

ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket Nos.: 50-528
50-529
50-530

License Nos.: NPF-41
NPF-51
NPF-74

Report No.: 50-528/99-01
50-529/99-01
50-530/99-01

Licensee: Arizona Public Service Company

Facility: Palo Verde Nuclear Generating Station, Units 1, 2, and 3

Location: 5951 S. Wintersburg Road
Tonopah, Arizona

Dates: March 8-11, 1999

Team Leader: Edwin F. Fox, Jr, Senior Emergency Preparedness Analyst
Office of Nuclear Reactor Regulation

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Approved By: Gail M. Good, Chief, Plant Support Branch

Attachment: Supplemental Information

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EXECUTIVE SUMMARY

Palo Verde Nuclear Generating Station, Units 1, 2, and 3
NRC Inspection Report 50-528/99-01; 50-529/99-01; 50-530/99-01

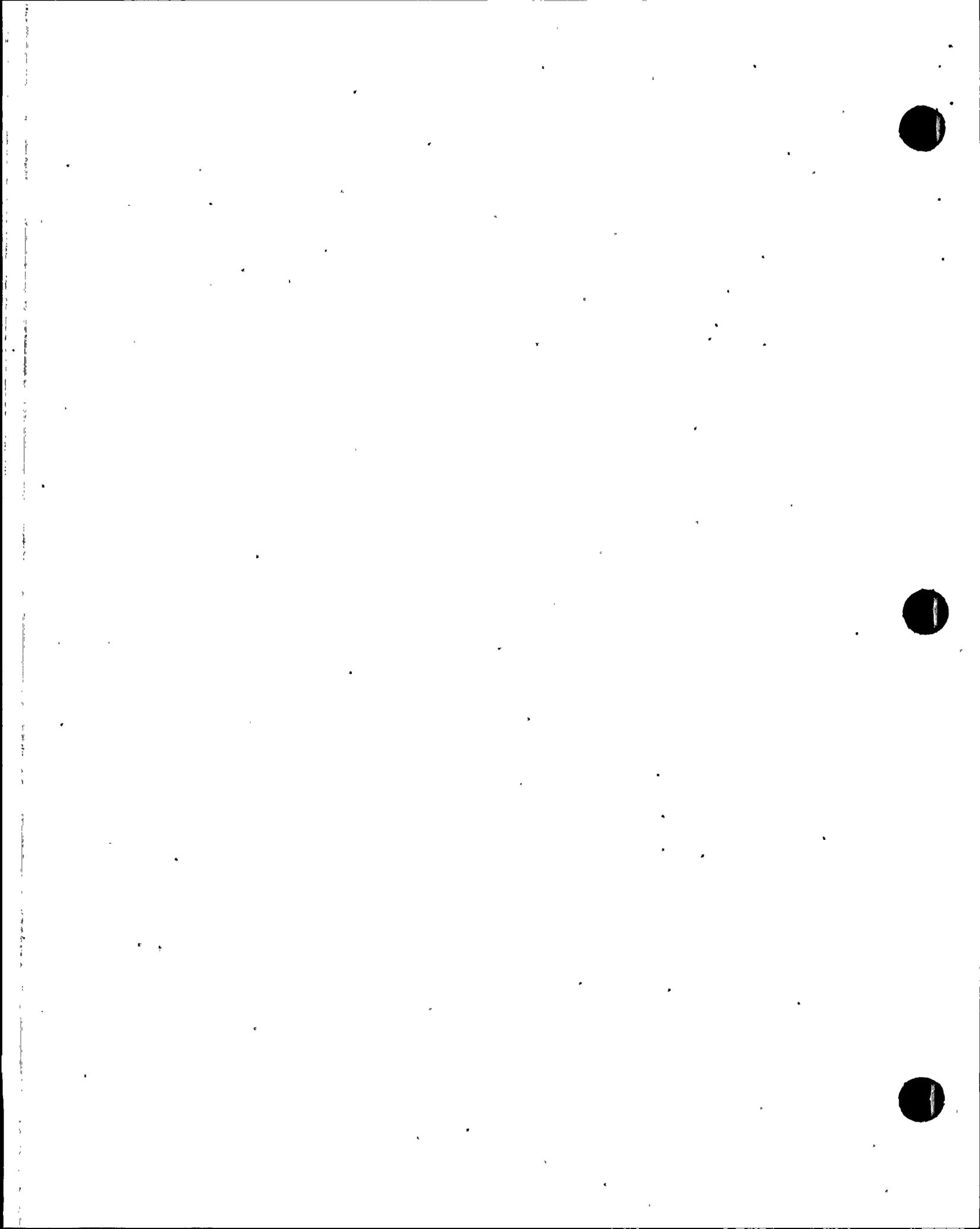
A routine, announced inspection of the licensee's performance and capabilities during the full-scale, biennial exercise of the emergency plan and implementing procedures was performed. The inspection team observed activities in the control room simulator, satellite technical support center, technical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

Plant Support

- Overall, exercise performance was good. The control room, satellite technical support center, technical support center, operations support center, and emergency operations facility successfully implemented key emergency plan requirements including emergency classifications, off-site notification, off-hours emergency response facility activation, emergency worker protection, dose assessment, and protective action recommendations (Sections P4.2, P4.3, P4.4, P4.5).
- Control room simulator staff performance was satisfactory. Analysis of plant conditions was acceptable; however, command and control and conduct of operations were ineffective at times. Three-leg communications were not used in some instances, and communications concerning plant status were delayed on some occasions (Section P4.2).
- The technical support center staff's performance was generally good (Section P4.3).
- An exercise weakness was identified for failure to establish and communicate facility priorities to the operations support center to ensure that mitigation efforts were properly accomplished. The engineering group was the only functional area that clearly established priorities. There was no integration between functional area directors to develop overall facility priorities. As a result: (1) a post-earthquake recovery plan was developed by the engineering group without input from other functional areas, (2) field activities which involved multiple disciplines were not well coordinated, and (3) the operations support center was given multiple directions. This exercise weakness was entered into the licensee's corrective action program as Condition Report/Deficiency Report 99-0283; therefore, no response is requested (Section P4.3).
- The performance of the operations support center personnel was generally good. Methods for ensuring personnel used accountability key card readers were informal and inconsistently implemented. Briefings were concise and regularly performed; however, facility priorities were not discussed. Work team status boards were not maintained and paper records did not always include team dispatch times. Radiological controls were generally good, but a post-accident sample was not handled prudently when it was brought into the facility. This could have caused unplanned personnel exposure if an accident had occurred (Section P4.4).



- The emergency operations facility staff's performance was very good. Briefings were frequent and timely and included input from key managers. Record and log keeping activities were not always complete. Off-site protective action recommendations were developed and communicated in a timely manner. Information concerning event classification on event notification forms was not clear. Interactions with off-site agency representative were effective (Section P4.5).
- The inspectors determined that the final exercise scenario was sufficient to test emergency response capabilities and demonstrate on-site exercise objectives. Exercise control was sufficient (Section P4.6).
- The overall critique process was effective in identifying issues in need of corrective action and areas for improvement. The post-exercise facility critiques were conducted systematically and identified many issues with facility operations and the scenario. The management critique was thorough and self-critical (Section P4.7).



