

July 18, 1994

U.S. Nuclear Regulatory Commission  
Document Control Desk  
Mail Stop P1-37  
Washington D.C. 20555

Subject: Reply to a Notice of Violation IR 94-09  
Reference: River Bend Station - Unit 1 / Docket 50-458/94-09  
RBG-40581, "Results of Investigation of CR 94-0424"  
File Nos.: G9.5, G15.4.1

RBG-40727

Gentlemen:

Pursuant to 10CFR2.201, please find attached Entergy Operations, Inc's (EOI) response to three notices of violation described in NRC Inspection Report (IR) 94-09, dated June 17, 1994. The inspection was performed by Messrs. R. K. Brewer and M. Cillis during April 25-29, 1994.

EOI recognizes the importance of radiological work controls and understands the significance of failing to post an area immediately upon identifying radiological conditions. As identified in the referenced investigation results, the issues identified in the inspection report had been identified by station personnel and corrective actions were underway prior to the inspection. In your inspection report, you indicated that we have made improvements in our radiation protection program. We expect further progress in this area as we proceed with our long term improvement program.

In January 1994, during a routine inspection by your staff, we presented to you our Radiation Protection Improvement Plan which was incorporated into our Long Term Performance Improvement Plan (LTPIP Chapter 21). In addition to initiatives to improve our Radiation Protection Program, the LTPIP provides initiatives to improve human performance. These initiatives include guidelines to provide feedback to employees on the lessons learned from significant human performance events at River

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Bend Station, other Entergy sites, and throughout the industry. The issues described in Inspection Report 94-09 were discussed with Radiation Protection personnel to ensure that they are aware of the missed opportunities that resulted in this event.

Prior to this event, to emphasize the importance of improvement in the area of procedural compliance, work rules, and responsibilities, a meeting was held between senior management and supervisors to discuss our improvement initiatives. The meeting included a review of the current results of the LTPIP initiatives and a discussion to determine what can be done to improve our effectiveness in these areas. The Vice President - Operations re-emphasized expectations for management accountability and personal involvement with station personnel. For procedure, work rules, and responsibility issues, supervisors will conduct a full investigation, determine root cause and develop appropriate corrective actions. For significant issues, the supervisor and responsible individual will meet with the Vice President - Operations or the General Manager - Plant Operations to review the issue. These reviews will provide consistent messages and corrective actions for each event or issue.

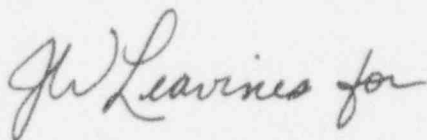
In addition, the inspection report raised concerns about the industrial safety hazard related to the annulus steam tunnel (AST) plug being open without a safety barricade. At the time of the inspection, the investigation of the incident was underway. The investigation ultimately concluded that, after the plug was removed, the AST was either attended or properly barricaded to prevent personnel injury. At no time was the open hole unattended or without a barricade.

In summary, River Bend Station management shares your concerns about these issues and has taken immediate and comprehensive corrective actions for their resolution. In addition, as described above, we have implemented long term corrective actions that will solve the underlying causes and provide permanent improvement for the River Bend Station Radiation Protection Program.

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Should you have any questions, please contact Mr. R.M. McAdams at (504) 336-6224.

Sincerely,

A handwritten signature in cursive script, appearing to read "J. Fisicaro for".

James J. Fisicaro  
Director - Nuclear Safety

RMM  
enclosures

cc: U.S. NRC Regional Administrator  
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## ATTACHMENT A

### REPLY TO NOTICE OF VIOLATION IR 458/94-09-01

#### REFERENCES

Notice of Violation - Letter from S. B. Collins to J. R. McGaha dated June 17, 1994.

Results of Investigation of CR 94-0424 - M. B. Sellman to L. J. Callan dated May 13, 1994.

#### VIOLATION

"Technical Specification 6.12.1 requires, in part, that in lieu of the "control device" or "alarm signal" required by paragraph 20.203(c)(2) [20.1601(a)] of 10 CFR Part 20, each high radiation area in which the intensity of radiation is greater than 100 mrem/hr but less than 1000 mrem/hr shall be barricaded and conspicuously posted as a high radiation area, and entrance thereto shall be controlled by requiring issuance of a Radiation Work Permit (RWP)."

