ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

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License No.:	NPF-30
Report No.:	50-483/99-10
Licensee:	Union Electric Company
Facility:	Callaway Plant
Location:	Junction Highway CC and Highway O Fulton, Missouri
Dates:	September 13-16, 1999
Inspectors:	F. L. Brush, Senior Resident Inspector, Wolf Creek Generating Station, Team Leader H. A. Freeman, Senior Emergency Preparedness Analyst, Plant Support Branch P. J. Elkmann, Emergency Preparedness Analyst, Plant Support Branch J. D. Hanna, Resident Inspector, Callaway
Approved By:	G. M. Good, Chief, Plant Support Branch, Division of Reactor Safety
Attachment:	Supplemental Information

EXECUTIVE SUMMARY

Callaway Plant
NRC Inspection Report No. 50-483/99-10

A routine, announced inspection of the licensee's performance and capabilities during the full-scale, biennial exercise of the emergency plan and implementing procedures was performed. The inspection team observed activities in the control room simulator, technical support center, operations support area, and emergency operations facility.

Plant Support

- Overall, performance was good. The control room, technical support center, operations support area, and emergency operations facility successfully implemented key emergency plan functions including emergency classifications, protective action recommendations, notifications, and dose assessment.

- The control room staff's performance was very good. Accident detection, classification, and notification were exceptionally prompt and accurate. However, logkeeping in the control room was identified as a minor area for improvement. The shift supervisor exercised good command and control throughout the exercise. Thorough analysis of plant conditions allowed operators to anticipate further event degradation and take immediate corrective action (Section P4.2).

- The technical support center staff's performance was good. The emergency coordinator generally exhibited effective command and control. The licensee properly classified the emergency action levels in a timely manner. There were good communications within the technical support center and between the technical support center and the other emergency response facilities. The emergency coordinator conducted frequent, thorough briefings (Section P4.3).

- The operations support area staff's performance was generally good. Facility activation was orderly and timely. Team briefings were concise and informative and provided a complete overview of radiological conditions. Situation briefings for operations support area personnel were irregular. Emergency repair team tracking was generally effective. Some in-plant tasks were not reflected on the operations support tracking board. Some inplant emergency teams were unnecessarily delayed in responding to plant equipment failures (Section P4.4).

- The emergency operation facility staff's performance was generally good. Facility management and control were professional. Dose assessment was generally conducted and analyzed quickly and accurately. Notifications were conducted quickly and clearly using a computer-based system. Communications with offsite officials occurred frequently.

  While performance in the area of dose assessment was satisfactory, the logs recording field data were of poor quality containing numerous write-overs and line-outs. Six of the projected dose calculations did not use the correct field survey times. The dose assessment staff and the field teams failed to recognize that one simulated reading was

physically impossible and failed to obtain another reading. As a consequence, the superintendent of protective services had to interject in the scenario to prevent an undesired change to the protective action recommendations (Section P4.5).

- The scenario was sufficient to test onsite response capabilities and to drive the interaction between the licensee and offsite officials. Some aspects of exercise conduct and control detracted from the realism and training value of the exercise. The scenario did not challenge technical support center/operations support area team prioritization, personnel resources, or the team dispatch process. Some examples were noted of inappropriate controller instructions to a repair crew (Section P4.6).

- The postexercise critiques were thorough, open, and self-critical. The licensee identified good suggestions for improvement. The management critique was also self-critical as well as informative and detailed. There was good overlap between the NRC and licensee's observations. Overall, the critiques were effective in identifying areas in need of corrective actions (Section P4.7).

IV. Plant Support

P4 Staff Knowledge and Performance in Emergency Preparedness

P4.1 Exercise Conduct and Scenario Description (82301 and 82302)

The licensee conducted a full-scale, biennial exercise on September 13, 1999. The exercise was conducted to test major portions of the onsite (licensee) and offsite emergency response capabilities. The licensee activated its emergency response organization and all emergency response facilities. The NRC evaluated all phases of the licensee's response.

The Federal Emergency Management Agency evaluated the offsite response capabilities of the State of Missouri; the city of Fulton; and Callaway, Gasconade, Montgomery, and Osage counties. The Federal Emergency Management Agency will issue a separate report.