IV. Plant Support

P4 Staff Knowledge and Performance in Emergency Preparedness

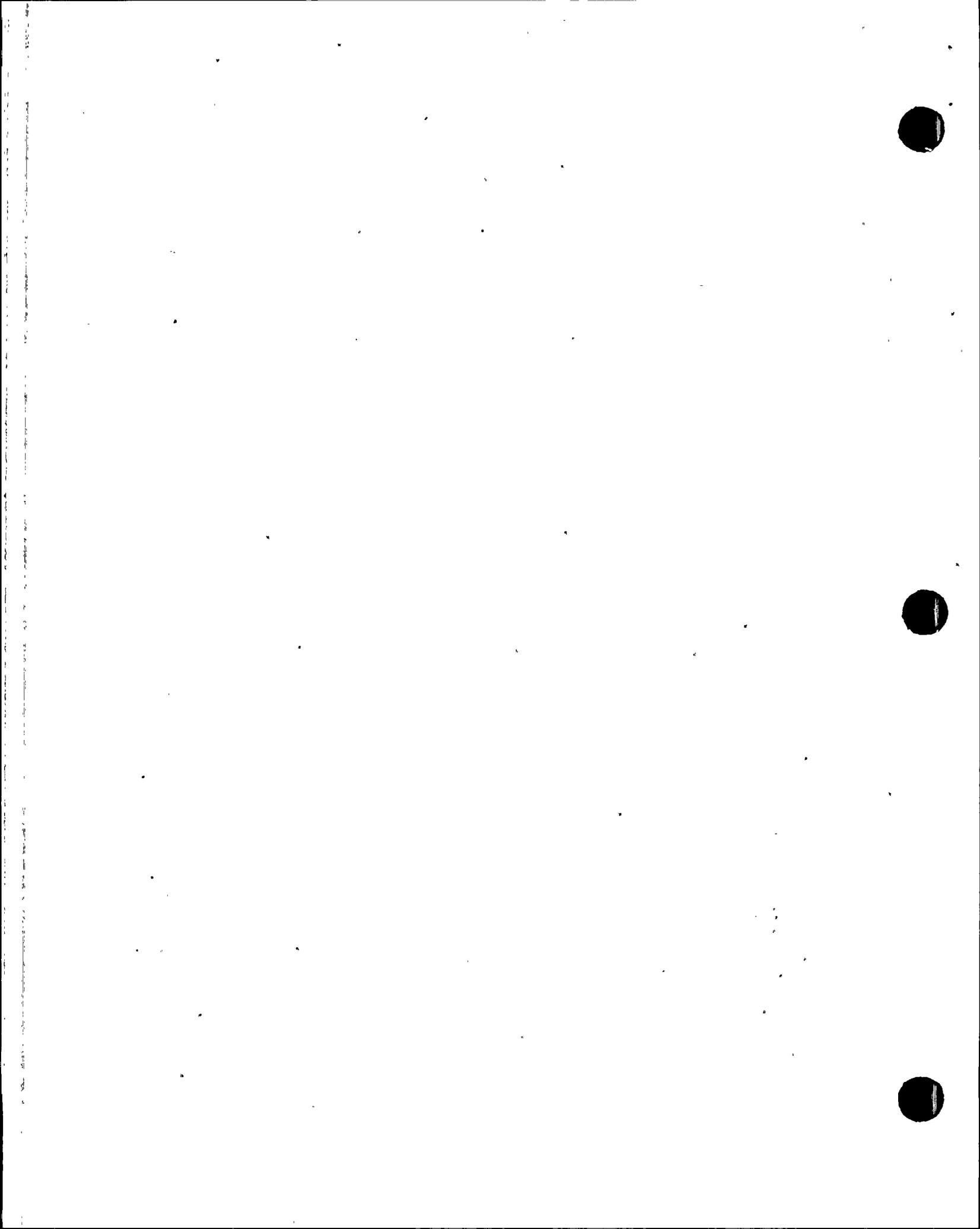
P4.1 Exercise Conduct and Scenario Description (82301 and 82302)

The licensee conducted a full-scale, biennial emergency preparedness exercise beginning at 1:30 a.m. on March 9, 1999. The exercise was conducted to test major portions of the on-site (licensee) and off-site emergency response capabilities. The licensee activated its emergency response organization and all emergency response facilities. The Federal Emergency Management Agency, Region IX, evaluated the off-site response capabilities of the state of Arizona and Maricopa county. The Federal Emergency Management Agency will issue a separate report.

The exercise scenario was dynamically simulated using one of the licensee's three control room simulators. The initial scenario conditions included all three Palo Verde Units operating at 100 percent power with Unit 1, the participating unit, having been at power for the last 116 days. At 2:15 a.m., the simulator control room received an earthquake alarm, and the Devers 525KV line isolated due to ground faults in California. The licensee initiated action to validate alarm indications (i.e., >operating basis earthquake (OBE)); however, while waiting for this confirmation, the emergency director declared a notification of unusual event and directed a call out of the emergency response organization.

Subsequent simulated events were as follows:

- Plant operators in the simulated control room completed the validation of the initial alarms and confirmed that the earthquake was >OBE levels which resulted in escalation to an alert.
- Indications of a primary system leak in containment were received via the radiation monitoring system. Simulator control room staff determined that the leak rate was approximately 50 gpm.
- An aftershock occurred (>safe shutdown earthquake (SSE)) causing a gross increase in reactor coolant system leakage (loss of coolant accident) and a reactor trip with four control assemblies not fully inserting on the trip. Reactor coolant system activity levels increased and reactor vessel plenum level lowered to 0 percent. The event was upgraded to a site area emergency.
- The refueling water tank level reached the recirculating actuation signal and the emergency core cooling system pump suction was swapped so that containment sump water served as a source of core cooling.
- Another aftershock (>SSE) occurred with a turbine cooling water system header rupture. The release of fission product gases into the reactor coolant system slowly increased due to further seismic related clad damage. In addition, the event breached containment at a main feedwater line penetration envelope



resulting in a radiological release to the environment. This led to a general emergency declaration.

The remainder of the scenario consisted of efforts to mitigate the event and decrease containment pressure to stop off-site radiological releases.

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, off-site agency notifications, internal and external communications, and adherence to the emergency plan and procedures. The inspectors reviewed applicable emergency plan sections, departmental procedures, instructional guides, logs, checklists, and notification forms generated during the exercise.

