ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION REGION IV

Docket No.:	50-483	
Livense No.:	NPF-30	
Report No.:	50-483/97-13	
Licensee:	Union Electric Company	
Facility:	Callaway Plant	
Location:	Junction Hwy, CC and Hwy, O Fulton, Missouri	
Dates:	August 11-15, 1997	
Team Leader:	Gail M. Good, Senior Emergency Preparedness Analyst	
Inspectors:	Thomas H. Andrews Jr., Radiation Specialist J. Vincent Everett, Radiation Specialist Michael C. Hay, Radiation Specialist	
Approved By:	Blaine Murray, Chief, Plant Support Branch Division of Reactor Safety	

ATTACHMENT: Supplemental Information

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EXECUTIVE SUMMARY

Callaway Plant NRC Inspection Report 50-483/97-13

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, the control room staff's performance was generally good. Events were correctly analyzed and classified. The shift technical advisor did not fully understand conditions to meet one emergency action level. An exercise weakness was identified for failure to make timely offsite agency notifications. The request for offsite support was delayed because the telephone number could not be located. Command and control were good; three-part communications were consistently used, and briefings were frequent (Section P4.2).
- Overall, the technical support center staff's performance was generally satisfactory. Personnel effectively prioritized actions needed to mitigate scenario emergency conditions. Briefings were frequent and comprehensive. One of two emergency classifications was delayed. An exercise weakness was identified for failure to establish effective access controls. As a result, continuous accountability was not maintained and radiological precautions were not communicated to some personnel (Section P4.3).
- Overall, the operations support area staff's performance was very good. Assigned emergency response personnel effectively formed and dispatched emergency response and repair teams as directed by the technical support center. Teams were properly briefed concerning work tasks and protective measures to ensure safety. Health physics coverage for teams was commensurate with encountered radiological conditions. Communications between emergency teams and the operations support area were very good (Section P4.4).
- Overall, the emergency operations facility staff's performance was generally good. Offsite agency notifications were timely. Inaccurate information concerning offsite doses was approved and communicated on two occasions; thyroid and total effective dose equivalent values were transposed. Information flow and control were ineffective: briefings were infrequent, a protective action recommendation update was not properly discussed or controlled, and the event chronology board was not maintained. With one exception, dose assessment and field team control activities were properly performed to support protective action recommendations. Interactions with offsite agency representatives were effective (Section P4.5).

- The original exercise scenario was not acceptable because there were significant similarities between the exercise and practice drill scenario events. The final scenario was sufficiently challenging to test onsite response capabilities. Exercise control was sufficient (Section P4.6).
- Post-exercise critiques were thorough, open, and self critical; good suggestions for improvement were identified. The management critique was detailed, informative, open, and self critical. There was good overlap between the licensee and NRC evaluation teams' observations. Overall, the critique process effectively identified issues in need of corrective action (Section P4.7).

.3.

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 August 12-13, 1997. Day 1 consisted of plume pathway elements, and Day 2 consisted of ingestion pathway elements. 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 the licensee's plume phase 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 indicated that the reactor was operating at 100 percent power and all plant parameters were normal and stable. An increase in reactor coolant activity, attributed to leaking fuel rods, was observed on the previous shift. Safety Injection Pump A was out-of-service for maintenance due to a vibration problem. Welding was being performed on ladders in the NBO2 switchgear room. The area was under a tornado watch.

At 7:30 a.m., a fault occurred on Electrical Bus NB02 concurrent with alarms on the station fire alarm panel. Following these conditions, a fire watch member in the diesel generator building called the control room simulator to report smoke and the actuation of the NB02 switchgear room halon system. As a result, an alert was declared based on Emergency Action Level 3F, "Fire affecting the operability of plant safety equipment required to establish or maintain safe shutdown."

The fire brigade was dispatched to the NBO2 switchgear room. Upon arrival, the fire marshall contacted the control room to request outside assistance from the South Callaway Fire Department. The fire was reported out at 7:50 a.m.