"Contrary to the above, on April 18, 1994, the licensee identified an accessible area in the annulus steam tunnel (AST) with dose rates in excess of 100 mrem/hr which was unposted."

#### REASON FOR THE VIOLATION

Entergy Operations believes that the root cause of the event was poor judgment by a senior contract radiation protection (RP) technician responsible for the initial radiological survey in that he failed to immediately post either the annulus steam tunnel (AST) entrance or the local high dose rate area upon completion of a survey.

As described in the referenced investigation, at approximately 1500 on the afternoon of April 18, 1994 a ladder was installed providing access into the AST. A senior contract RP technician (assisted by a junior RP technician) then surveyed the area to determine radiological conditions to support local leak rate testing (LLRT) which was scheduled to be performed in the area. The survey was completed at approximately 1645 and indicated that an area located in the vicinity of the reactor water clean up (RWCU) guard pipe met the requirements to be posted as a high radiation area (HRA). Other areas in the AST indicated background conditions less than 10 mrem/hr. The technicians left the area without posting.

Interviews with the senior contract and junior RP technicians indicated that they were aware that the area around the RWCU guard pipe met the requirements to be posted as an HRA. However, it was the end of the day shift and the senior contract RP technician assumed that the area would be locked and controlled by security until the oncoming RP night shift could post the area.

The survey results were documented by the senior contract RP technician on a radiological "one-liner" (Survey S-BP-18-APR-94) and placed on a clipboard for special surveys in the RP

office. The survey information and the ladder installation were not directly communicated to the day shift lead RP technician. It is believed that had the ladder installation providing access to the area been adequately communicated to the lead RP technician, the area would have been immediately posted. However, as a result of poor communication and failure of the senior contract RP technician to post the area, the AST remained unposted from the time a ladder was installed until it was posted as a locked HRA by the RP night shift at approximately 2230, a period of about 7.5 hours.

In summary, the senior contract RP technician was aware of the posting requirements at River Bend Station and was aware that the dose rates in the area of the RWCU guard pipe met the requirements to be posted as an HRA. However, the technician failed to immediately post the area as required by station procedures and did not adequately communicate survey information during shift turnover.

#### CORRECTIVE STEPS THAT HAVE BEEN TAKEN AND THE RESULTS ACHIEVED

Upon identification that the LLRT crew had been working in the area, work was immediately halted and a detailed survey was performed. The survey indicated the highest contact reading was 350 mrem/hr at the RWCU guard pipe. The highest one-foot reading was 100 mrem/hr on the same line. Based on this survey, the AST entrance was posted as an HRA in accordance with Technical Specification 6.11 and the station RP posting standard. A review of personnel dosimetry confirmed that no individual received a higher than expected dose.

The technicians involved with the event were counseled on the significance of the event and what actions could have prevented the occurrence. Disciplinary action was also administered to these individuals. In addition, RP Supervision held group meetings to discuss this event with RP technicians. This discussion included review 1) of the missed communication opportunities, 2) the RP department's responsibilities regarding the safety of plant personnel, 3) the missed opportunities involved in the planning and coordination of the job, and 4) the importance of recognizing when immediate actions are required by RP personnel.

A lead RP technician check sheet was developed establishing a documented shift turnover review. This check sheet adds assurance that turnover communications are clear concerning the status of ongoing jobs, surveys and postings. The check sheet also includes a review of special surveys. This turnover review establishes a direct communication path allowing the lead technicians the opportunity to communicate and resolve active issues.

A health physics assessment of the River Bend Station radiation protection program was performed by representatives from other Entergy nuclear sites. This assessment focused on the aspects of the RP program as it relates to the issues discussed in IR 94-09. The assessment results agreed with the site investigation results in that the incident was not a result of procedural or programmatic inadequacies but was due to personnel errors in implementing the established requirements. The assessment concluded that the senior contract RP technician who conducted the initial AST survey failed to immediately establish a posted HRA as

required by station RP procedure RPP-0005 "Posting of Radiological Controlled Areas," 10CFR20 and Technical Specification 6.11.