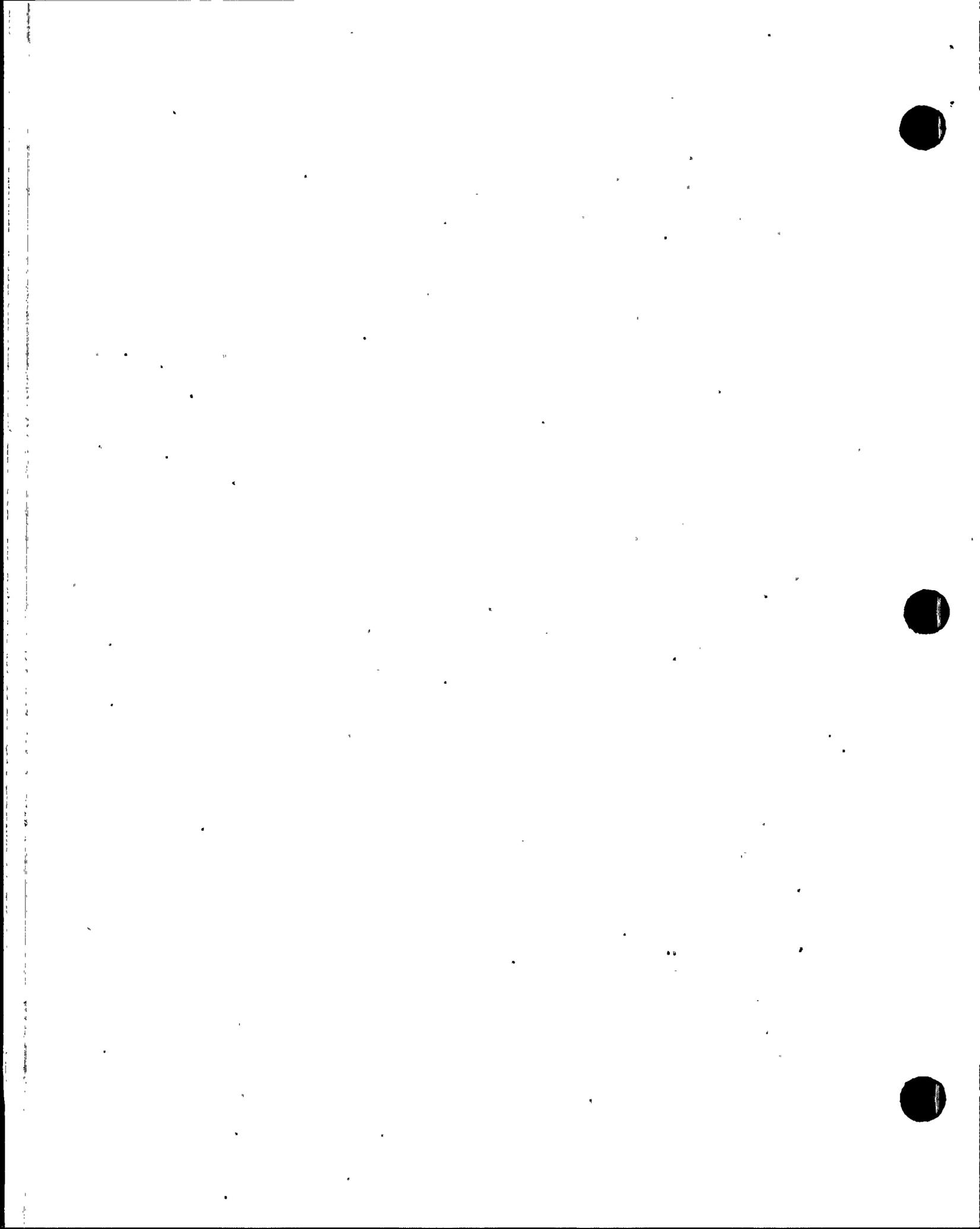
b. Observations and Findings

The shift manager classified and declared a notification of unusual event (V-110) at 2:25 a.m., while seismic alarms were being evaluated per Procedure 79IS-9SM01, "Analysis of Seismic Event," Revision 8. The site manager assumed emergency coordinator duties at 2:28 a.m. The emergency coordinator determined that augmentation of the emergency organization was necessary and directed actions to use the automated notification system to request emergency organization response. While this was unexpected by the scenario developers, the Palo Verde Nuclear Generating Station Emergency Plan allowed emergency response organization augmentation at the discretion of the emergency coordinator. Upon validation that an operating basis earthquake had occurred, the emergency coordinator upgraded the classification to an alert (V-124) at 2:42 a.m. Both emergency declarations were correct and made within 15 minutes as described in Procedure 16DP-0EP13, "Emergency Classification," Revision 2.

Off-site agency notifications were correct and timely. For both the notification of unusual event and alert classifications, the satellite technical support center communicator and the unaffected shift technical advisor promptly notified off-site agencies and the simulated NRC operations center, respectively.

Communications within the control room, while acceptable, did not always meet expectations. The inspectors were informed that three-leg communications were a standard expectation to be used on all occasions. Three-leg communication involved: (1) information communication by provider, (2) information restatement by receiver, and (3) information confirmation by provider. While the inspectors observed that three-leg communications were occasionally used in the control room, the practice was not constant as indicated by the following examples:

- A reactor operator acknowledged an order from the control room supervisor with, "Ok, I can do that too."



- There was limited verbalization of actions and requirements during the loss of coolant accident event.

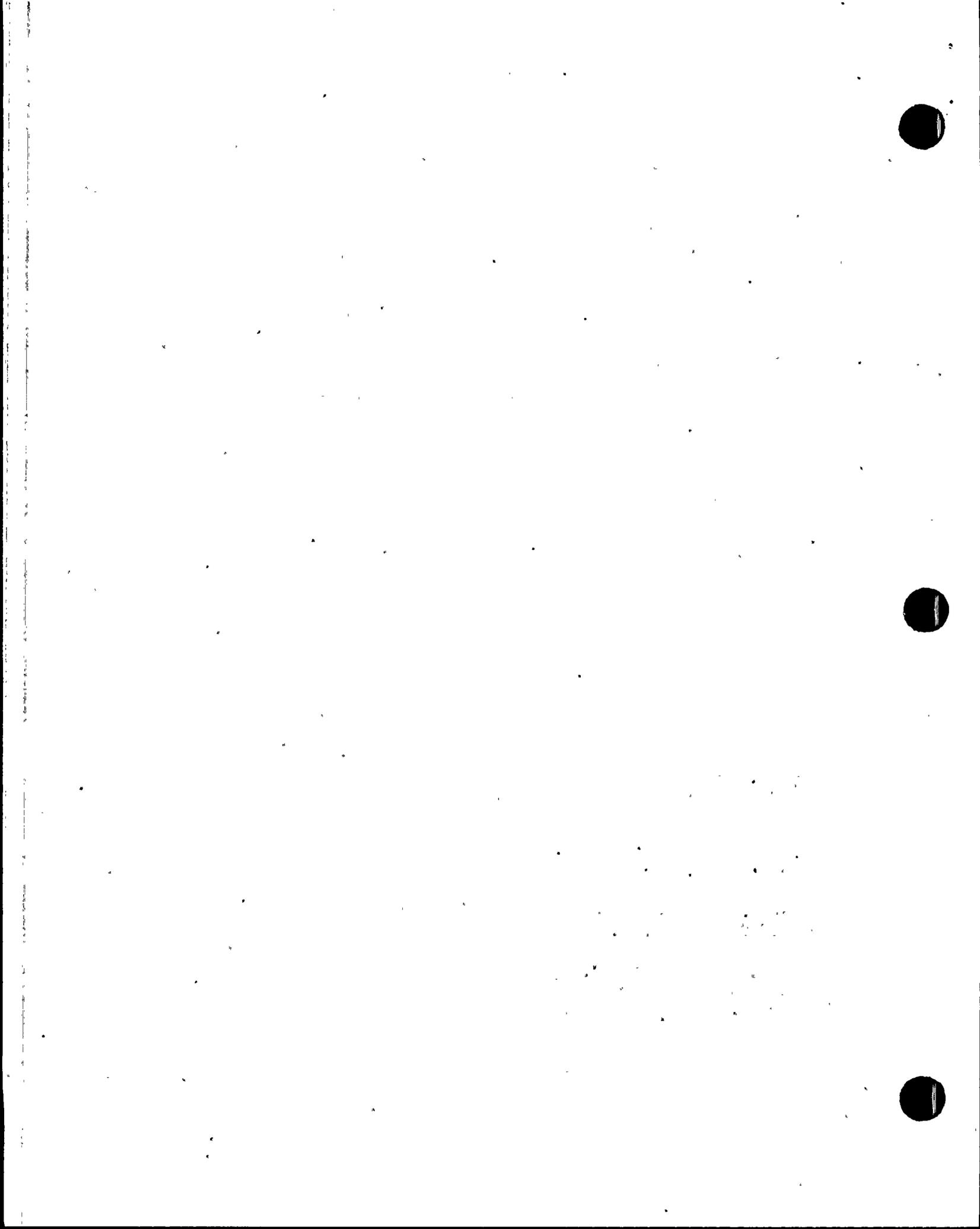
The inspectors observed other instances where relevant information was not properly communicated. These instances did not affect the response effort during the exercise but could have caused confusion.

