 feet, with the cavity gate closed. The applicant therefore chose GREEN for Shutdown Cooling and Overall Plant Risk.

Because the applicant performed the JPM with the information available to him at the time, and because the applicant asked a clarifying question which was unable to be answered correctly at the time and which bore direct relevance to his choice of answer, it was determined that this applicant should not be penalized for his answer of "GREEN" for Shutdown Cooling and Overall Plant Risk. Since there can only be one correct answer for a given set of plant conditions, the NRC deleted JPM A7 from the exam for this SRO applicant only.