#### CORRECTIVE STEPS THAT WILL BE TAKEN TO AVOID FURTHER VIOLATIONS

An evaluation is being performed to improve the process for retrieval of historical survey data. This evaluation will include a review of industry and Entergy systems currently in use. The goal of this evaluation is to establish a system that will provide quick access to historical survey information to be used prior to posting. This will improve the RP technicians' ability to obtain historical data for specific areas, such as the AST, to determine potential dose rates in an area and implement the necessary precautionary measures. This process enhancement is scheduled to be completed December 31, 1994.

RP job guides will be developed to provide generic guidelines for repetitive tasks (e.g., valve and pump maintenance). The guides will include information on the types of potential radiological hazards associated with different tasks, methods to identify and mitigate these hazards, and methods to disposition and dispose of radioactive waste. These guides, along with historical survey data, can be used to develop an accurate plan during work preparation and posting. The initial group of job guides will be completed by December 31, 1994. Others will be added as needed.

RP management is evaluating potential performance improvement areas identified during the independent assessment described above. Where our evaluation indicates that one of these recommendations will improve the RP program, the item will be incorporated into the RP improvement plan.

#### DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

Full compliance was achieved on April 18, 1994 at approximately 2230 when the area was posted as a locked HRA. A subsequent detailed survey indicated that the area met the requirements to be posted an HRA. The area posting was changed to an HRA in accordance with Technical Specification 6.11 and the RP posting standard RPP-0005, "Posting of Radiological Controlled Areas." In addition to the specific corrective actions mentioned above, our evolving Long Term Performance Improvement Plan initiatives are expected to improve performance in the areas of radiation protection, procedural compliance and human performance.



## ATTACHMENT B

### REPLY TO NOTICE OF VIOLATION IR 458/94-09-02

#### REFERENCE

Notice of Violation - Letter from S. B. Collins to J. R. McGaha dated June 17, 1994.

Results of Investigation of CR 94-0424 - M. B. Sellman to L. J. Callan dated May 13, 1994.

#### VIOLATION

"Technical Specification 6.12.1 requires, in part, that in lieu of the "control device" or "alarm signal" required by paragraph 20.203(c)(2) [20.1601(a)] of 10 CFR Part 20, each high radiation area in which the intensity of radiation is greater than 100 mrem/hr but less than 1000 mrem/hr shall be barricaded and conspicuously posted as a high radiation area, and entrance thereto shall be controlled by requiring issuance of a RWP. Any individual or group of individuals permitted to enter such areas shall be provided with or accompanied by one or more of the following:"

1. "A radiation monitoring device which continuously indicates the radiation dose rate in the area."
2. "A radiation monitoring device which continuously integrates the radiation dose rate in the area and alarms when a preset integrated dose is received. Entry into such areas with this monitoring device may be made after the dose rate levels in the area have been established and personnel have been made knowledgeable of them."
3. "An individual qualified in radiation protection procedures, with a radiation dose rate monitoring device, who is responsible for providing control over activities within the area and who shall perform periodic radiation surveillance at the frequency specified in the RWP by the health physicist."

"Contrary to the above, on April 26, 1994, the inspectors identified that two separate crews of local leak rate test (LLRT) workers entered a high radiation area on April 18, 1994, without alarming dosimeters or positive control by a qualified radiation protection technician."

#### REASON FOR THE VIOLATION

A local leak rate test (LLRT) crew was authorized entry into an area that was intended (but not required) to be posted as an HRA without alarming dosimetry or positive control by a qualified RP technician. The primary cause of this event was the initial failure by the senior contract RP technician to properly post either the local high dose rate area or the entrance to the AST and failure to adequately communicate job status information during shift turnover. As a result, the crew was unaware of RPs intention to post the area as an HRA. A contributing

factor was complacency and a lack of a questioning attitude by the lead RP technician who authorized entry into the area.

As described in the referenced investigation, after a ladder was installed providing access into the AST a senior contract RP technician performed a survey indicating that a corner of the room, distant from the location where the LLRT workers were to perform their test, met the requirements to be posted as an HRA. However, it was the end of the shift and the technician incorrectly assumed that the area would be locked and controlled by security until the next shift could post the area. The technician failed to post either the local high dose rate area or the entrance into the AST. The entrance was intended to be posted for conservatism.