- The emergency coordinator did not inform the satellite technical support center and control room staffs when the satellite technical support center activated.
- There was no site page announcement when the notification of unusual event was declared.
- The control room staff was not informed when the technical support center was activated and had assumed emergency coordinator duties.

Command and control and conduct of operations were not always effective. These instances did not affect the response effort during the exercise but increased the potential for errors.

- Direction provided by the control room supervisor lacked formality at times. Orders were not directed to the specific operator/watch station required to take action. For example, the control room supervisor designated a crew member to perform an action by pointing. The crew member missed the gesture and was unaware of the direction.
- The control room supervisor answered the phone during the loss of coolant accident, diverting focus from ongoing control room activities.
- At times, control room briefings were infrequent and incomplete.
- After the loss of coolant accident, the control room supervisor held a briefing during which all of the operators stood in front of the control room supervisor, facing away from the control boards, leaving the boards unmonitored.
- The control room crew displayed inconsistent degrees of peer checking and self checking during the exercise.
- The control room operators appeared to focus on lit annunciators in the control room and did not appear to perform a board sweep.
- While performing the annunciator response procedure for the seismic occurrence alarm, the reactor operator only read the first page and failed to recognize the remaining pages until prompted by the shift manager.

Log keeping in the control room simulator was incomplete. There were no control room log entries from 3:35 to 6:51 a.m. The satellite technical support center communicator and the radiation protection monitor properly kept log on sheets provided in the emergency plan procedures.



c. Conclusions

Control room simulator staff performance was satisfactory. The emergency coordinator promptly recognized and declared the notification of unusual event and the alert. Off-site agency notifications were timely and correct. Analysis of plant condition was acceptable; however, command and control and conduct of operations were not always effective. Three-leg communications were not used in some instances, and communications concerning plant status were delayed on some occasions.

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 to respond to exercise scenario conditions. These tasks included off-hours staffing and activation, accident assessment and event classification, NRC notifications, personnel accountability, facility management and control, on-site protective action decisions and implementation, internal and external communications, assistance and support to the control room, and prioritization of mitigating actions. The inspectors reviewed applicable emergency plan sections, departmental procedures, instructional guides, and logs.

b. Observations and Findings

The technical support center was promptly activated following the alert declaration. The need for additional engineering resources was quickly recognized, and the personnel obtained. Logs were timely, well kept, and complete. Notifications to off-site agencies were timely and complete. Communications with on-site teams were frequent, and the center showed a concern for team safety. Center personnel made good use of available data display systems.

Operations in the technical support center were generally focused, and facility management was effectively demonstrated. The emergency coordinator effectively tracked emergency action levels, and emergency classifications were timely and correct. Radiation protection practices received continuous attention. The station security organization performed well. Logs were generally well kept, accurate, and complete. Briefings were frequent and conducted in a timely manner. However, briefings were not fully effective because all facility directors did not participate and current priorities and anticipated activities were not discussed. Regular plant announcements were made from the technical support center; however, several announcements were not clearly worded and were difficult to hear in outdoor areas.

The technical support center failed to establish and communicate facility priorities to the operations support center to ensure that mitigation efforts were properly accomplished. The engineering group was the only functional area that clearly established priorities. There was no integration between functional area directors to develop overall facility priorities. As a result: (1) a post-earthquake recovery plan was developed by the engineering group without input from other functional areas, (2) field activities that involved multiple disciplines were not well coordinated, and (3) the operations support



center was given multiple directions. The lack of coordination delayed efforts to mitigate the off-site release by spraying the release point with water.

The failure to establish and discuss facility priorities during facility briefings, the lack of status boards or other methods for documenting priorities, and a general lack of knowledge within the technical support center concerning operations support center actions exacerbated the problem. The failure to establish and communicate facility priorities was identified as an exercise weakness. This exercise weakness was entered into the licensee's corrective action program as Condition Report/Deficiency Report 99-0283; therefore, no response is requested (50-528;-529;-530/9901-01).

c. Conclusions

The technical support center staff's performance was generally good. Classifications and notifications to the NRC were correct and timely. Some plant announcements contained unclear information. An exercise weakness was identified for failure to establish and communicate facility priorities to the operations support center to ensure that mitigation activities were properly accomplished. The engineering group was the only functional area that clearly established priorities. There was no integration between functional area directors to develop overall facility priorities. As a result: (1) a post-earthquake recovery plan was developed by the engineering group without input from other functional areas, (2) field activities which involved multiple disciplines were not well coordinated, and (3) the operations support center was given multiple directions. This exercise weakness was entered into the licensee's corrective action program as Item 99-0283; therefore, no response is requested.