With Safety Injection Pump A out-of-service due to maintenance, and Safety Injection Pump B out-of-service due to the fault on Electrical Bus NB02, the decision was made to shutdown the plant. The shutdown started at 3 percent per hour. The shutdown rate was based on previous input from reactor engineering personnel after the impact of the simulated leaking fuel was assessed. After discussions with the technical support center, the shutdown rate was increased to 20 percent per hour. At 8:15 a.m., the control room was notified of a confirmed tornado sighting northeast of Mokane, Missouri. Security personnel contacted the control room to report that a tornado was approaching the plant site. The simulated tornado touched down in the owner controlled area causing damage to the condensate storage tank and various site structures.

The leak in the condensate storage tank caused concern regarding the ability to cool the plant following shutdown. After discussing options with the technical support center, the decision was made to manually trip the reactor so the remaining condensate storage tank inventory could be used to remove decay heat.

At 8:30 a.m., operators unsuccessfully attempted to manually trip the reactor. At 8:31 a.m., the turbine was manually tripped. The automatic reactor trip generated by the turbine trip did not occur. These conditions prompted a site emergency (the licensee used this term instead of site area emergency) declaration based on Emergency Action Level 4T, "Failure of reactor protection system instrumentation to complete or initiate an automatic reactor trip once a reactor protection system setpoint has been exceeded and manual trip was not successful." At 8:33 a.m., the reactor was successfully tripped by operator actions away from the reactor control console.

A small-break, loss-of-coolant accident occurred at approximately 8:30 a.m. Reactor coolant system inventory was released to containment, but system pressure remained high. The only way to add inventory was via the normal charging pump. Due to safety injection signal actuation, only seal water injection was possible using the normal charging pump. This condition was insufficient to keep the core cooled.

Since the coolant makeup was insufficient to keep the core adequately cooled, core exit thermocouple temperatures increased. Containment hydrogen and radiation levels, combined with the core exit thermocouple readings, indicated that significant core damage had occurred. At 9:30 a.m., hydrogen levels increased to a point where ignition occurred, causing a sharp increase then decrease in containment pressure. The hydrogen burn led to the failure of the containment mini-purge inner isolation damper and rupture of the ventilation duct upstream of the outer isolation damper. This condition created a release path to the environment through the auxiliary building and unit vent. A general emergency was declared based on Emergency Action Level 2E, "A loss indicator from any two barriers and <u>any</u> indicator from the third."

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 approximately 1:30 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 responded properly to the Electrical Bus NB02 fault and the diesel generator building fire alarm. Operators sounded the station fire alarm and dispatched the fire brigade to the affected location. Following the fire report, the shift technical advisor began to review the emergency action levels. The shift technical advisor identified two potential classifications based on the plant conditions.

The first emergency action level involved a fire lasting longer than 15 minutes (notification of unusual event). The shift technical advisor informed the shift supervisor that the time remaining on the 15-minute clock was being tracked.

The second emergency action level involved a fire affecting the operability of safety systems required for safe shutdown of the plant (alert). The indications for this emergency action level referred to a fire in certain areas of the plant, including the diesel generator building, and visible damage to safety equipment required for safe shutdown.

The shift technical advisor asked the shift supervisor if there actually was a fire. The shift supervisor concluded that there was a fire because the caller reported smoke and halon system actuation. The shift technical advisor then asked if anyone observed visible damage to safety equipment. The shift supervisor pointed out that the Electrical Bus NBO2 fault coincided with the fire alarm and that the bus was assumed to be damaged because the fault could not be reset. Since the bus was used to power safety equipment, the latter portion of the emergency action level was satisfied.

However, the shift technical advisor was not sure that the alert emergency action level applied. Although the questions asked by the shift technical advisor were for clarification and interpretation, rather than to prompt a decision, the inspectors determined that the shift technical advisor did not demonstrate good understanding of the fire alert emergency action level. The inspectors observed several programmatic complications associated with offsite agency notifications following the alert declaration. The combined effect inappropriately and unnecessarily delayed offsite agency notifications. Inspectors made the following observations:

 The alert declaration time was logged when the control room announcement was made (7:43 a.m.) rather than when the shift supervisor made the decision to declare the alert (7:41 a.m.). The shift supervisor was distracted by other activities for 2 minutes.

