January 18, 2006

EA-04-214

Mr. W. Pearce
Acting Vice President
FirstEnergy Nuclear Operating Company
Perry Nuclear Power Plant
10 Center Road, A290
Perry, OH 44081

SUBJECT: PERRY NUCLEAR POWER PLANT
NRC SUPPLEMENTAL INSPECTION REPORT 05000440/2005015(DRS)

Dear Mr. Pearce:

On December 9, 2005, the U.S. Nuclear Regulatory Commission (NRC) completed a supplemental inspection at your Perry Nuclear Power Plant. Subsequent to the September 13, 2005, teleconference between Mr. V. Hagaki of your staff, and Mr. Ken Riemer of the Region III staff, you informed the NRC that you would be prepared for this inspection to be conducted during the week of December 5, 2005. The enclosed report documents the inspection results which were discussed on December 9, 2005, with Mr. R. Anderson and members of your staff.

The NRC performed this supplemental inspection to assess your evaluation of a White finding, which was also a violation of 10 CFR 50.47(b)(4), in the Emergency Preparedness area of the Reactor Safety cornerstone. We conducted this inspection in accordance with Inspection Procedure 95001, "Inspection For One Or Two White Inputs In A Strategic Performance Area," and 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.

Based on the results of this inspection, we concluded that you adequately understood the root and contributing causes for your staff's failure to perform an off-site dose assessment within 15 minutes following the declaration of an Alert emergency classification on July 20, 2004, as required by the emergency plan. No findings of significance were identified concerning your evaluations and corrective actions associated with this issue. We concluded that your corrective actions were sufficient to address the causes and to prevent recurrence of the issue. As a result, the White finding and associated violation of 10 CFR 50.47(b)(4) are considered closed.

In accordance with 10 CFR 2.390 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), accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Mark A. Satorius, Director
Division of Reactor Projects

Docket No. 50-440
License No. NPF-58

Enclosure: Inspection Report 05000440/2005015
w/Attachment: Supplemental Information

cc w/encl: G. Leidich, President - FENOC
J. Hagan, Chief Operating Officer, FENOC
D. Pace, Senior Vice President Engineering and Services, FENOC
Director, Site Operations
Director, Regulatory Affairs
M. Wayland, Director, Maintenance Department
Manager, Regulatory Compliance
T. Lentz, Director, Performance Improvement
J. Shaw, Director, Nuclear Engineering Department
D. Jenkins, Attorney, First Energy
Public Utilities Commission of Ohio
Ohio State Liaison Officer
R. Owen, Ohio Department of Health
W. King, FEMA, Region V

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U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No:	50-440
License No:	NPF-58
Report No:	05000440/2005015
Licensee:	FirstEnergy Nuclear Operating Company
Facility:	Perry Nuclear Power Plant
Location:	P.O. Box 97 A200 Perry, OH 44081
Dates:	December 5 through December 9, 2005
Inspector:	T. Ploski, Senior Emergency Preparedness Inspector
Approved by:	K. Riemer, Chief Plant Support Branch Division of Reactor Safety

Enclosure

SUMMARY OF FINDINGS

IR 05000440/2005015; 12/05/2005 - 12/09/2005; Perry Nuclear Power Plant; Supplemental Inspection; IP 95001, “Inspection For One Or Two White Inputs In A Strategic Performance Area.”

This supplemental inspection was performed by a regional emergency preparedness inspector. No findings of significance were identified. The NRC’s program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, “Reactor Oversight Process,” Revision 3; dated July 2000.

Cornerstone: Emergency Preparedness

The U.S. Nuclear Regulatory Commission (NRC) performed this supplemental inspection to assess the licensee’s evaluation of a White finding in the Emergency Preparedness cornerstone of the Reactor Safety strategic performance area. The issue that resulted in a White finding was also a violation of Title 10, Code of Federal Regulations (10 CFR) 50.47(b)(4). This supplemental inspection was performed in accordance with Inspection Procedure 95001, “Inspection For One Or Two White Inputs In A Strategic Performance Area.” The inspector concluded that the licensee performed adequate evaluations of the root causes and contributing causes of the issue and had either completed or scheduled appropriate corrective actions. As a result, the violation and associated White finding are considered closed.

The licensee’s evaluation of the issue that resulted in a White finding and a violation of 10 CFR 50.47(b)(4) identified three root causes. First, the implementing procedure containing the site-specific Emergency Action Levels (EALs) contained an action statement that was embedded in a note, which contributed to the Shift Manager’s (SM) decision to not execute the embedded action because placing action statements in a procedural note was contrary to the licensee’s procedure writer’s guide. The embedded action statement prescribed an off-site dose projection and assessment of results within 15 minutes following an Alert declaration based on EAL HA-1. Second, EAL training given to emergency declaration decision makers was not fully effective regarding EAL HA-1, which resulted in the SM rationalizing that the action statement in EAL HA-1's note was discretionary. Third, the Corrective Action Program (CAP) was not effectively used to evaluate the Alert declaration and subsequent events. Although the performance of on-shift personnel and other licensee responders were promptly critiqued after the Alert declaration was terminated, no CAP document was generated to encompass all of the critique items in a comprehensive manner. Instead, the event evaluation was fragmented and bypassed inter-departmental management review aspects of the CAP.