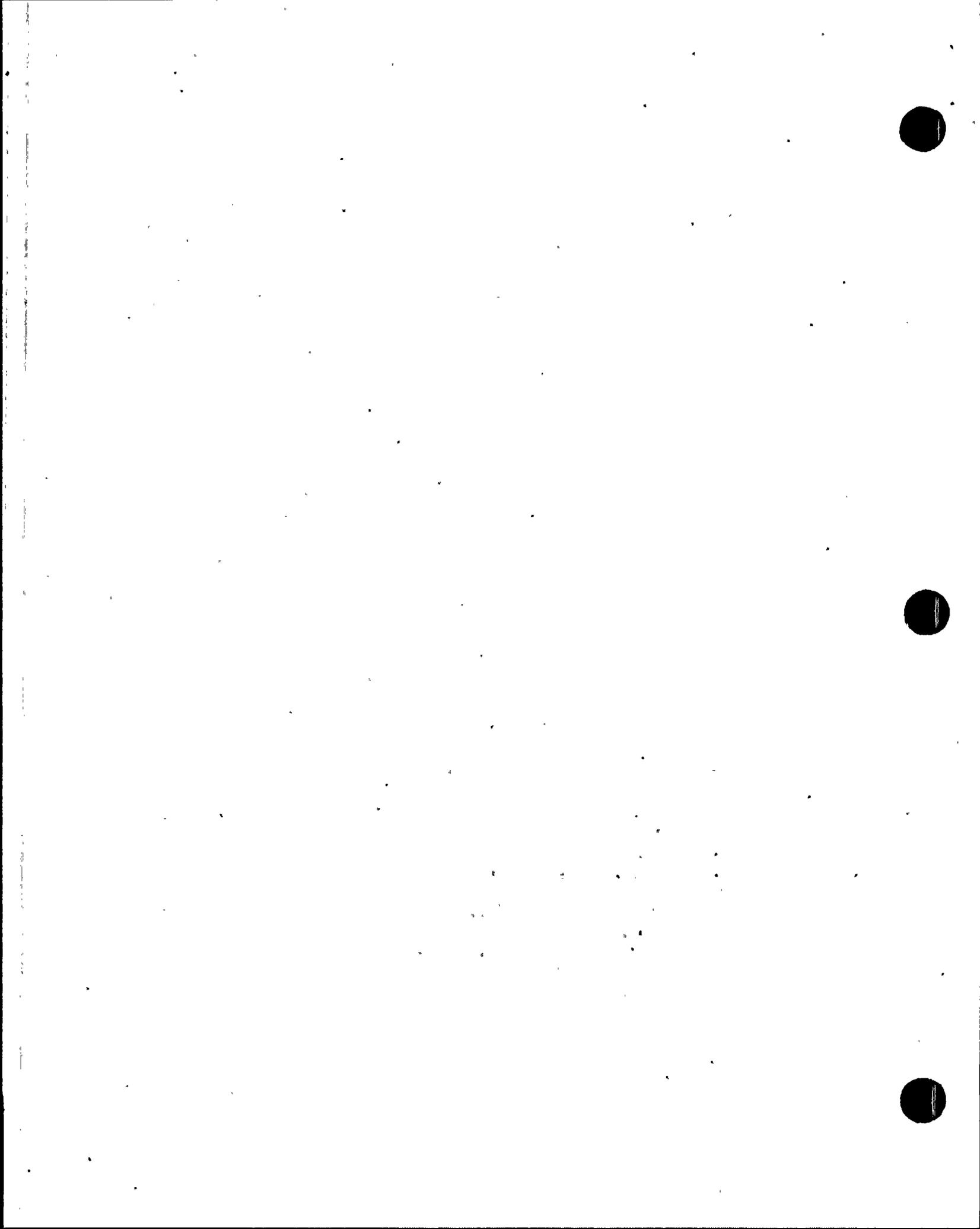
P4.4 Operations Support Center

a. Inspection Scope (82301-03.05)

The inspectors observed and evaluated the operations support center staff as they performed tasks in response to exercise scenario conditions. These tasks included facility staffing and in-plant emergency response team dispatch and coordination in support of control room and technical support center requests. The inspectors reviewed applicable emergency plan sections, departmental procedures, instructional guides, logs, checklists, and forms generated during the exercise.

b. Observations and Findings

The center was activated with appropriate personnel. The participants' names and emergency response function descriptions were recorded on information boards within the center. Phones, radios, and other equipment necessary for the operations support center to function were available. However, the personnel accountability process in the operations support center was informal. No one was designated to ensure individuals used the key card reader in the operations support center. There were no posted instructions to inform workers of the operations support center boundary and the expectations associated with key card reader use. Instructions were mentioned in some of the operations support center coordinator's briefings and voiced by various operations support center staff members to individuals entering the operations support center;



however, these instructions were not sufficient to ensure that all people met expectations for maintaining accountability after initial personnel accountability was established.

The operations support center coordinator demonstrated acceptable management control by effectively controlling the number of personnel in the operations support center office area. The operations support center coordinator conducted regular briefings, at approximately hourly intervals, and informed participants of the plant status. However, the operations support center coordinator did not discuss work priorities during the briefings, and the priorities were not displayed on operations support center status boards. This situation contributed to the exercise weakness discussed in Section P4.3 above.

Information sharing within the operations support center was timely. During the early part of the exercise, operations support center personnel correctly used three-leg communications when issuing and responding to directions. However, during the latter part of the exercise, use of three-leg communications was inconsistent.

The in-plant team status board was used only in the early part of the exercise. Only three teams were listed, then the status board was erased and not used. Teams were tracked using the in-plant team briefing records, which were taped around the operations support center coordinator's desk. The inspectors observed that 9 of 38 in-plant briefing records (Form EP-131A) did not include dispatch times.