Pertinent to this observation, Appendix 1 to NUREG-0654/FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Revision 1, states that, "The time [prompt notification] is measured from the time at which operators recognize that events have occurred which make declaration of an emergency class appropriate." Accordingly, the inspectors determined that the alert was declared at 7:41 a.m. when the shift supervisor recognized that the conditions for an alert were met.

- Control room personnel did not begin offsite notification form preparation until a communicator arrived (about 10 minutes after the announcement). The licensee stated that the communicator was "pre-positioned" within the training center, near the control room simulator. The communicator's arrival was delayed to account for the normal travel time to the control room from the individual's normal work location.
- The communicator was not familiar with the SENTRY software (a new electronic system for making offsite notifications) and did not know where to obtain information needed to complete the form (meteorological conditions and emergency action level text). As a result, several more minutes elapsed before the restlications were transmitted electronically at 7:58 a.m.

The inspectors determined that the above programmatic factors caused a delay in making timely offsite agency notifications (i.e., within the 15-minute regulatory limit). In response, the licensee considered the notification timely based on the alert declaration log entry (15 minutes versus 17 minutes). The inspectors concluded that there were programmatic reasons for the delays: (1) a lack of clear understanding about when the notification period starts, (2) the use of communicators who were not stationed in the control room, and (3) a lack of familiarity with the new electronic notification system. Due to the programmatic factors, the inspectors identified the failure to make timely offsite agency notifications as an exercise weakness (50-483/9713-01).

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At 7:43 a.m., the fire brigade requested assistance from the offsite fire department. The call from the control room to request offsite assistance was delayed approximately 5 minutes because the shift technical advisor could not find the telephone number for the local fire department. Under certain circumstances, such a delay could have an adverse effect on the facility and its personnel.

The shift supervisor exercised good command and control throughout the exercise. Emergency implementing procedures, abnormal operating procedures, and emergency operating procedures were used correctly. Command and control was effectively transferred to the technical support center, and the transfer of command and control was formally announced.

The technical support center was kept informed of changing plant conditions through the use of a liaison communicator. The inspectors determined that communications to the technical support center were made in a timely manner.

Personnel used three-part communications throughout the exercise. Three-part communications involve: (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.

The shift supervisor often conferred with the control room staff to assess and control the event. Anticipatory actions were discussed and, where appropriate, preparatory actions were taken. The control room staff exhibited very 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.

Following the completion of the exercise, the operations staff compiled logs from the various notes taken during the exercise. Log forms were complete and well prepared. The inspectors determined that the control room logkeeping process was good.

c. <u>Conclusions</u>

Overall, the control room staff's performance was generally good. Events were correctly analyzed and classified. The shift technical advisor did not fully understand conditions to meet one emergency action level. An exercise weakness was identified for failure to make timely offsite agency notifications. The request for offsite support was delayed because the telephone number could not be located. Command and control were good; three-part communications were consistently used, and briefings were frequent.

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 assement and event classification, NRC notifications, 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 center 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, chricklists, and logs.

b. Observations and Findings

The technical support center was promptly activated. Personnel arrived within minutes of the alert public address announcement and initiated position checklists. Within 30 minutes, the emergency coordinator was briefed on simulated emergency conditions, all key personnel were present, and the facility activation checklist was completed by the administrative group. Upon verification of center readiness, the emergency coordinator informed the control room that the technical support center was assuming emergency coordinator responsibilities.

Technical support center access controls were established but were periodically ineffective in maintaining positive control of those who exited. A security officer was assigned to control center access and ensure that all personnel who entered the center walked through the portal monitor. Personnel who exited the center were logged out by the security officer.

Although the process worked most of the time, when the security officer interfaced with the administrative group or the security coordinator, opportunities occurred for personnel to exit the center without being noticed by the security officer. During the exercise, at least three individuals left the technical support center without logging out with the security officer. As a result, continuous accountability was not maintained.