The licensee’s evaluation of the issue also identified three contributing causes. First, shift staffing was not sufficient to perform all assignments associated with EAL HA-1 and an off-normal instruction in a timely manner. Specifically, once an off-gas vent pipe radiation monitor indicated off-scale high, the only on-shift chemistry technician was expected to simultaneously obtain and analyze a grab sample of the vent pipe’s effluent, and perform an off-site dose projection. A single on-shift chemistry technician was incapable of performing both assignments within 15 minutes. As a result, the SM had to decide what assignment had higher priority. Second, other plant instrumentation and the SM’s knowledge and experience contradicted the emergency plan guidance to classify the event as an Alert. The SM’s knowledge of the off-site dose projection software refuted the need for additional actions.

The Alert classification was declared based on an indication of one radiation monitor with no other confirmatory indications of an abnormal gaseous release. The SM chose a course of action that was focused on terminating the Alert classification rather than following the emergency plan by having the chemistry technician perform an off-site dose projection. Third, the licensee was narrowly focused on the validity of the Alert classification, rather than the consequences of failing to perform the off-site dose projection required by the emergency plan. The licensee's initial corrective actions were focused on preventing a recurrence of making an Alert declaration due to a malfunctioning radiation monitor, rather than addressing the issue of its staff failing to follow the emergency plan by not performing an off-site dose projection within 15 minutes after making an Alert declaration.

Given the licensee's acceptable performance in evaluating the issue associated with the White finding, this performance issue will no longer be held open.

A. Inspector-Identified and Self-Revealed Findings

None.

B. Licensee-Identified Violations

None.

REPORT DETAILS

01 INSPECTION SCOPE

Background

At 3:29 a.m. on July 20, 2004, the plant's off-gas vent pipe gaseous effluent radiation monitor indicated off-scale high. At 3:44 a.m., the Shift Manager (SM), as the initial Emergency Coordinator (EC), declared an Alert due to the SM's interpretation that this monitor's indication met the entry condition for Emergency Action Level (EAL) HA-1, which was associated with any unplanned release of gaseous radioactivity to the environment that exceeded 200 times the Off-site Dose Calculation Manual's control limit for 15 minutes or greater. This EAL included a requirement, which was contained in a note, that an off-site dose projection calculation using the licensee's Computer-Aided Dose Assessment Program (CADAP) software and the source term determined at the time of the emergency event, must be performed within 15 minutes following the Alert declaration in order to determine if the Site Area Emergency EAL's entry criteria had been met. However, the licensee did not perform an off-site dose calculation using the CADAP until about 5:32 a.m. and the off-site dose calculation results were not reported to Control Room personnel until about 6:24 a.m., which was about 2 hours and 40 minutes after the Alert declaration.

As a result of the Alert declaration, the initial EC activated the Emergency Response Organization (ERO) to staff the onsite Technical Support Center (TSC) and Operations Support Center (OSC). However, the EC did not direct the plant staff to perform an off-site dose projection and assessment using CADAP until after the TSC was staffed.

Meanwhile, no other plant radiation monitors indicated abnormal readings. By 4:03 a.m., the on-shift personnel had collected and analyzed the first of several grab samples from the off-gas vent pipe's effluent, which indicated that no abnormal radioactive release had occurred. Personnel deployed from the OSC to the site boundary and several plant buildings to perform radiation surveys did not identify any indications of a release. An analysis of reactor coolant indicated that dose equivalent iodine levels were normal. The TSC Operations Manager, who relieved the SM of EC responsibilities, acceptably terminated the Alert clasification at 9:01 a.m.

At 4:04 a.m. on July 20, 2004, the licensee notified the U.S. Nuclear Regulatory Commission (NRC) Headquarters Operations Officer of the Alert declaration in accordance with 10 CFR 50.72(a)(1)(I). On September 10, 2004, the licensee notified the NRC Headquarters Operations Officer that it was retracting its Alert declaration of July 20, 2004. The licensee's retraction message indicated that Alert EAL HA-1 was entered based on an invalid reading due to a failed instrument and that there were no corresponding indications from other radiation monitors that a release was in progress. The message also indicated that troubleshooting had confirmed that the vent pipe radiation monitor's off-scale high reading was invalid and that at no time was there an unplanned release that would have warranted activation of the licensee's emergency plan.

Scope

The NRC performed this supplemental inspection to assess the licensee's evaluation of a White finding in the emergency preparedness area of the Reactor Safety cornerstone. The White

finding, which was also a violation of Title 10 of the Code of Federal Regulations (10 CFR) 50.47(b)(4), was due to a failure to follow the requirements of the Perry Nuclear Power Plant Emergency Plan during an event that was classified at the Alert level on July 20, 2004. Specifically, the licensee did not perform an off-site dose assessment within 15 minutes after classifying the event, as required by the Emergency Plan.