Immediately upon leaving the AST, the senior contract RP technician verbally briefed the LLRT crew who were in the area performing confined space entry pre-requisites. The briefing included the general dose rates in the area and the higher dose rates in the vicinity of the reactor water clean up (RWCU) line. The crew was also informed that their work area was not in the vicinity of the local high dose area and they should not enter the area around the RWCU guard pipe. The technician informed the LLRT crew to check in with the lead day shift RP technician to obtain concurrence prior to beginning work in the AST. The briefing did not indicate that the area in the vicinity of the RWCU piping was an HRA. In addition, the technician did not directly communicate the status of access to the area or that the area had not been posted.

In accordance with the technician's instructions, the LLRT crew reported to the day shift lead RP technician to obtain concurrence to start work. The LLRT lead told the lead RP technician the contact and general area dose rates around the RWCU piping and their work area conditions they had been briefed on by the senior contract RP technician. The lead RP technician told the crew that since the survey was completed he could authorize entry to the work area.

The LLRT crew obtained proper work approval and reported back to the access control point to check status of the AST prior to their entry. The lead RP technician was in the vicinity of the access point and indicated that he knew the status and would brief the workers. During this briefing he provided the survey results based on the information that the LLRT lead had provided to him earlier. The technician also directed the day shift crew to brief the night shift crew on the conditions in the AST. The workers then accessed on RWP 94-6119-17 to perform the LLRT.

Based on subsequent interviews with LLRT crew members that worked in the area, had their work area been identified as an HRA during the briefing or posted as an HRA, the crew would have followed RWP requirements and requested adequate dosimetry. The RWP provided entry requirements for both radiation areas and HRAs. The crew assumed they were entering a radiation area based on the briefing by the senior contract RP technician which did not require alarming dosimetry as required by Technical Specifications or the RWP. In addition, if the AST entrance had been posted, the posting would have specified the requirement for special dosimetry.



The lead RP technician was aware of the requirements for entry into a radiologically controlled area. However, the technician based his briefing and entry authorization on information obtained from the LLRT lead. He did not review radiological survey data or communicate with the senior contract RP technician who performed the survey as required by access standards and requirements. The cause of this event was complacency and a lack of a questioning attitude by the lead RP technician.

#### CORRECTIVE STEPS THAT HAVE BEEN TAKEN AND THE RESULTS ACHIEVED

The corrective actions implemented as resolution to violation 458/94-09-01 address the issues identified in this violation. These corrective actions are described in Attachment A.

As described in Attachment A, the lead and senior contract RP technicians were counseled on the significance of the issues and what actions could have prevented the occurrence. Disciplinary action was also administered to these individuals. In addition, a check sheet was developed establishing a documented shift turnover review. This review provides a direct path of communication and establishes the requirement for the lead RP technicians to communicate and resolve active issues during turnover.

#### CORRECTIVE STEPS THAT WILL BE TAKEN TO AVOID FURTHER VIOLATIONS

The long term corrective actions developed to address violation 458/94-09-01 address the issues identified in this violation. These corrective actions are described in Attachment A.

#### DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

Full compliance was achieved on April 18, 1994 at approximately 2230 when the area was posted as a LOCKED HRA. Upon discovery that the area had not been adequately posted, work in the area was immediately halted until a detailed survey could be performed. The subsequent survey indicated that the area met the requirements of an HRA and the posting was changed in accordance with Technical Specification 6.11 and the RP posting standard RPP-0005, "Posting of Radiological Controlled Areas". Prior to re-entry, the LLRT workers were adequately briefed on the radiological conditions in the area and provided proper dosimetry in accordance with Technical Specification 6.12.1, RBNP-024 "Radiation Protection Plan," and RSP-0217 "Access Control."

## ATTACHMENT C

### REPLY TO NOTICE OF VIOLATION IR 458/94-09-03

#### REFERENCE

Notice of Violation - Letter from S. B. Collins to J. R. McGaha dated June 17, 1994.

Results of Investigation of CR 94-0424 - M. B. Sellman to L. J. Callan dated May 13, 1994.

#### VIOLATION

"Technical Specification 6.8.1.a requires, in part, that written procedures be established, implemented, and maintained covering the applicable procedures recommended in Appendix A of Regulatory Guide 1.33, Revision 2, February 1978. Regulatory Guide 1.33 states, in part, that RWPs be covered by written procedures."