In addition, there was no process to establish and communicate radiological precautions to those who exited the center once the radiological release started (except inplant response team members). As a result, the three individuals who left the center were not informed of areas to avoid, routes to take, or personal protective measures. In a related matter, the inspectors observed limited coordination with security personnel concerning radiological precautions; however, the licensee informed the inspectors that radiological precautions were taken for

security personnel. Due to the impact on personnel safety, the failure to establish effective technical support center access controls was identified as an exercise weakness (50-483/9713-02).

Overall, the technical support center layout provided an efficient work environment. The collocation of the technical support center and operations support area facilitated close coordination between the technical staff and inplant response team formation and control. A team status board was kept current and provided information to the emergency coordinator concerning dispatched teams.

However, provisions for dealing with contaminated personnel, including returning inplant response teams, appeared limited. Existing plans included decontaminating personnel in the nearby service building. The path between the service building and technical support center required travel outside the buildings. If the area was contaminated, personnel who traversed the area to get to the technical support center would be contaminated and would have to be decontaminated prior to entry.

Command and control in the technical support center were effective. The emergency coordinator maintained focus on key activities by establishing priorities and monitoring progress. Briefings were frequent and comprehensive. The technical assessment coordinator effectively interacted with the emergency coordinator concerning plant conditions. The technical staff appropriately monitored emergency action level parameters and advised the technical assessment coordinator of adverse conditions and parameters that could result in emergency classification upgrades.

Although the general emergency declaration was correct and timely, the site emergency declaration was delayed due to confusion concerning the automatic reactor trip. The conditions for a site emergency existed at 8:31 a.m. when the control room announced over the public address system that the reactor failed to trip. The technical staff reviewed the emergency action levels and determined that conditions for a site emergency were met based on Emergency Action Level 4T. However, the emergency coordinator questioned whether the automatic trip portion of the emergency action level had been satisfied.

As discussed in Section P4.1 above, operators unsuccessfully attempted to manually trip the reactor then manually tripped the turbine. The automatic reactor trip generated by the turbine trip did not occur. Upon further evaluation, the technical staff confirmed that the automatic trip portion of the emergency action level was met because the automatic trip caused by the manual turbine trip was not successful. The site emergency was declared at 8:46 a.m., 15 minutes after emergency action level conditions existed.

Although the 15-minute declaration was not considered untimely, inspectors did consider it to be an unnecessary delay since information was available to help clarify the emergency action level conditions. Inspectors noted that involved technical support center personnel did not consult the emergency action level indications bases (Attachment 2 to Procedure EIP-ZZ-0101, "Classification of Emergencies," Revisio: 20) during classification discussions. The bases document stated that an, "Automatic and manual trip are not considered successful if action away from the reactor control consols was required to scram the reactor." After the turbine trip failed to produce an automatic trip, operator actions away from the reactor control console were necessary to triv the reactor. The licensee acknowledged the value of the bases document in situations where emergency action level wording was questioned.

c. <u>Conclusions</u>

Overall, the technical support center staff's performance was generally satisfactory. Personnel effectively prioritized actions needed to mitigate scenario emergency conditions. Briefings were frequent and comprehensive. One of two emergency classifications was delayed. An exercise weakness v as identified for failure to establish effective access controls. As a result, continuous accountability was not maintained and radiological precautions were not communicated to some personnel.

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 cosponse to the scenario conditions. These tasks included functional staffing, providing support to operations, and inplant emergency response team coordination. The licensee's technical support center and operations support center 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, logs, checklists, and forms.

b. Observations and Findings

The operations support area was properly staffed and ready to support emergency response efforts shortly after the alert declaration. Upon arrival, craft personnel signed in on a roster board and reported to an adjacent room to await team assignment.

The operations support coordinator ensured that teams were properly formed and briefed to support technical support center requests. During briefings, team members were provided very good instructions concerning assigned task scope and safety precautions. Safety precautions included required radiological protective equipment and clothing, appropriate routes, and stay times for teams who would encounter potentially hazardous radiation areas.

Inplant response teams demonstrated very good proficiency and expertise in carrying out assigned duties. Teams made timely and accurate assessments of damaged components and actually withdrew tools and materials from the warehouse for repair activities.