02 EVALUATION OF INSPECTION REQUIREMENTS

02.01 Problem Identification

c. *Determine that the root cause evaluation identifies who (i.e., licensee, self-revealing, or NRC) identified the issue and under what conditions.*

As documented in NRC Inspection Report 05000440/2004013, resident inspectors noted during their response to the event that the licensee failed to perform an off-site dose assessment using the CADAP within 15 minutes after the Alert declaration as required by EAL HA-1.

By letter dated March 29, 2005, the NRC notified the licensee of the final significance determination of the White finding and Notice of Violation (NOV) for the issue of the failure to implement EAL HA-1 by not performing an off-site dose assessment within 15 minutes after the Alert declaration on July 20, 2004. On March 29, 2005, the licensee initiated Condition Report (CR) 05-02861 upon receipt of the final White finding and NOV. The licensee's root cause investigation charter, dated April 13, 2005, acknowledged that NRC staff had identified the issue in the following statement: "the NRC has determined that the EALs were not implemented because the SM did not implement the dose projection calculation."

b. Determine that the root cause evaluation identifies how long the issue existed and prior opportunities for identification.

Following its receipt of the NRC's final significance determination, White finding, and associated NOV in March 2005, the licensee initiated a Root Cause Investigation (RCI). The RCI Report 05-02861, "White Finding and Notice of Violation for Risk Significant Planning Standard Failure During July 20, 2004 Alert Event," was approved by the Site Vice President on July 7, 2005. The report documented that a search of licensee records for a 5-year period prior to this event did not identify any other instances in which an EC failed to implement an emergency plan requirement after making an emergency declaration. The RCI report also included a detailed event chronology, which documented the times on the morning of July 20 when the off-gas vent pipe radiation monitor indicated an off-scale high reading, when the SM classified the event as an Alert per EAL HA-1, when State and county officials were notified of this emergency declaration, when a CADAP calculation was performed, and when the emergency event was terminated.

c. Determine that the root cause evaluation documents the plant-specific risk consequences (as applicable) and compliance concerns associated with the issue.

The RCI report correctly documented that the actual safety significance of the Alert declaration was low since it was associated with a faulty radiation monitor rather than an actual abnormal release of radioactive effluent. The report also indicated that the event was signficant because an approved emergency plan implementing procedure (the Emergency Plan Instruction (EPI) containing EAL HA-1) was not followed by the SM and because safe plant operation is based on compliance with approved procedures. The RCI report correctly noted that the basis of the White finding and NOV was the SM's failure to implement the emergency plan by not ensuring that a CADAP calculation was performed in accordance with EAL HA-1.

02.02 Root Cause and Extent of Condition

a. Determine that the issue was evaluated using systematic method(s) to identify root cause(s) and contributing cause(s).

The licensee's RCI was conducted in accordance with Revision 2 of Nuclear Operating Business Practice (NOBP)-LP-2011, "First Energy Nuclear Operating Company (FENOC) Root Cause Analysis Reference Guide." The licensee's RCI employed systematic methods, Event and Causal Factors Charting and Barrier Analysis techniques, to identify three root causes and three contributing causes.

The inspector reviewed relevant portions of Revision 2 of NOBP-LP-2011 and RCI Report 05-02861 and concluded that the licensee used adequate, structured approaches to identify the root and contributing causes associated with the issue.

b. Determine that the root cause evaluation was conducted to a level of detail commensurate with the significance of the issue.

The inspector concluded that the analysis documented in RCI Report 05-02861 was conducted to a sufficient level of detail and was commensurate with the significance of the issue.

The RCI identified the following three root causes. First, the revision of EPI-A1, which was in effect on July 20, 2004, as well as previous revisions of this EPI since 1997, contained an action statement that was embedded in a note, which contributed to the SM's decision to not execute the embedded action. Specifically, the embedded action statement prescribed an off-site dose projection and assessment of results within 15 minutes following an Alert declaration based on EAL HA-1. The licensee's RCI report indicated that the placement of an action statement in a note created confusion on whether the statement was only a clarification or a required action.

The inspector reviewed revisions of the wording of EAL HA-1 and associated notes, as found in revisions of the emergency plan and EPI-A1 that were in effect in July 2004 and through late July 2005, and verified that the requirement to perform a dose assessment using CADAP had been embedded in a note in 2004 and removed from this note by late July 2005. The licensee retained this requirement in the EAL. The inspector also reviewed relevant excerpts of Revision 2 of FENOC Nuclear Operating Administrative Procedure WG-0001, "Procedure Writer's Guide," which clearly indicated that a note was to be used to provide advisory or administrative information and that a note "shall

not" contain action steps for procedure performance. As a result, the inspector concluded that the placement of an action statement in a note could cause confusion on whether the action statement was advisory in nature or a required action.

The second root cause was that training of relevant ERO members was not fully effective regarding EAL HA-1, which resulted in the SM, as initial EC, rationalizing that the action statement in EAL HA-1's note was discretionary. The RCI report documented that on July 20, 2004, the SM and Shift Engineer (SE) implemented an infrequently used EAL that contained a time-critical (15-minute) action statement (to perform a CADAP dose projection) that was embedded in a note. The RCI report reasonably noted that the conduct of infrequently performed evolutions were prone to increased human performance errors.