The exercise scenario was dynamically simulated using the licensee's control room simulator. Initial conditions were that the reactor was operating at 100 percent power, and all plant parameters were normal and stable. The licensee isolated and drained essential service water Train B on the previous shift to effect repairs on supply valves to the associated emergency diesel generator. The weather conditions were mild, with light winds from the southeast and no precipitation.

At 7:17 a.m., plant security called the control room and stated that there was a "confirmed" explosive device in the X-ray machine in Stores Building 1. As a result, a notification of unusual event was declared based on Emergency Action Level 3A, "Confirmed security event which indicates a potential degradation in the level of safety at the plant." The licensee evacuated personnel from the stores building and requested a bomb disposal unit from a local law enforcement agency.

At approximately 7:50 a.m., a leak in the reactor coolant system started. Containment atmosphere activity alarms and decreasing pressurizer levels alerted the operators to the condition at 7:53 a.m. After quantifying the leak as greater than 50 gpm, operators manually tripped the reactor at 7:55 a.m. The safety injection system was manually initiated at 7:58 a.m. After completing step four of Emergency Procedure E-0, the shift supervisor reviewed the emergency action level procedure and declared an alert based upon Emergency Action Level 2B, "A leak of coolant from the plant's nuclear reactor coolant system or damaged fuel rods in the plant's nuclear reactor." (Refer to Section P8.2 of this report regarding exiting Emergency Procedure E-0 and timely offsite notifications.)

Concurrently, with the manually initiated safety injection signal, the following conditions occurred:

- Containment atmosphere activity increased, indicating possible fuel damage.
- The size of the reactor coolant leak increased to approximately 3000 gpm.

- Emergency service water Pump A tripped on an overcurrent condition. This event caused all loads on the safety-related Bus NB01 to trip, thereby, stripping the bus. Emergency service water Pump B was already secured and the train drained for maintenance

At 8 a.m., the operators tripped all reactor coolant pumps due to low reactor coolant system pressure. Limited core cooling was achieved through the use of the normal charging pump, bleeding steam from the steam generators via the power operated relief valves, and using residual heat removal and safety injection Pump B. Ongoing problems with pump heat up rates prohibited operators from reestablishing full emergency core cooling flow through the remainder of the scenario. With limited core cooling, reactor vessel level indication dropped below 40 percent. At 8:42 a.m., the licensee declared a site emergency based on Emergency Action Level 2C, "A leak of coolant from the plant's nuclear reactor coolant system with damaged fuel rods in the nuclear reactor."

At approximately 9 a.m., the bomb disposal unit arrived on site, and at approximately 9:45 a.m., transferred the explosive device off site.

At 9:33 a.m., the operators and technical support center staff considered the loss of the containment barrier to be imminent. Consequently, a general emergency was declared based on Emergency Action Level 2E, "A loss of two radioactive fission-product barriers with probable loss of the third barrier." Approximately 5 minutes later, a containment penetration failed releasing containment effluent into the auxiliary building. Auxiliary building ventilation then discharged the filtered release out the unit vent.

The remainder of the exercise consisted of efforts to reduce the radiological release and to continue core cooling. Controllers terminated the plume phase of the exercise at 1:25 p.m., followed by recovery discussions.

P4.2 Control Room

a. Inspection Scope (82301-03.02)

The inspectors observed and evaluated the control room simulator staff as they performed tasks in response to the exercise scenario conditions. These tasks included event detection and classification, analysis of plant conditions, offsite agency notifications, internal and external communications, and adherence to the emergency plan and procedures. The inspectors reviewed applicable emergency plan sections, emergency implementing procedures, logs, checklists, and notification forms.

b. Observations and Findings

Operators properly responded to the report of a bomb in Stores Building 1 by security personnel. The shift supervisor reviewed the emergency action levels and determined that there was a confirmed explosive device within the protected area (notification of unusual event). The shift supervisor promptly briefed the control room and directed control room operators to inform plant personnel of the threat via a plant wide announcement.

Operators similarly responded very effectively to the reactor coolant system leak that commenced approximately 30 minutes later. Examples of conservative operator actions are as follows:

- Restoration of the emergency service water Train B (inoperable due to maintenance) was immediately initiated.

- Operators promptly located indications of containment leakage by identifying a failed containment pressure indicator which passed through an electrical penetration room. Elevated area radiation levels in the vicinity of the electrical penetration room confirmed the location.