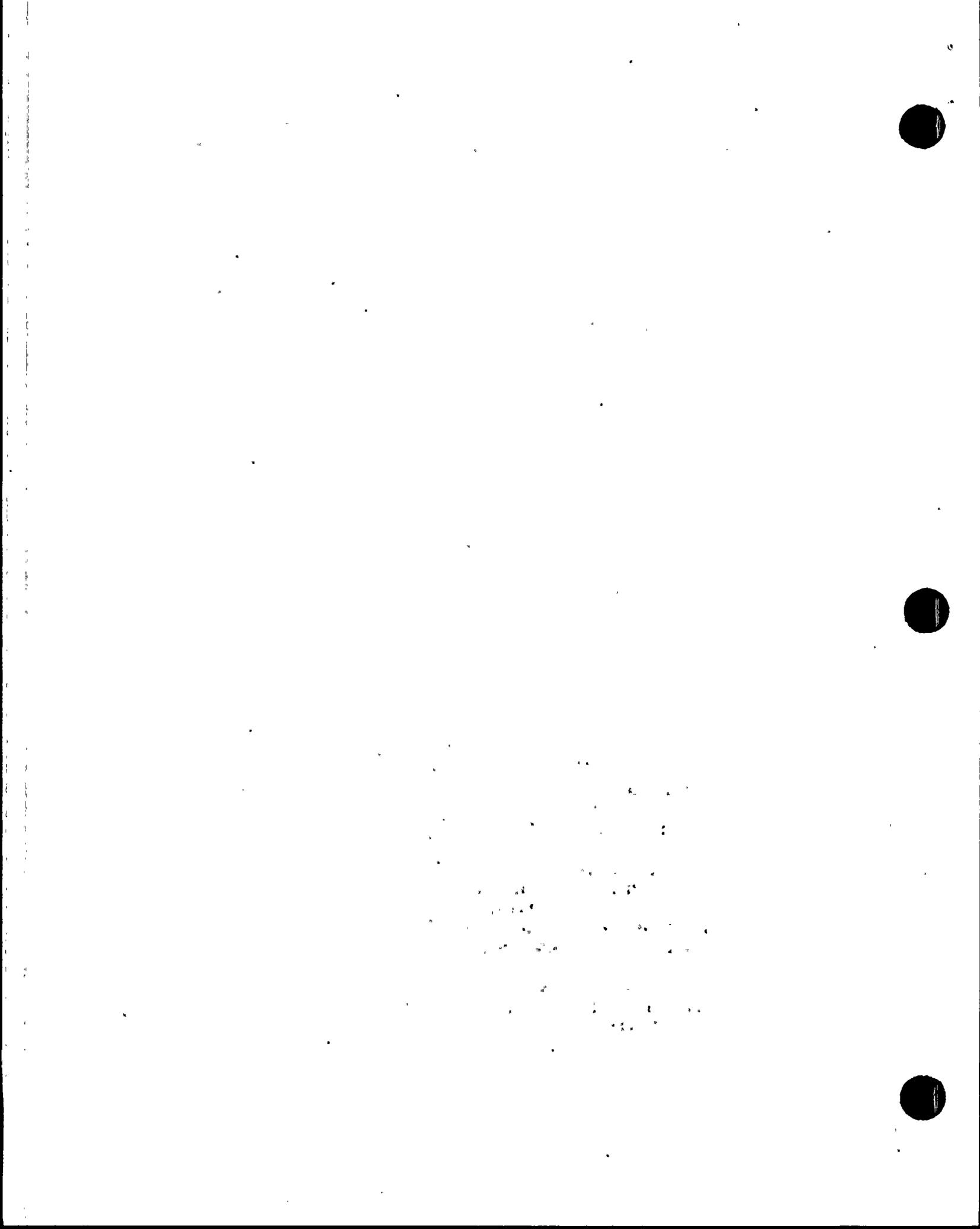
Good emergency team briefings were conducted prior to dispatch from the operations support center. Maintenance and radiation protection operations support center leads provided the teams with the appropriate information so that the teams could properly assess equipment conditions and perform assigned tasks expeditiously, while maintaining radiation doses low.

Good communications were maintained between the field teams and the operations support center personnel. Radiation protection personnel assigned to field teams kept the operations support center radiation protection lead informed of the radiological conditions in the plant and traversed routes.

Radiation protection practices were generally good. Habitability surveys in the center were performed regularly. Contamination controls around the operations support center were properly maintained. Radiation protection technicians provided good coverage of in-plant repair teams and prevented the observed teams from accruing unnecessary radiation doses. However, the inspectors noted that a simulated, radiological sample from the post-accident sampling system was taken into the operations support center office area. Even though the sample was in a shielded container, an accident resulting in the release of the sample from its shielded container could have caused confusion and unnecessary radiation doses to participants in the operations support center.

c. Conclusions

The performance of the operations support center personnel was generally good. The center was activated with appropriate personnel, and it was equipped properly to



perform its function. Methods for ensuring personnel used accountability key card readers were informal and inconsistently implemented. Briefings were concise and regularly performed; however, operations support center priorities were not discussed. Work team status boards were not maintained, and paper records did not always include the team dispatch times. Radiological controls were generally good, but a post-accident sample system sample was not handled prudently when it was brought into the center. This could have caused unplanned personnel exposure if an accident had occurred.

P4.5 Emergency Operations Facility

a. Inspection Scope (82301-03.04)

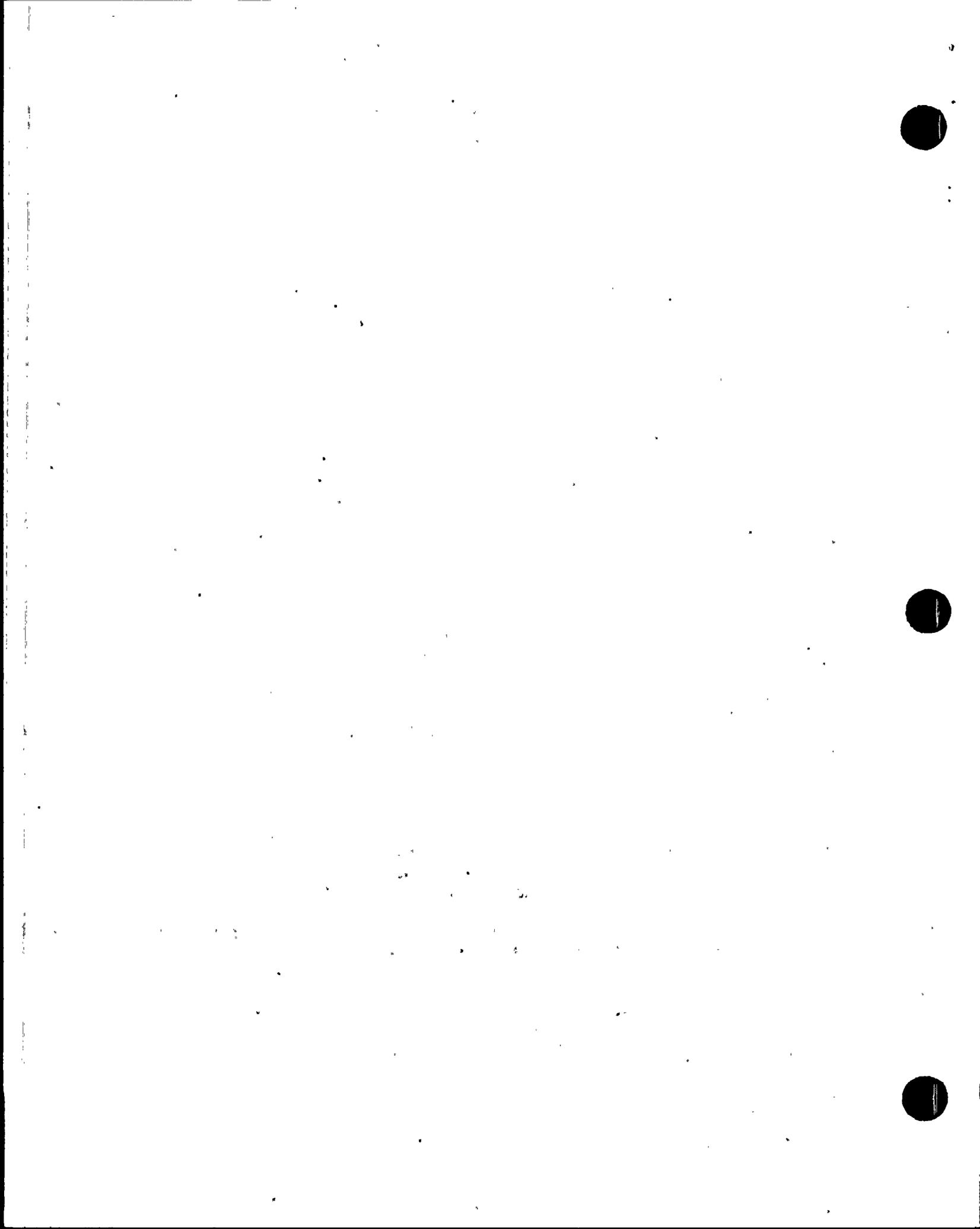
The inspectors observed the emergency operations facility's staff as they performed tasks in response to the exercise. These tasks included facility activation, notification of state and local response agencies, development and issuance of protective action recommendations, dose assessment and coordination of field monitoring teams, and direct interactions with representatives of off-site agencies. The inspectors reviewed applicable emergency plan sections, departmental procedures, instructional guides, logs, checklists, forms, and dose projections generated during the exercise.