The third root cause was that the Corrective Action Program (CAP) was not effectively used to evaluate the Alert declaration and subsequent events. The RCI report indicated that the performances of on-shift personnel and other ERO members were promptly critiqued after the event was terminated. As a result, a number of "fix it-level" CRs were initiated; however, the RCI report indicated that no CR was generated to encompass all of the critique items in a comprehensive or collective manner. Instead, the event evaluation was fragmented. As a result, the evaluation by-passed inter-departmental management review aspects of the CAP.

The RCI report also identified the following three contributing causes. First, shift staffing was not sufficient to perform all assignments associated with EAL HA-1 and an off-normal instruction in a timely manner. Specifically, once an off-gas vent pipe radiation monitor indicated off-scale high, the only on-shift chemistry technician on site was expected to simultaneously obtain and analyze a grab sample of the vent pipe's effluent and perform an off-site dose projection using CADAP. A single on-shift chemistry technician was incapable of performing both assignments within 15 minutes.

The second contributing cause was that plant instrumentation and the SM's knowledge and experience contradicted the emergency plan guidance to classify the event as an Alert. The SM's knowledge of the CADAP refuted the need for additional actions. The Alert classification was declared based on an indication of one radiation monitor with no other confirmatory indications of an abnormal gaseous release. The RCI report indicated that, as a result, the SM chose a course of action that was focused on terminating the Alert classification rather than following the emergency plan by having the on-shift chemistry technician perform an off-site dose projection using CADAP.

The third contributing cause was that the licensee was narrowly focused on the validity of the Alert classification, rather than on the consequences of failing to perform an action required by the emergency plan, specifically an off-site dose projection using CADAP within 15 minutes after the Alert declaration. The RCI report indicated that the licensee's critique correctly concluded that a single failed radiation monitor was not an appropriate reason for an Alert declaration. However, the licencee initial corrective actions (CAs) were focused on preventing a recurrence of making an Alert declaration due to a failed radiation monitor rather than addressing the issue of failing to follow the emergency plan by not performing a required CADAP calculation within 15 minutes after making an Alert declaration.

c. *Determine that the root cause evaluation included consideration of prior occurrences of the problem and knowledge of prior operating experience.*

The RCI report indicated that the licensee conducted a database search for the 5-year period prior to the July 2004 event and identified no other emergency event at the Perry Nuclear Power Plant in which an EC failed to implement an emergency plan requirement following an emergency declaration.

The RCI report also summarized the results of an industry Operating Experience (OE) database search for instances in which emergency declarations were either missed, delayed, or involved a failure to fulfill an emergency plan commitment. None of the situations identified in this search was identical to the July 2004 event at the Perry Plant with respect to a failure to clearly state emergency plan requirements in implementing procedures. Only one external OE event was identified that had some similarity to the July 2004 event at the Perry Plant. This event involved another licensee's failure to recognize that an Unusual Event EAL was relevant to plant conditions regardless of the plant's operating mode. As a result, that licensee failed to classify an event as an Unusual Event in a timely manner after conditions warranting this declaration were available to the SM. However, the RCI report indicated that this untimely Unusual Event classification did not occur until about seven months after the July 2004 event at the Perry Plant and was, therefore, not available as OE to Perry Plant personnel.

In addition to the information provided in RCI Report 05-02861, the licensee's Emergency Planning (EP) Unit issued Self-Assessment Report 737PYRC2005 in February 2005 that included the results of the EP staff's reviews of OE records for a 5-year period, including an industry database, NRC event reports, and NRC Regulatory Information Summaries. This self-assessment report also included the results of a review of the Perry Nuclear Power Plant's EP-related CRs for the period 2002 through 2004. The inspector's review of relevant portions of this self-assessment report indicated that no other instances were identified besides the July 2004 event in which required actions were not implemented following an emergency declaration.

Based upon the aforementioned information summarized in the RCI report and the EP organization February 2005 self-assessment report, the inspector concluded that the licensee adequately searched for prior occurrences of the issue of failing to perform an action required by an emergency plan following an emergency declaration.

d. *Determine that the root cause evaluation addresses the extent of condition and the extent of cause of the issue.*

With respect to extent of condition, the RCI report indicated that the licensee did not identify any emergency event at the Perry Plant for the five year period prior to the July 2004 event in which an EC failed to implement an emergency plan requirement following an emergency declaration.

In addition to the extent of condition information provided in the RCI report, EP organization staff provided three self-assessments, which were completed in September and October 2004, of the Perry Nuclear Power Plant's emergency classification scheme.

As background information, the Perry Plant's emergency classification scheme was based on the guidance of Revision 2 of the Nuclear Management and Resources Council (NUMARC)-007 document, which was approved in 1992 by NRC as an acceptable alternative emergency classification scheme to the 1980 guidance found in Revision 1 of Nuclear Regulatory Guide (NUREG) 0654. The NRC Headquarters staff approved the Perry Plant's EALs and associated technical bases document, which were based on the NUMARC-007 document, in 1997.