The inspectors observed that the event declarations made from the control room were very prompt and properly classified. The licensee made the offsite agency notifications for the notification of unusual event and alert within the required time frame. Subsequent follow-up notifications were made approximately every 15 minutes. The licensee made the site emergency and general emergency notifications from the emergency operations facility.

The inspectors observed the control room operators analyze plant conditions and take corrective actions. During the event response, operations personnel monitored key parameters indicative of degrading plant conditions. These included: (1) increasing incore temperature and (2) decreasing reactor vessel level. Consequently, control room staff were able to anticipate problems and take immediate corrective action. The actions performed by operators significantly mitigated the accident. Accordingly, unplanned failures had to be introduced by drill controllers to ensure a plume release would occur. For example, heat up rates on emergency core cooling pumps were made artificially high to ensure they would be shut off before full core cooling could be established.

The shift supervisor exercised good command and control throughout the exercise. Emergency implementing procedures, abnormal operating procedures, and emergency operating procedures were used correctly. Operators remained focused on plant conditions during the exercise. The shift supervisor's transfer of command and control to the technical support center was good. The pretransfer briefing was thorough and succinct. The transfer was formally announced to control room staff.

The control room maintained communications with the technical support center throughout the exercise. The communicator informed the technical support center of changing plant conditions. The inspectors observed that the communications to the technical support center were made in a timely manner.

Personnel effectively used three-part communications throughout the exercise. Three-part communications involved: (1) information communicated by provider, (2) information restated by the receiver, and (3) information confirmed by the provider. Three-part communications were also used at the end of staff briefings to ensure priorities and assigned tasks were understood. The inspectors determined that the use of three-part communications in the control room was properly implemented.

Following completion of the exercise, the operations staff compiled the logs taken during the exercise. The inspectors noted the logs lacked sufficient detail to document the basis for decisions or recreate the sequence of shift events. This area for improvement was evident by the following examples:

- Control room supervisor logs were nonexistent during the extent of the scenario. An initial log entry was made at approximately 7:30 a.m. documenting the report of an explosive device in Stores Building 1. No further information was recorded.

- The reactor operator logs did not include the following information: (1) the transfer of emergency notification or emergency coordinator responsibilities, (2) the occurrence or subject of the frequent control room briefings, or (3) the reason actions were taken in response to plant conditions.

The shift supervisor often conferred with the control room staff to assess and respond to the event. Anticipatory actions were discussed and, where appropriate, preparatory actions were taken. The control room staff exhibited good teamwork and coordination. Staff briefings were conducted when conditions changed and prior to important evolutions. The inspectors determined that the briefings were conducted on a proper frequency.

c. Conclusions

The control room staff's performance was very good. Accident detection, classification, and notification were exceptionally prompt and accurate. However, logkeeping in the control room was identified as an area for improvement. The shift supervisor exercised good command and control throughout the exercise. Thorough analysis of plant conditions allowed operators to anticipate further plant problems and take immediate corrective action.

P4.3 Technical Support Center

a. Inspection Scope (82301-03.03)

The inspectors observed and evaluated the technical support center staff as they performed tasks necessary for response to exercise scenario conditions. These tasks included staffing and activation, accident assessment and event classification, personnel accountability, facility management and control, onsite protective action decisions and implementation, internal and external communications, assistance and support to the control room, and prioritization of mitigating actions. The licensee's technical support center and operations support area were collocated; independent command and control structures were not maintained. The latter facility is referred to as the operations support area. The inspectors reviewed applicable emergency plan sections, emergency implementing procedures, checklists, and logs.

b. Observations and Findings

The licensee promptly activated the technical support center. The technical support center was activated within 30 minutes of the alert declaration. Personnel signed in as

required and initiated the position checklists immediately upon arrival. Following a readiness briefing from the staff, the emergency coordinator informed the control room that the technical support center assumed emergency coordinator responsibilities.

The licensee established effective access controls to the technical support center. A security officer stationed at the technical support center entrance ensured personnel logged in and out as required. Personnel and equipment also passed through the portal monitor when entering the technical support center. The security officer ensured personnel had been briefed onsite radiological conditions before exiting the technical support center. Refer to Section F8.1 of this report concerning an exercise weakness in the area from a previous exercise.