b. Observations and Findings

Activation of the emergency operations facility commenced with the declaration of the alert at 2:45 a.m., although emergency response personnel were called out at the notification of unusual event declaration. Upon arrival, personnel signed-in on the staffing board (only key positions), implemented position-specific activation checklists, and verified telephone operability. Following a responsibility turnover with the technical support center and achieving prescribed staffing, full facility activation occurred at 4:05 a.m. The inspectors considered the activation process coordinated and efficient.

Notifications to off-site agencies were conducted satisfactorily. Timely and correct notifications were made to both the state and county officials using the notification alert network following the site area and general emergency declarations. The use of the notification alert network was effective for making initial and follow-up notifications and protective action recommendation changes. The use of the Palo Verde Emergency Status Code(s) for the bases for classifications in notification forms referenced pages in the emergency classification bases documentation as indicated in Procedure 16DP-OEP13, Revision 2. In some instances, this code related to different initiating conditions for different emergency action levels or a barrier loss or potential loss. The state and county have agreed with this scheme; however, the correct basis for the classification could be misunderstood by off-site agencies as in the following examples:

- Status Code V-10, used as part of the bases for the site area and general emergency classifications, could be a reactor coolant system potential loss (reactor coolant system leak >44 gpm) or a loss (reactor coolant system leak rate > available makeup capacity as indicated by a loss of reactor coolant system subcooling) (*i.e., reactor coolant system at saturation conditions*).



- Status Code V-12 could be a reactor coolant system potential loss (steam generator tube rupture (SGTR) >44 gpm) or a loss (SGTR >132 gpm with a prolonged release of contaminated secondary coolant occurring from the ruptured steam generator to the environment).
- Status Code V-16, used as part of the bases for the general emergency classification, could be a containment (CTMT) barrier potential loss (CTMT pressure 50 psig and increasing) or potential loss (CTMT pressure >8.5 psig with both CTMT Spray Systems not operating) or loss (rapid unexplained CTMT pressure decrease following initial increase) or loss (CTMT pressure or sump level response not consistent with loss of coolant accident conditions).
- Status Code V-83, used as part of the bases for the site area emergency classification, could be an unusual event classification for unidentified or pressure boundary leakage >10 gpm or unidentified leakage >25 gpm in Modes 1-4.

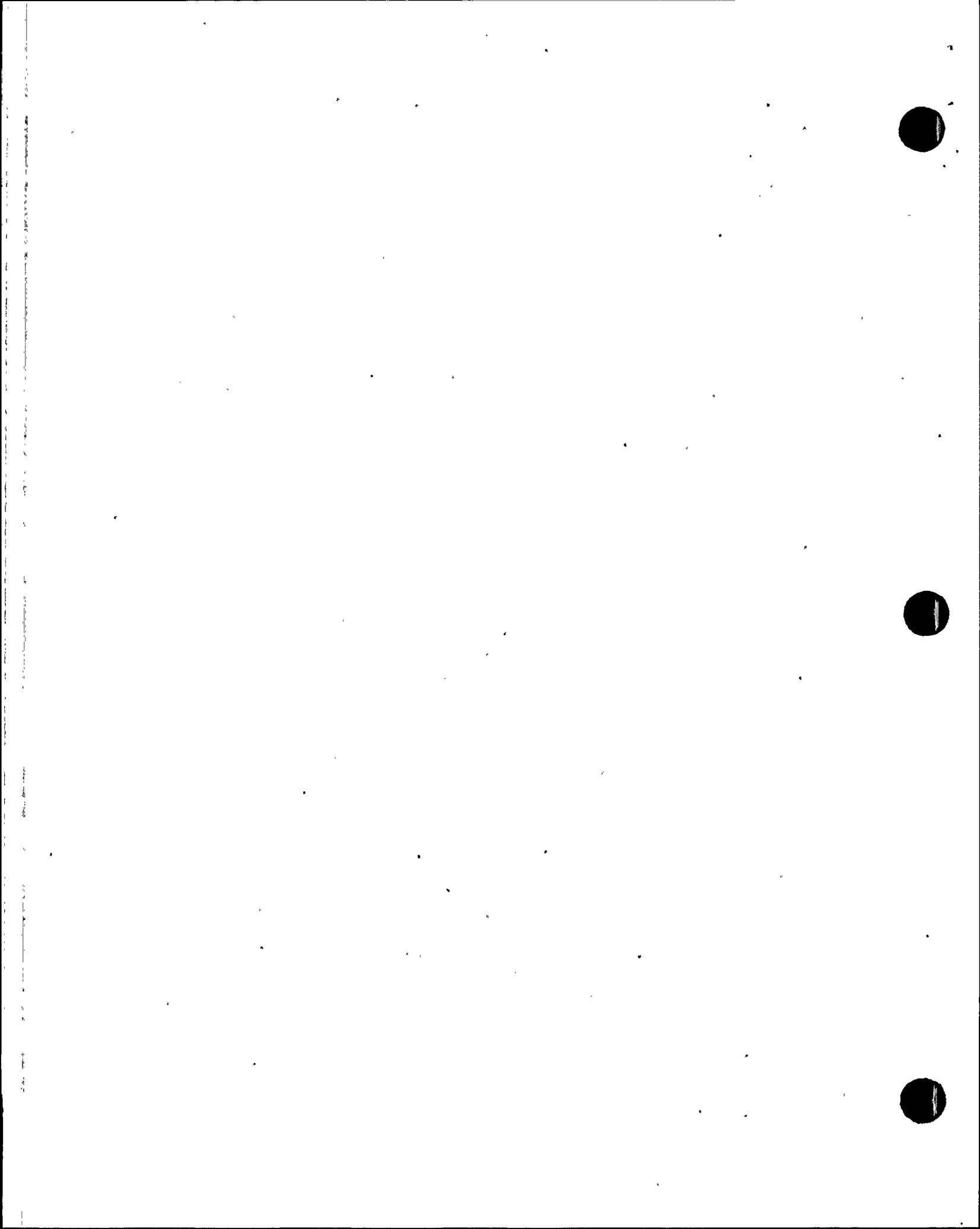
Facility briefings were conducted in a manner that appropriately allowed input/discussion from other facility members. Input from other facility members such as the administrative and logistics coordinator, technical analysis manager, and security coordinator were solicited so that it could be presented for the entire facility to hear. Management control in the emergency operations facility was satisfactory; however, information control was not always effective. The following examples were observed:

- The emergency operations director requested a projected dose assessment at approximately 8:30 a.m. A dose assessment was not provided until 10:30 a.m. Although this did not detract from exercise performance, not providing information to decision makers as requested could delay appropriate actions.
- The technical engineer requested a post accident sample at 9:10 a.m. A sample was taken and analyzed by the operations support center. Those results were provided to the technical support center but were not provided to the emergency operations facility. The failure to provide those results did not affect the licensee's performance, but the lack of this information could have affected dose projections.