The first EAL self-assessment was completed by several members of the Perry Plant's Operations Section in September 2004. As indicated in CR 04-04825, this assessment was performed to ensure that the EALs, as contained in implementing procedure EPI-AI, could be implemented by verifying that EAL implementing procedure EPI-A1 included the following: sufficient indication information; sufficient personnel to perform necessary tasks; and sufficient guidance for personnel to perform tasks associated with entry into an EAL. This self-assessment's overall conclusion was that the current EALs could be implemented as written, although the assessment team identified several types of changes that were characterized as improvement items, such as: specifying the numerical values corresponding to multipliers of a limit specified in the Off-site Dose Calculation Manual; revising several EALs' references to specific Control Room instrumentation to exactly match the corresponding nameplates' wording in the Control Room; re-validating the times needed to perform actions specified in several EALs; and correcting some formatting inconsistencies.

The second self-assessment was performed by a contractor in September 2004. This assessment was a comparison of the EAL information contained in the following documents: Revision 5 of Plant Emergency Instruction (PEI)-0019, which was the EAL technical bases document; Revision 20 of the emergency plan; the EALs and their technical bases as approved by NRC in 1997; and the generic EAL guidance of the NUMARC-007 document. Two of the improvement items identified in this self-assessment had relevance to this supplemental inspection. First, it was suggested that the word "valid" be added to the indicators of some EALs to better emphasize that emergency classification decisions needed to be based on valid indications. Second, it was suggested to revise one of the notes associated with EAL HA-1 to clarify whether the on-shift chemistry technician's higher priority was to perform a dose projection calculation using CADAP or to obtain and analyze a grab sample of gaseous effluent.

The third self-assessment was completed by an operations training instructor in October 2004. This assessment was performed to identify potential concerns in the following: the EALs contained in implementing procedure EPI-A1; EAL technical bases information in PEI-0019; and EAL training provided to relevant ERO members. This self-assessment included interviews with several members of the Operations and Chemistry Departments. A number of potential concerns were categorized as follows: inconsistencies between information found in EPI-A1 and PEI-0019; entry criteria interpretation; ability to perform actions within specified time limits; and ability to make a timely diagnosis of EAL entry criteria. Recommendations associated with these types of potential concerns were typically to determine the validity of the concerns and then take appropriate corrective action. With respect to EAL HA-1, the concern was limited to the on-shift chemistry technician's ability to collect and analyze an effluent grab sample in

15 minutes, rather than on the technician's simultaneous ability to perform an off-site dose projection using CADAP in 15 minutes after an emergency declaration.

The third self-assessment also identified concerns regarding training given to those ERO members who would be involved in emergency classification decision making. For example, it was noted that EAL training was based on implementing procedure EPI-A1 and did not incorporate additional details found in the EAL technical bases document PEI-0019. The basic concern was that the decision maker, who would be under pressure to make a timely and accurate emergency declaration decision, would only refer to EPI-A1 and not refer to PEI-0019, which might contain additional details relevant to decision making.

It was noted in the third self-assessment report that when training was provided to licensed personnel on the plant's Technical Specifications, relevant bases were included in the training. In contrast, when EAL training was provided, the associated technical bases were either not referenced or not emphasized. With respect to training provided to Chemistry Department personnel, the self-assessment report noted that additional training on chemistry-related EALs would be beneficial to increase the knowledge level of chemistry staff. The report also noted that it was questionable whether on-shift chemistry staff could complete a grab sample collection and analysis task within the time limit specified in certain EALs.

The inspector concluded that these three self-assessments had identified worthwhile EAL training and other improvement items, including several that had relevance to the July 2004 event and the associated failure to perform a dose projection using CADAP within 15 minutes of the Alert declaration. The Corporate EP Manager indicated that a number of CAs relevant to this supplemental inspection were completed during 2004 and early 2005. The manager also indicated that no major revision to the plant's emergency classification scheme was planned prior to the possible development in 2006 or 2007 of a revised emergency classification scheme that would be based on the guidance of Revision 4 of the Nuclear Energy Institute (NEI) 99-01 document, which was approved in 2003 by NRC as an acceptable alternative emergency classification scheme to the guidance of NUREG 0654 and NUMARC-007. The manager correctly understood that such a revision to the plant's emergency classification scheme would have to be submitted to the NRC for pre-implementation review and approval.

With respect to extent of cause, RCI Report 05-02861 summarized the results of an Operations Section database search for the time period beginning in 2000 through April 2005. This search identified seven instances involving procedure change requests to remove action statements from procedural notes. The report also indicated that the root cause investigation team identified two other instances of operations procedures containing action statements that were embedded in notes. Resulting CAs were either completed or were being tracked using the CAP to eliminate these nine instances of procedural notes containing action statements. The root cause investigation team concluded that these nine instances were insufficient to indicate the existence of a generic or broad concern on adherence to the Procedure Writer's Guide's prohibition on including action statements in procedural notes.