The decision to send in a team to investigate and stop the release was unnecessarily delayed. The licensee also identified this area during the postexercise critique. The inspectors observed that the delay was due to the following conditions:

- The emergency coordinator did not ensure personnel aggressively addressed the issue.

- The licensee was unable to locate technical information on the containment penetration that was thought to be the release location.

- The licensee was not sure of the dose rate in the area and initially did not develop a plan to determine the dose rate.

The emergency coordinator held frequent and thorough briefings. During the briefings, the technical support center personnel discussed the following items:

- Plant systems status
- Repair team priorities
- Potential corrective actions
- Radiological release status
- Offsite dose projections

The emergency coordinator also held periodic conference calls with the control room and emergency offsite facility. This facilitated prioritization of corrective actions and response to changing plant conditions.

The technical support operation was very efficient. The collocation of the technical support center and operations support area allowed good coordination between the technical staff and inplant response teams. The team status board was kept up to date which provided current information to the emergency coordinator.

c. Conclusions

The technical support center staff's performance was good. The emergency coordinator generally exhibited effective command and control. The licensee properly classified the emergency action levels in a timely manner. There were good communications within the technical support center and between the technical support center and the other emergency response facilities. The emergency coordinator conducted frequent, thorough briefings.

P4.4 Operations Support Area

a. Inspection Scope (82301-03.05)

The inspectors observed and evaluated the operations support area staff as they performed tasks in response to the exercise scenario conditions. These tasks included response to control room requests, emergency response team dispatch, and emergency response team debriefing. The inspectors reviewed applicable emergency plan sections, procedures, checklists, and logs.

b. Observations and Findings

The operations support area was quickly activated with appropriate personnel who arrived within 3 minutes of the plant announcement to staff emergency facilities. The participants' names and craft were recorded on a separate sign-in board within the combined facility. Radios, dosimetry system equipment, health physics instrumentation, and other necessary equipment were in place. Health physics technicians established a continuous air sampler, activated the dosimetry system computers, provided facility dosimetry, and began instrument checking the radiation meters within 10 minutes of the staffing announcement.

The operations support area staff reported to the operations support coordinator. The emergency coordinator conducted facility briefings for coordinator-level positions, who then briefed their areas of responsibility. The operations support coordinator provided a timely and informative initial briefing for the operations support area. Continuing situation briefings for operations support staff were irregular in timing and content.

The emergency coordinator maintained the facility priorities on a status board in the technical support center portion of the facility. Priorities were clearly communicated to the operations support coordinator for implementation. The operations support coordinator was generally effective in initiating plant repair teams consistent with facility priorities. An exception was the team for plugging the breached penetration, which began briefing 2 hours and 9 minutes after the decision was made to form the team.

Thorough emergency team briefings were conducted prior to dispatch from the operations support area. Maintenance and radiation protection lead personnel provided the teams with the appropriate information so that the teams could properly assess equipment conditions, maintain low radiation doses, and effectively mitigate the scenario conditions. The radiation protection briefings provided complete overviews of current and expected radiological conditions.

Emergency repair teams dispatched from the operations support area were tracked on an erasable board in the technical support center part of the facility. This board was generally accurate and maintained with current information. The following exceptions were observed: (1) the board was not updated to show that one health physics technician was redirected from the health physics access area to perform an air sample in the switchgear room or reflect when the task was canceled and (2) the board was not updated to show the dispatch or return of the chemistry technician collecting a sample from the postaccident sampling system (actual operation of the sampling system was simulated). The operations support area tracking board did not track that personnel were assigned or that the task was completed. The licensee does not assign equipment operators to the operations support area and the tracking board did not include information about tasks assigned to operations.

The inspectors observed that the process for dispatching emergency repair teams was occasionally cumbersome. Team 1 required 2 minutes to exit through security, re-entered the facility after obtaining tools, and required 4 additional minutes to re-exit through security. In addition, the team received a second briefing at the door covering essentially the same information as in their initial briefing. Approximately 1 hour and 8 minutes elapsed between the decision to form Teams 2 and 3 and its dispatch from the facility. A health physics technician in the plant was told that a second technician would be dispatched with an air sampler. However, the second technician was not dispatched.