"Section 4.9 of Licensee Procedure RBNP-024, Revision 4, 'Radiation Protection Plan,' states, in part, that radiation workers shall adhere to RWP requirements knowing that repeated or willful violation is cause for discipline up to and including termination."

"RWP 94-6119-17 states, in part, that all workers are to make themselves aware of current radiological conditions by: reviewing survey data, observing local postings, or by direct communication with radiation protection."

"Contrary to the above, on April 26, 1994, the inspectors identified that a crew of LLRT workers self accessed into the radiological control area and began work in the AST on April 18, 1994, without reviewing applicable survey data, observing local postings, or directly communicating with radiation protection regarding the radiological conditions in the AST."

#### REASON FOR THE VIOLATION

Entergy Operations admits the failure to properly post a high radiation area (HRA) in accordance with Technical Specification 6.11 and the station radiation protection (RP) posting standard. The local leak rate test (LLRT) crew inappropriately entered a radiation area as a result of a breakdown in the RP entry process. This process breakdown was a direct result of the failure by a senior contract RP technician to adequately implement station procedures and RP practices. The individual failed to adequately post either the AST or the local high dose rate area and failed to adequately communicate job status during shift turnover. The details of those events are described in the discussion for violations 458/94-09-01 and -02 (Attachments A and B respectively).

As described in the referenced investigation, an LLRT crew was briefed by a senior contract RP technician on the radiological conditions in the AST where they were to perform their work. The contract senior RP technician also requested that the crew check in at the access

control point prior to entering the area to work. In accordance with these instructions, the LLRT crew reported to the day shift lead RP technician to obtain concurrence to start work. The LLRT lead told the lead RP technician the contact and general area dose rates around the RWCU piping and their work area conditions that they had been briefed on by the senior contract RP technician. The lead RP technician told the LLRT lead that since the survey was complete he could authorize entry into the work area.

The LLRT crew obtained proper work approval from the work management center and reported back to the access control point to check status of the AST prior to their entry. The lead RP technician was in the vicinity of the access point and indicated that he knew the status and would brief the workers. However, this information was based on information the LLRT crew had provided to him earlier. Due to the inadequate turnover communications, the lead RP technician assumed that the workers were entering a radiation area and authorized their access. The technician also directed the day shift crew to brief the night shift crew on the conditions in the AST. The workers then accessed on RWP 94-6119-17 to perform the LLRT.

Based on interviews with LLRT crew members, had the area been properly posted or the crew properly briefed that the area was intended to be posted an HRA, the workers would not have entered until the entry requirements were met as required by the RWP. In addition, based on interviews with RP technicians, if an adequate turnover of job status had taken place, the LLRT night shift would not have allowed access to the area until it was properly posted in accordance with RP procedures.

The cause of this event was the failure of an individual to post an HRA either at the AST entrance or at the local high dose rate area and inadequate shift turnover communications. The result of this breakdown was the authorization of the LLRT crew to enter what was incorrectly assumed to be a radiation area. Specific details of the events preceding LLRT crew entry into the AST are discussed in (Attachments A and B).

#### CORRECTIVE STEPS THAT HAVE BEEN TAKEN AND THE RESULTS ACHIEVED

The immediate corrective actions taken in response to the issues discussed in violation 458/94-09-01 address the issues identified in the above discussion. These corrective actions are described in Attachment A.

#### CORRECTIVE STEPS THAT WILL BE TAKEN TO AVOID FURTHER VIOLATIONS

The long term corrective actions developed to address violation 458/94-09-01 address the issues identified in the above discussion. These corrective actions are described in Attachment A.

#### DATE WHEN FULL COMPLIANCE WILL BE ACHIEVED

Full compliance was achieved on April 18, 1994 at approximately 2230 when the AST entrance was posted as a locked HRA. Upon discovery that the area had not been adequately posted, work in the area was immediately halted until a detailed survey could be performed. The subsequent survey indicated that the corner of the AST met the requirements of an HRA. The AST entrance posting was then changed to an HRA in accordance with Technical Specification 6.11 and the RP posting standard RPP-0005, "Posting of Radiological Controlled Areas". Prior to re-entry, the LLRT workers were adequately briefed on the radiological conditions in the area in accordance with RBNP-024 "Radiation Protection Plan," and RSP-0217, "Access Control".