In preparation for this supplemental inspection, the licensee conducted Snapshot Self-Assessment 807PYRC2005 during the week of November 7, 2005. One outcome of this self-assessment, which involved the participation of several personnel from FENOC's other two nuclear power plants, was the completion of another survey of notes contained in a sample of 100 Perry Plant procedures that were selected from nine sets of operations procedures. These 100 procedures contained roughly 1600 notes. No instances were identified of a note containing an action statement.

The inspector concluded that the licensee's extent of condition and extent of cause evaluations, which were associated with RCI Report 05-02861 and the four aforementioned self-assessments, were adequate.

02.03 Corrective Actions

a. Determine that appropriate corrective actions are specified for each root cause, or that there is an evaluation that no actions are necessary.

As indicated in Subsection 02.02.b, the licensee promptly critiqued its staff's actions associated with the July 2004 event and initiated a number of CRs in 2004 prior to the generation of the RCI Report and that report's 16 CAs. The RCI Report's event chronology and Attachment 5 to the RCI Report adequately summarized aspects of those CRs issued during 2004 that were relevant to the implementation of EAL HA-1.

For example, the three EAL self-assessments, which were described in Subsection 02.02.d, resulted from three CRs issued in Summer 2004. The critiques of Control Room staff's and other ERO members' performances identified an inexact reference in EAL HA-1 to the nameplate of one Control Room instrument. Several CAs associated with CR 04-03986 involved adding the word "valid" to the entry criteria of eight EALs, including EAL HA-1, that were in implementing procedure EPI-A1 and in EAL technical bases document PSI-0019 to better ensure that a decision maker would base an emergency declaration on a valid instrument readout rather than on a readout from a malfunctioning instrument. These CAs were completed in the September 2004 through January 2005 time frame. The inspector reviewed relevant revisions of procedure EPI-A1, PSI-0019, and the emergency plan's table of EALs and verified that all these CAs had been completed as indicated in the CAP records.

Another CA associated with the third EAL self-assessment included: revisions of three training lesson plans relevant to Control Room staff, EC, and the TSC Operations Manager to address the EALs' technical bases document in addition to procedure EPI-A1. The inspector verified that these lesson plans' revisions were completed in late March 2005. Also, the inspector verified that a lesson plan used in the chemistry technicians' continuing training was revised in Fall 2004 to review those EALs that would involve action by on-shift chemistry technician(s). Records review indicated that training based on this expanded lesson plan was conducted in August through October 2004.

One CA associated with CR 04-03986 addressed additional training to those ERO members, who would be involved in emergency declaration decision making, to emphasize the need to base their emergency classification decisions on valid indications. The RCI Report indicated that this training was completed during

January 2005. In the interim, the EP organization issued “EP Note 04-0414" to relevant ERO members in late July 2004 which emphasized the importance of basing emergency declaration decisions on valid instrument indications.

The RCI Report indicated that a CA associated with CR 04-05538 involved training of all Senior Reactor Operators (SROs) and all ECs on all EALs. A schedule was developed to conduct this EAL training during licensed operator re-qualification training to be conducted during 2005. The RCI Report indicated that this CA was prematurely closed based on the development of the training schedule, rather than on completion of the EAL training. As a result, another CR was generated to track completion of this EAL training.

Another CA taken soon after the July 2004 event was the issuance of Chemistry Standing Order 04-016, which became effective on July 23, 2004. This order resulted in a second chemistry technician being assigned to all off-hours work shifts so that two qualified technicians would be available to perform grab sample collection and analysis and the off-site dose projection using CADAP. This standing order was categorized as a compensatory measure pending further assessment of chemistry staff’s expected actions associated with EAL HA-1.

As indicated in Subsection 02.01, the licensee initiated its RCI upon receipt of the final White finding and violation. Sixteen CAs were associated with RCI Report 05-02861. The RCI Report included a matrix that associated 12 of these 16 CAs with the relevant root cause or contributing cause, as well as listing the lead person assigned to each CA and each CA’s due date.

In summary, the inspector concluded that CAs which were initiated before and after completion of RCI 05-02861, were adequate to prevent recurrence of the issue of failing to perform an off-site dose projection within 15 minutes of an Alert declaration based on EAL HA-1. Many of the CAs associated with RCI 05-02861 were adequately linked to either a specific root cause or to a specific contributing cause that was identified in this RCI. The snapshot self-assessment was valuable in focusing attention on the need for management-level decisions associated with several CAs. Also, multiple actions had been completed to emphasize the importance of basing emergency declarations on valid instrument indications rather than on an indication from a malfunctioning instrument.

b. Determine that the corrective actions have been prioritized with consideration of the risk significance and regulatory compliance.

The inspector concluded that the CAs associated with RCI 05-02861 were adequately prioritized. Also, the evolution of the Chemistry Standing Order, with respect to mobility limitations placed on the on-shift chemistry technician and how to keep Control Room staff informed of the technician’s whereabouts, demonstrated that the licensee recognized the importance of compliance with Technical Specification requirements as well as compliance with emergency plan commitments.

Also, the three EAL self-assessments, which were completed in 2004, and the increased procedural and training emphasis on basing emergency declarations on valid indications, rather than on indications from malfunctioning instruments, demonstrated

the licensee's recognition of the importance of ensuring that emergency declarations would be accurately made.