Good communications were maintained between the emergency response teachs and the operations support area. Radios were used as the primary means; however, telephone and gaitronic communications were also available. Prior to dispatch, the operations support area coordinator established a contact interval for each team to report its status. Contact intervals varied in length depending on task priority and potential hazards.

Health physics coverage was appropriate for each team assigned to perform work in a radiologically hazardous environment; a health physics technician was assigned to each team. The health physics technician ensured that each team member wore proper radiological protective equipment and clothing and kept toum member exposures as low as is reasonably achievable (ALARA) by continuously assessing areas to identify low dose waiting areas.

c. Conclusions

Overall, the operations support area staff's performance was very good. Assigned emergency response personnel effectively formed and dispatched emergency response and repair teams as directed by the technical support center. Teams were properly briefed concerning work tasks and protective measures to ensure safety. Health physics coverage for teams was commensurate with encountered radiological conditions. Communications between emergency teams and the operations support area were very good.

P4.5 Emergency Operations scility

a. Inspection Scope (82301-03.04)

The inspectors observed the emergency operations facility's 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 assessment and coordination of field monitoring teams, and direct interactions with offsite agency response personnel. The inspectors reviewed applicable emergency plan sections, emergency implementing procedures, logs, notification forms, and dose projections.

b. Observations and Findings

The emergency operations facility was promptly staffed and activated following the alert declaration. Upon arrival, personnel obtained and implemented position checklists. Specific tasks included establishing communication links, determining

facility habitability, and synchronizing the facility clock. Responsibilities for offsite agency notifications and dose projections were transferred to the emergency operations facility within 30 minutes of the alert declaration. The transfer was systematic.

Although offsite agency notifications were made within regulatory limits, inaccurate and unclear information was transmitted to offsite agencies via SENTRY notification message forms. The following examples were observed:

- Notification forms sent at 9:48 and 10:07 a.m. contained incorrect total effective dose equivalent and thyroid doses (the doses were transposed). The forms incorrectly indicated that total effective dose equivalent protective action guides were exceeded at 10 miles. Protective action recommendations shown on the form were correct for the actual projected doses. Facility personnel later recognized the mistake and appropriately informed the offsite agencies of the errors.
- Decimal points were not clearly displayed on printed notification forms, and the note on the first notification form was not fully displayed. As a result, offsite agency representatives had to call and request clarification.
- The current time indicated on notification forms was not consistent with the synchronized clock in the facility (3-minute discrepancy). As a result, went reconstruction would have been hampered.

Information flow and control within the facility were ineffective at times and degraded the facility's ability to perform its function. Inspectors observed the following:

There were no facility briefings between 8:12 - 11:10 a.m. and 11:10 a.m. -1:30 p.m. The site and general emergencies were both declared during the first time period. As a result, important information was not available to all facility personnel. Examples of information that was not shared included the status of offsite protective actions, weather forecasts (needed for protective action recommendation formulation), and radiological release status (when stopped).

The most significant example involved poor communications within the dose assessment area. The field team communicator determined that field monitoring team results indicated the need to expand the affected sectors. This information was inappropriately discussed wirk the state (the state and utility field team communicators were in close proximity) before it was authorized by the recovery manager. The correct path would have been: dose assessment coordinator-protective measures coordinator-recovery manager). The inspectors acknowledged that the situation was exacerbated by controller injects concerning potentially incorrect offsite field monitoring data.

- The event chronology board was not updated after 9:03 a.m. Only seven entries were made during the exercise. As a result, facility personnel were unable to quickly determine emergency status. Information access limitations were compounded by the lack of facility briefings.
- Plant announcements were barely audible in the emergency operations facility. During some announcements, facility personnel stopped to listen; however, this was not the rule.

With the exception of the communication break discussed above, dose assessment and field team control activities were effectively performed to support protective action recommendation formulation. Numerous dose projections were calculated using unit vent monitor readings, field monitoring team data, and worst-case predictions. Utility and state field monitoring teams were effectively used to verify dose projections and establish radiological plume boundaries. Protective action recommendations were correctly formulated and promptly communicated to offsite authorities. On one occasion, there was some confusion regarding the boundary of one offsite evacuation zone due to differences in facility emergency planning zone maps. Inconsistencies were appropriately resolved during the exercise.