The inspectors observed examples of poor communications between the health physics technician assigned to an emergency repair team and the maintenance personnel on the team. The health physics technician did not inform team electricians that radiation levels had been detected and were increasing for 17 minutes. Dose information was initially brought to the electrician's attention when the team's electrical controller directly questioned the health physics technician about radiation levels. The health physics technician told the health physics coordinator (in the technical support center) via a plant telephone that he had indications of airborne radioactive material and area contamination but did not provide this information to the team's electricians.

c. Conclusions

The operations support area staff's performance was generally good. Facility activation was orderly and timely. Team briefings were concise and informative and provided a complete overview of radiological conditions. Situation briefings for operation's support area personnel were irregular. Emergency repair team tracking was generally effective. Some in-plant tasks were not reflected on the operations support tracking board. An instance was observed where support was requested for a technician in the plant but was not dispatched. Some inplant emergency teams were unnecessarily delayed in responding to plant equipment failures.

P4.5 Emergency Operations Facility

a. Inspection Scope (82301-02.04)

The inspectors observed the emergency operation facility staff as they performed tasks in response to the exercise. These tasks included facility activation, notification of state and local response agencies, development and issuance of protective action recommendations, dose projections, field team control, and direct interactions with offsite agency response personnel. The inspectors reviewed applicable emergency plan sections and procedures, forms, dose projections, logs, and press releases.

b. Observations and Findings

In accordance with the licensee's emergency plan, the emergency operations facility was staffed following the alert declaration at 7:59 a.m. Personnel quickly and efficiently manned their positions, tested equipment, and established communications. Dose assessment, protective actions recommendations, and offsite communications responsibilities were transferred from the control room simulator at 8:24 a.m.

Facility management and control were generally very good. The facility manager (recovery manager) provided direction to the staff and also provided frequent briefings of relevant information. The protective measures, logistical support, and offsite liaison coordinators kept their personnel focused on their tasks. Facility logs were generally kept neatly and were complete.

The licensee correctly assessed and integrated information from the onsite instruments, field measurements, and onsite meteorological systems. However, the field data logs, recorded at the facility, had numerous write-overs and line-outs. Several sheets did not contain complete information. Additionally, the staff failed to input the correct survey data time in the dose projection program for at least six calculations. This error affected the projected dose to a degree but did not adversely affect the protective actions recommendations in that the licensee did not make an inadequate recommendation.

The dose assessment staff also failed to recognize that a significant error provided in the simulated field data was physically impossible. A controller erroneously provided the field team a survey reading that was 25 times higher than the instrument's highest range. This value was reported to include beta radiation (window open); however, the reading was taken from inside of a closed vehicle which would have shielded out any beta radiation. Additionally, the instrument was designed to be used to detect beta radiation and not to measure dose rate. Because of this error and the assessment team's failure to require another survey, the superintendent of protective services had to interject in the scenario to prevent an undesired change to the protective action recommendations.

Protective action decision making generally involved the recovery manager, the protective measures coordinator, the dose assessment coordinator, the plant assessment coordinator, state representatives from the emergency management agency, and from the department of health. The licensee appropriately considered current plant status, expected duration of the release, current and projected weather conditions, and local factors.

Notifications and communications by emergency operation facility personnel were generally good. Notifications were made primarily using a computer program which linked the licensee's computer to similar computers located in the offices of state and local officials. The communicator would receive permission to send the notification from the recovery manager and then would transmit the form. The communicator received positive receipt indication when the receiving location acknowledged the transmission. Additionally, the program supplied connection and transmission status of all the remote locations. Transmission of these notifications occurred in less than 10 minutes from the condition requiring the notification. The communicator used traditional telephone communications to provide notification to two of the offices where the computer link was not operating and to the NRC (simulated).

Communications within the emergency operations facility were generally clear and unambiguous. Noise was kept to a minimum, and the conversations were professional. The recovery manager conducted frequent discussions with state and local officials to provide clear explanations of current status and projected conditions. Additionally, state officials from the emergency management agency and the department of health were included in discussions concerning dose assessment and protective action recommendations and in the frequent status briefings conducted with the recovery manager and the coordinators.

c. Conclusions

Performance by the emergency operation facility staff was generally good. Facility management and control were professional. Dose assessment was generally conducted and analyzed quickly and accurately. Notifications were conducted quickly and clearly using a computer-based system. Communications with offsite officials occurred frequently.