The November 2005 snapshot self-assessment and subsequent mid-November decisions demonstrated the licensee's sensitivity to avoid decreasing the effectiveness of the emergency plan while recognizing the need to maintain an on-shift capability to perform off-site dose projection calculations. Specifically, the decision was made to have the on-shift chemistry technician maintain the responsibility for performing off-site projections using CADAP, while the on-shift SE would perform CADAP calculations only if the on-shift chemistry technician became incapacitated.

c. Determine that a schedule has been established for implementing and completing the corrective actions.

With the exception of a prematurely closed CA that was identified in the November 2005 snapshot self-assessment and/or the RCI Report, the inspector did not identify instances of inadequately completed CAs. The CAs that were associated with the RCI Report had reasonably scheduled completion dates. Many were completed prior to this inspection. The completion dates of several CAs resulting from the snapshot self-assessment and CR 05-07113 were also reasonable.

d. Determine that quantitative or qualitative measures of success have been developed for determining the effectiveness of the corrective actions to prevent recurrence.

The RCI Report included provisions for two effectiveness reviews and specified adequate success criteria for each review. The inspector reviewed the first effectiveness review report, dated September 2005, and concluded that it adequately addressed the relevant success criteria. The inspector noted that some of the report's information was out of date, based on the results of the snapshot self-assessment completed in November 2005 and subsequent decisions made in mid-November 2005. Otherwise, the inspector had no concerns with the quality of this effectiveness review. The second effectiveness review had a scheduled completion date of May 12, 2006.

02.04 (Closed) Violation (VIO/05000440/2004016-01: Failure to Perform Off-site Dose Assessment in 15 Minutes Following an Actual Alert Declaration on July 20, 2004, Based on EAL HA-01.

Licensee actions to address this violation have been reviewed and documented in this inspection report. This violation is closed.

03 MANAGEMENT MEETINGS

Exit Meeting Summary

The inspectors presented the inspection results to Mr. R. Anderson and other members of licensee management and staff at the conclusion of the inspection on December 9, 2005. The licensee acknowledged the information presented. No proprietary information was discussed.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

R. Anderson, Vice President, Operations
F. Von Ahn, Director of Site Operations
T. Lentz, Director, Performance Improvement Initiative
F. Cayia, Director, Performance Improvement
J. Shaw, Director, Engineering
M. Wayland, Director, Maintenance
J. Beavers, Emergency Planning Specialist
N. Bonner, Manager, Nuclear Oversight
L. Burgwald, Emergency Planning Specialist
T. Evans, Manager, Training
V. Higaki, Manager, Fleet Emergency Preparedness
G. Huston, Nuclear Oversight Auditor
J. Lausberg, Manager, Regulatory Compliance
K. Meade, Emergency Planning Specialist
J. Messina, Manager, Operations
J. Oelbracht, Acting Manager, Chemistry
S. Thomas, Manager, Radiation Protection

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None.

Closed

05000440/2004016-01	VIO	Failure to Perform an Off-site Dose Assessment in 15 Minutes Following an Actual Alert Declaration on July 20, 2004 Based on EAL HA-1

Discussed

None.

LIST OF DOCUMENTS REVIEWED

NRC Event Report 40882; Alert Declared Due to Off-Gas Effluent Monitor Alarm; dated July 20, 2004

NRC Event Report 40882 Update; Retraction of Alert Declaration Made on July 20, 2004; dated September 10, 2004

RCI Report 05–2861; White Finding and Notice of Violation for Risk Significant Planning Standard Failure During July 20, 2004 Alert Event; dated July 7, 2005

CA 1 through 16 Associated with RCI Report 05-02861

Internal Memorandum Documenting Site Vice President's Approval of RCI Report 05-02861; dated July 18, 2005

CR 04-03986; Revise EPI-AI, PSI-0019, Emergency Plan, and Training to EC and SRO to Emphasize Use of Valid Indications for Emergency Classifications

CA 1 through 4 Associated with CR 04-03986

CA 1 to CR 04-04988; Evaluate if Emergency Declaration Using EAL HA-1 or HA-2 Can be Based on a Valid Effluent Monitor Reading Without Also Comparing Effluent Grab Sample Analysis to an Off-site Dose Calculation Manual Limit

Perry Plant Emergency Plan; Table 4-1; Category H EALs for Increased Radiation Release to the Environment; Revisions 20, 22, and 23

EPI-A1; Emergency Action Levels; Category H EALs; Revisions 10, 13, 14, and 15

PSI-0019; EAL Entry Criteria and Bases; Revisions 7 and 8

Training Presentation to EC and SRO on EAL Changes

Perry Plant Emergency Plan; Table 5-1; (On-Shift) ERO Functions and Shift Staff Augmentation Plan; Revisions 21 and 23

FENOC Nuclear Operating Administrative Procedure Writer's Guide; Section 4.5; Revision 3

Training Presentation; Perry Alert - July 20, 2004 - EAL HA-1 Classification and Implementation