Interactions with offsite response teams were good. Upon arrival, the state and NRC teams were briefed on emergency status. When time permitted, the state was consulted prior to issuing protective act on recommendations.

Recovery discussions were held following the plume phase portion of the exercise. Key emergency operations facility, technical support center, and NRC response team personnel participated in the discussions. Participants discussed out-ofservice equipment, the arrival of outside support personnel, shift schedules, activities in progress (tornado damage walkdown), radiation levels in containment, and followup measures for personnel who received simulated exposures. The recovery discussions were comprehensive and detailed.

c. Conclusions

Overall, the emergency operations facility staff's performance was generally good. Offsite agency notifications were timely. Inaccurate information concerning offsite doses was approved and communicated on two occasions; thyroid and total effective dose equivalent values were transposed. Information flow and control were ineffective: briefings were infrequent, a protective action recommendation update was not properly discussed or controlled, and the event chronology board was not maintained. With one exception, dose assessment and field team control activities were properly performed to support protective action recommendations. Interactions with offsite agency representatives were effective.

P4.6 Scenario and Exercise Control

a. Inspection Scope (82301 and 82302)

The inspectors evaluated the exercise to assess the challenge and realism of the scenario and exercise control.

b. Observations and Findings

The licensee submitted the exercise objectives and scenario for NRC review on June 12, 1997. The results of the NRC's review were documented in a July 25, 1997, letter to the licensee. As discussed in the letter, the exercise objectives were not submitted 90 days prior to the exercise, as expected, and the exercise scenario was not acceptable. There were significant similarities between the exercise and practice drill scenario events. In response, the licensee revised the scenario and submitted a complete scenario package on August 1, 1997. The final scenario was sufficiently challenging to test onsite exercise objectives, and exercise participants did not have prior knowledge of scenario events.

The following aspects of exercise conduct and control detracted from the realism and training value of the exercise and were considered areas for improvement:

- Operation of the technical support center ventilation system was oversimulated. Participants did not operate the system in the recirculation mode throughout the exercise (to avoid depleting the charcoal filter) to test continued heating/cooling capabilities. The system appeared to be challenged in the normal mode after several hours of full center staffing.
- Controllers occasionally demonstrated unnecessary interactions with emergency response teams. For example, one controller showed an area radiation survey map to a radiation protection technician, and another controller prompted a team to complete its assigned tasks (team assigned to assess condensate storage tank damage).
- Some prestaging by security personnel occurred at the technical support center and emergency operations facility. One security officer assigned to provide technical support center access control arrived before the alert was declared. Similarly, two security officers arrived at the emergency

operations facility about 30 minutes before the alert declaration. The officers set-up an access control desk and assembled log sheets. The licensee explained that the officers sent to the emergency operations facility were dispatched early to provide directions to exercise observers who arrived prior to exercise start.

c. <u>Conclusions</u>

The original exercise scenario was not acceptable because there were significant similarities between the exercise and practice drill scenario events. The final scenario was sufficiently challenging to test onsite response capabilities. Exercise control was sufficient.

P4.7 Licensee Self Critique

a. Inspection Scope (82301-03.13)

The inspectors observed and evaluated the licensee's post-exercise facility critiques and the formal management critique on August 14, 1997, to determine whether the process would identify and characterize weak or deficient areas in need of corrective action.

b. Observations and Findings

Post-exercise critiques in all facilities were thorough, open, and self critical. Participants, controllers, and evaluators participated in the critiques. Although comments were mainly positive, there did not appear to be a reluctance to identify areas for improvement. Exercise participants identified good suggestions for improvement.

During the August 14, 1997, management critique, the Supervisor, Emergency Preparedness, presented a compilation of preliminary comments from participants, controllers, and evaluators. The comments included 6 items that would be tracked on the plant's corrective action tracking system and 10 followup items that would be tracked on the emergency preparedness tracking system. There was good overlap between the items identified by the licensee's evaluation team (participants, controllers, and evaluators) and the items identified by the NRC inspection team.

c. Conclusions

Post-exercise critiques were thorough, open, and self critical; good suggestions for improvement were identified. The management critique was detailed, informative, open, and self critical. There was good overlap between the licensee and NRC evaluation teams' observations. Overall, the critique process effectively identified issues in need of corrective action.