While performance in the area of dose assessment was satisfactory, the logs recording field data were of poor quality containing numerous write-overs and line-outs. Six of the projected dose calculations did not use the correct field survey times. The dose assessment staff and the field teams failed to recognize that one simulated reading was physically impossible and failed to obtain another reading. As a consequence, the superintendent of protective services had to interject in the scenario to prevent an undesired change to the protective action recommendations.

P4.6 Scenario and Exercise Control

a. Inspection Scope (82301-03.03)

The inspectors made observations during the exercise to assess the challenge and realism of the scenario and to evaluate exercise control.

b. Observations and Findings

The licensee submitted the exercise objectives and scenario for NRC review on June 14 and July 14, 1999, respectively. The inspectors discussed minor questions related to the exercise and objectives with licensee staff on August 11 and 16, 1999, respectively. were resolved by the licensee. The exercise objectives and scenario were reviewed and considered adequate to meet emergency plan requirements (reference NRC letter to licensee dated August 18, 1999).

The following aspects of the exercise design contributed to performance problems during the exercise:

- Controllers had to quickly develop and introduce artificialities (e.g., impossibly high heat up rate on a safety injection pump) into the scenario to ensure that the core was damaged, and hence a general emergency reached.

- The simulator-driven onsite radiation instrument readings were higher than desired for the offsite scenario. As a consequence, the projected dose assessments performed using the onsite instruments were significantly higher than those performed using field survey data which caused some confusion within the emergency operations facility.

- The scenario did not challenge technical support center/operations support area personnel. The scenario did not include many opportunities to dispatch emergency repair teams into the plant to mitigate plant conditions because of the limited number of equipment failures. The scenario did not challenge personnel resources, team prioritization, or the team dispatch process.

- The following information was not provided for the health physics access area: area radiation dose rates, operability of personnel contamination monitors, determination of personnel contamination, and guidelines for controller decontamination.

- Inconsistencies in the sequencing and timing of failed equipment indications, containment radiations readings, and penetration room radiation readings created significant confusion in the technical support center and significantly delayed sending out a team in order to determine the location of the containment breach.

- The electrical controller had difficulty in determining some information about breaker conditions from the descriptive text of Mini-Scenario 4.

In addition to the exercise planning and preparation issues discussed above, the following aspects of exercise control detracted from the realism and training value of the exercise:

- A field monitoring team controller erroneously introduced an impossibly high reading into a field survey which would have caused an unintended increase in the protective action recommendations. The superintendent of protective services had to interject in the scenario (see section P4.5).

- The electrical controller initially told the team that they were not required to bring a megger instrument to the work site, though exercise ground rules required instruments to be present in order to obtain information.

- The controller provided results for the megger instrument without requiring the team to demonstrate that the instrument was operational or requiring the team to demonstrate its use on the electrical breaker mock-up.

- The controller did not require the team to use available safety equipment when manipulating the electrical breaker mock-up, even though exercise ground rules did not permit simulation of the safety equipment.

- The controller provided information about Breaker 0115 while the team was standing in front of Breaker 0112; the information could not have been read from the team's position when it was provided.

- A health physics controller provided personnel contamination information in the health physics access area which could not have been detectable given the postulated background radiation levels.

c. Conclusions

The scenario was sufficient to test onsite response capabilities and to drive the interaction between the licensee and offsite officials. Some aspects of exercise conduct and control detracted from the realism and training value of the exercise. The scenario did not challenge technical support center/operations support area team prioritization, personnel resources, or the team dispatch process. Some examples were noted of inappropriate controller instructions to a repair crew.

P4.7 Licensee Self-Critique

a. Inspection Scope (82301-03.13)

The inspectors observed and evaluated the licensee's postexercise facility critiques and the formal management critique on September 16, 1999, to determine whether the process would identify and characterize weak or deficient areas in need of corrective actions.

b. Observations and Findings

Postexercise critiques in all facilities were open, self-critical, and thorough. Participants, controllers, and evaluators participated in the critiques. Comments were both positive and self-critical. The exercise participants identified areas for improvement.