Training Attendance Sheets; Continuing Training for Licensed Operators - Cycle 2005-02; dated May 6, 2005 through July 15, 2005

Perry Business Practice-0045; Initial Screening Committee; Revision 0; dated July 28, 2005

Perry Business Practice-0046; Corrective Action Program Implementation Expectations; Revision 0; dated September 1, 2005

Excerpts of Perry Plant Programs Performance Review Initiative Action B.1.11; 737 PYRC Emergency Preparedness Program Self-Assessment; Revision 1; dated March 25, 2005

Excerpts of Perry Nuclear Oversight Assessment; Quarterly Audit Report PY-C-05-02; dated August 19, 2005

CR CA 05-02861-11 Interim Effectiveness Review; dated September 14, 2005

Chemistry Technician Continuing Training Lesson Plan CHC 200404; Plant Systems, Diesel Fuel Oil, Dose Assessment; dated August 19, 2004

Training Attendance Sheets for Chemistry Technician Training on Lesson Plan CHC 200404; dated August 20 through October 9, 2004

Internal Memorandum RAS-T-05-0030; Conference Call with NRC Region III Staff on On-Shift Chemistry Technician Duties; dated July 25, 2005

Chemistry Standing Order 04-016; Shift Responsibilities; dated July 23, 2004

Chemistry Standing Order 05-017; Shift Responsibilities; dated July 25, 2005

Chemistry Standing Order 05-019; Shift Responsibilities; dated July 26, 2005

Chemistry Standing Order 05-020; Shift Responsibilities; dated July 27, 2005

Chemistry Standing Order 05-025; Shift Responsibilities; dated November 4, 2005

CR 05-07545; Apparent Gap Between NRC Telephone Conference in July 2005 and Chemistry Standing Order

Internal Memorandum RAS-T-05-0039; Conference Call with NRC Region III Staff on Clarification of On-Shift Chemistry Technician Duties; dated November 18, 2005

Perry Plant ERO Note 04-014; Use of Indications to Enter Emergency Action Levels; dated July 27, 2004

Self-Assessment of EAL Implementation; dated September 14, 2004

Self-Assessment of EAL Technical Bases Document; dated September 14, 2004

Self-Assessment of EALs, EALs Bases, and EAL Training; dated October 6, 2004

Lesson Plan EPL-0801-010-01; Emergency Coordinator; Revision 10; dated March 28, 2005

Lesson Plan EPL-0804-01; Emergency Plan Training - Control Room; Revision 12; dated March 28, 2005

Lesson Plan EPL-0816-008-01; Operations Manager; Revision 8; dated March 29, 2005

CR 05-07113; On-Shift Chemistry Technician Unavailable to Perform CADAP Calculations for Over 15 Minutes While Taking Reactor Coolant for Scheduled Down Power on October 12, 2005

Cause Analysis Associated with CR 05-07113; dated November 15, 2005

CA 1 through 3 Associated with CR 05-07113

Fleet Snapshot Self-Assessment 807PYRC2005; Failure to Perform Dose Assessment Within 15 Minutes of Declaring an Alert in July 2004; Performed on November 7 through 11, 2005; dated December 1, 2005

CR 05-07612; Deficiencies in RCI 05-02861 Based On Snapshot Self-Assessment 807PYRC2005

Internal Memorandum; Conclusions Reached at November 18, 2005 Meeting on Concerns Identified on Several CA of RCI 05-02861 Based on Snapshot Self-Assessment; dated November 22, 2005

CA 1 to CR 05-07612; Perform a Survey of Samples of Perry Plant Operations Procedures to Determine if Content of Their Notes are Consistent with FENOC Procedure Writer's Guide

Review of Notes in 100 Operations Procedures - Supplemental Extent of Cause for RCI 05-02861

Training Attendance Sheets for SE Training on CADAP per Lesson Plan EPL-CADAP4SE-PY; dated October 11 through 21, 2005

Lesson Plan DOC-9189; SE Training Plan; Revisions 3 and 4

List of Locations of Computers Equipped with CADAP Software; dated November 30, 2005

LIST OF ACRONYMS USED

ADAMS	Agency wide Documents Access and Management System
CA	Corrective Action
CADAP	Computer-Aided Dose Assessment Program
CAP	Corrective Action Program
CFR	Code of Federal Regulations
CR	Condition Report
DRS	(NRC Region III) Division of Reactor Safety
EAL	Emergency Action Level
EC	Emergency Coordinator
EP	Emergency Planning
EPI	Emergency Plan Instruction
FEMA	Federal Emergency Management Agency
FENOC	FirstEnergy Nuclear Operating Company
NEI	Nuclear Energy Institute
NOBP	Nuclear Operating Business Practice
NOS	Nuclear Oversight
NOV	Notice of Violation
NRC	Nuclear Regulatory Commission
NUMARC	Nuclear Management and Resources Council
NUREG	Nuclear Regulatory Guide
OE	Operating Experience
OSC	Operations Support Center
PARS	Publically Available Records
RCI	Root Cause Investigation
PEI	Perry Emergency Instruction
SE	Shift Engineer
SRO	Senior Reactor Operator
TSC	Technical Support Center