P8 Miscellaneous Emergency Preparedness Issues (92904)

P8.1 (<u>C' teu) Inspection Followup Item 50-483/9512-01</u>: exercise weakness for failure of the emergency operations facility to make a timely protective action recommendation. During the 1995 exercise, an evacuation protective action recommendation was not made until 22 minutes after the start of a radiological release with fuel damage. To improve performance in this area, the licensee revised Procedures EIP-ZZ-00212, "Protective Action Recommendations," and EIP-ZZ-00201, "Notifications," and conducted training on the revised procedures. During this exercise, the licensee developed possible protective action recommendations prior to the general emergency declaration. Upgrades, based on field team results and weather forecasts, were satisfactorily evaluated and communicated. Section P4.5 above includes additional information concerning the development and communication of protective action recommendations.

V. Management Meetings

X1 Exit Meeting Summary

The inspectors presented the inspection results to members of licensee management at the conclusion of the inspection on August 14, 1997. The licensee acknowledged the facts presented. No proprietary information was identified.

The Federal Emergency Management Agency scheduled a public meeting on August 15, 1997, to discuss the exercise results. Since there was no media or public attendance, the meeting was adjourned without Federal Emergency Management Agency and NRC presentations.

ATTACHMENT

SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

Licensee

G. Randolph, Vice President and Chief Nuclear Officer

R. Affolter, Manager, Callaway Plant

J. Blosser, Manager, Operations Support

S. Crawford, Supervisor, Radiation/Chemistry

A. Daume, Shift Supervisor

M. Evans, Superintendent, Health Physics

S. House, Manager, Nuclear Information Services

J. Laux, Manager, Quality Assurance

D. Lewis, Supervisor, Radiation/Chemistry

C. Naslund, Manager, Nuclear Engineering

J. Neudecker, Supervisor, Emergency Preparedness

A. Passwater, Manager, Licensing and Fuels

J. Peevy, Manager, Emergency Preparedness and Organizational Support

M. Reidmeyer, Engineer, Quality Assurance

P. Sudnak, Supervisor, Radiation/Chemistry

W. Witt, Superintendent, System Engineering

Other Personnel

T. East, Emergency Planner, Wolf Creek Nuclear Operating Corporation

NRC

D. Passehl, Senior Resident Inspector

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

Opened

50-483/9713-01	IFI	Exercise weakness - failure to make timely offsite agency notifications (Section P4.2)
50-483/9713-02	IFI	Exercise weakness - failure to establish effective technical support center access controls (Section P4.3)

Closed

50-483/9512-01 IFI

Exercise weakness - failure of the emergency operations facility to make a timely protective action recommendation (Section P8.1)

LIST OF DOCUMENTS REVIEWED

Emergency Implementing Procedures

EIP-ZZ-C0010	Emergency Operations Facility Operations	Revision 17
EIP-ZZ-00101	Classification of Emergencies	Revision 20
EIP-ZZ-00102	Emergency Implementing Actions	Revision 17
EIP-ZZ-00201	Notifications	Revision 27
EIP-ZZ-00211	Field Monitoring Direction and Assessment	Revision 12
EIP-ZZ-00212	Protective Action Recommendations	Revision 16
EIP-ZZ-00213	Technical Assessment	Revision 14
EIP-ZZ-00220	Emergency Team Formation	Revision 9
EIP-ZZ-00223	Field Monitoring Operations	Revision 15
EIP-ZZ-00226	Fire Response Procedure for Callaway Plant	Revision 3
EIP-ZZ-00231	Response to High Winds/Tornado Watches and Warnings	Revision 2
EIP-ZZ-00240	Technical Support Center Operations	Revision 20
EIP-ZZ-00260	Event Closeout/Plant Recovery	Revision 9
Osher Designed		

Other Documents

Callaway Plant Radiological Emergency Response Plan, Revision 21