During the September 16, 1999, management critique, the superintendent of protective services presented a synopsis of preliminary comments from participants, controllers, and evaluators. The comments included corrective action items in the facility objectives, drill objectives, and position requirements areas. There was good overlap between the items identified by the licensee's evaluation team, which included the participants, controllers, and evaluators, and those identified by the NRC inspection team.

c. Conclusions

The postexercise critiques were thorough, open, and self-critical. The licensee identified good suggestions for improvement. The management critique was also self-critical as well as informative and detailed. There was good overlap between the NRC and licensee's observations. Overall, the critiques were effective in identifying areas in need of corrective actions.

P8 **Miscellaneous Emergency Preparedness Issues (92904)**

P8.1 (Closed) Inspection Followup Item 50-483/9713-02: exercise weakness for the failure to establish effective technical support center access controls. During the 1997 exercise, personnel left the technical support center without being logged out. Additionally, some personnel were not briefed on radiological conditions when leaving the technical support center following the start of the radiological release. The corrective actions for this weakness included:

- Revising Emergency Plan Implementing Procedure EIP-ZZ-00240, "Technical Support Center Operations," to include specific instructions to check out with security and obtain a brief, if a release has occurred.

- Revising the security post instructions and sign out sheet to ensure personnel are accounted for and have been briefed on radiological conditions, if required.

The inspectors observed personnel exiting and entering the technical support center. All personnel were logged by security and had received the appropriate radiological hazards briefing. The inspectors had no further concerns.

P8.2 (Closed) Inspection Followup Item 50-483/9814-02: exercise weakness for failure to classify an alert in a timely manner. During the simulator walkthroughs conducted in 1998, an alert was not declared by the licensee until 38 minutes after plant conditions required such notification. The inspectors determined that Procedure ODP-ZZ-00025, "Emergency Operating Procedure Usage," Revision 3, required exiting the reactor trip response procedure prior to event classification. To improve performance in this area, the licensee revised the emergency operating usage procedure and conducted training

on the revised practice. Changes to emergency operating usage procedure satisfactorily ensured emergency declarations were not delayed. During this exercise, the licensee exited the reactor trip procedure within 4 minutes and made prompt notifications on all emergency classifications (see Sections P4.2 and P8.1 of this report).

V. Management Meetings

X1 Exit Meeting Summary

The inspectors presented the inspection results to members of licensee management on September 16, 1999. The licensee acknowledged the facts presented. No proprietary information was identified.

The Federal Emergency Management Agency scheduled a public meeting on September 15, 1999, to discuss the exercise results. The Federal Emergency Management Agency and NRC made presentations to the licensee and State of Missouri personnel in attendance.

ATTACHMENT

SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

Licensee

G. Randolf, Vice President and Chief Nuclear Officer
R. Affolter, Manager, Callaway Plant
J. Blosser, Manager, Operations Support
M. Evans, Superintendent, Protective Services
J. Laux, Manager, Quality Assurance
M. Taylor, Manager, Nuclear Engineering

LIST OF INSPECTION PROCEDURES USED

IP 82301	Evaluation of Exercises at Power Reactors
IP 82302	Review of Exercise Objectives and Scenarios for Power Reactors
IP 92904	Followup - Plant Support

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None

Closed

50-483/9713-02	IFI	Exercise weakness - failure to establish effective technical support center access controls (Section P8.1)
50-483/9814-02	IFI	Exercise weakness - failure to classify an alert in a timely manner (Section P8.2)

Discussed

None

LIST OF DOCUMENTS REVIEWED

Emergency Implementing Procedures

EIP-ZZ-C0010	Emergency Operations Facility Operations	Revision 20
EIP-ZZ-00101	Classification of Emergencies	Revision 23
EIP-ZZ-00102	Emergency Implementing Actions	Revision 23
EIP-ZZ-00240	Technical Support Center Operations	Revision 23

ODP-ZZ-00025	Emergency Operating Procedure Usage	Revision 3
EIP-ZZ-00200	Augmentation of the Emergency Organization	Revision 8
EIP-ZZ-00201	Notifications	Revision 32
EIP-ZZ-00212	Protective Action Recommendations	Revision 16
EIP-ZZ-00220	Emergency Team Formation	Revision 11

ODP-ZZ-00025	Emergency Operating Procedure Usage	Revision 3
EIP-ZZ-00200	Augmentation of the Emergency Organization	Revision 8
EIP-ZZ-00201	Notifications	Revision 32
EIP-ZZ-00212	Protective Action Recommendations	Revision 16
EIP-ZZ-00220	Emergency Team Formation	Revision 11