Briefings to the state of Arizona Radiation Regulatory Agency representative were complete and effective. Plant status, dose assessment information, and other emergency information was appropriately provided.

Logs and records of key decisions or events in the emergency operations facility were not always maintained or complete. A review of logs indicated that when information was not initially available, there was no record when the information was provided. The inspectors determined that accident reconstruction would be difficult due to the lack of incomplete logs or records.

The radiological assessment coordinator exhibited good control of the dose assessment area. The radiological assessment coordinator briefed the team on initiating conditions and current event status. The coordinator also directed the dose assessment health



physicist to perform dose assessment calculations based on current and default plant parameters.

The dose assessment health physicist was very knowledgeable in performing dose assessments and kept the radiological assessment coordinator well informed of changes in radiological and meteorological conditions. The radiological assessment coordinator had frequent discussions with the emergency operations director about the radiological status of the event, plant conditions, and protective action recommendations.

Communication between the licensee's radiological assessment communicator and the field teams was generally good. The field teams were effectively positioned in the down wind direction to measure radiological releases. The inspectors noted good cooperation and teamwork between the licensee's radiological assessment personnel and state personnel. Radiological field assessment teams were properly tracked and coordinated throughout the exercise.

In general, maps and status boards were not effectively used by the emergency operations staff during the exercise. The inspectors noted that the meteorological data board did not initially contain units for wind speed, the radiation status board was only partially used during the exercise, and a map for the ingestion pathway emergency planning zone contained dose projections from a previous drill/exercise.

c. Conclusions

The emergency operations facility staff's performance was very good. Briefings were frequent and timely and included input from key managers. Record and log keeping activities were not always complete. Off-site protective action recommendations were developed and communicated in a timely manner. Information concerning event classification on event notification forms was not clear. Interactions with off-site agency representatives were effective.

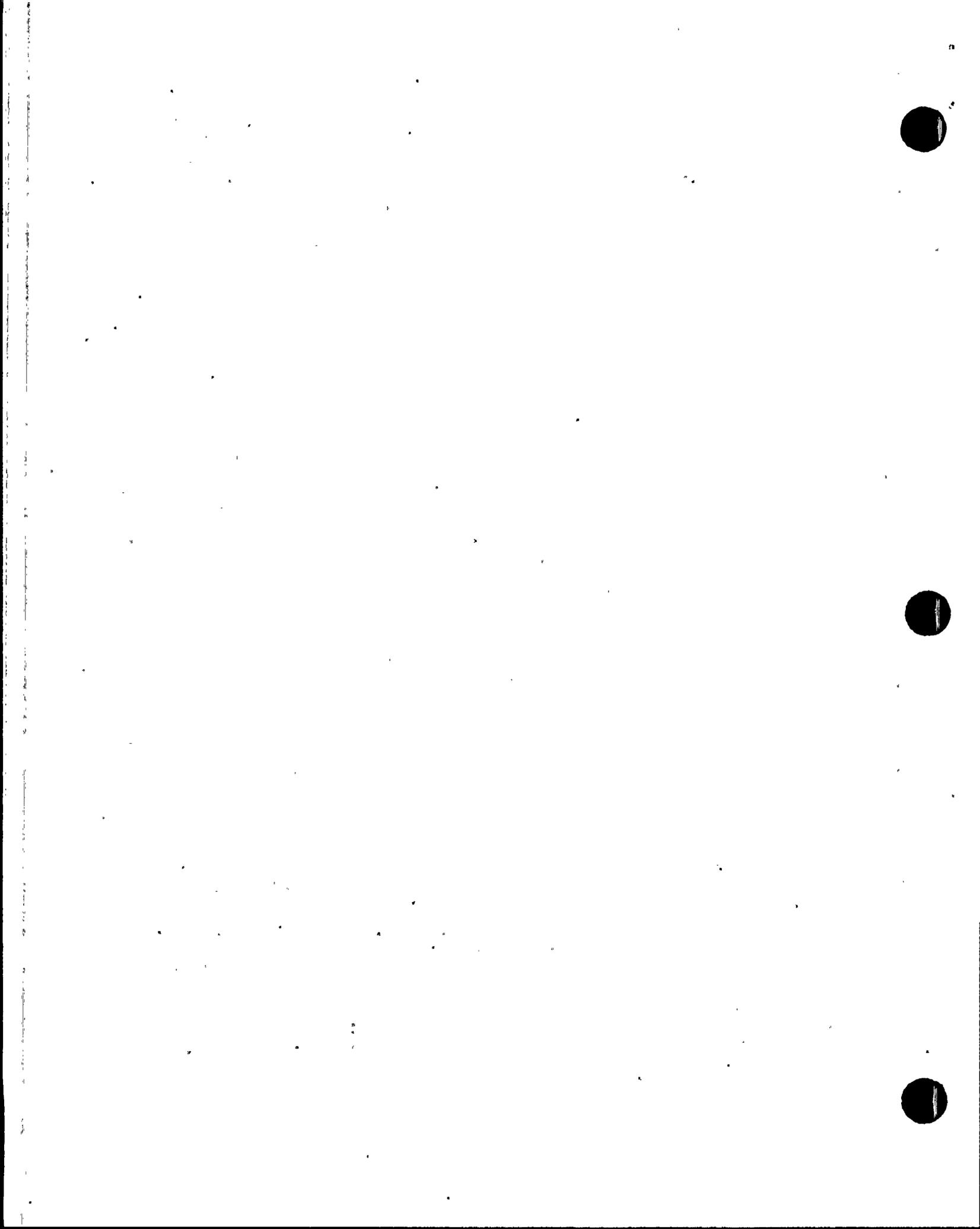
P4.6 Scenario and Exercise Control

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 scenario for NRC review on January 7, 1999, (the exercise objectives were submitted 30 days earlier). The results of the NRC's review were documented in a letter dated February 16, 1999. Questions concerning the exercise objectives and final scenario were resolved during telephone conversations on January 8, January 29, and February 9, 1999, with members of the licensee's emergency preparedness staff. The scenario was determined to be appropriate to meet emergency plan requirements.



The following aspects of exercise conduct and control during the exercise detracted from the realism and training value of the exercise.

- The simulator control room faxed information and called the actual control room during the exercise to pass exercise information and gain drill plant status.
- Unexpected failure of the simulator Radiation Monitor System was not communicated adequately to the control room staff.
- Having all three shift technical advisors (one from each unit) at Unit 1 after the initial event was unrealistic. For realism, the shift technical advisors should have remained at each unit to evaluate the aftershocks, then released to Unit 1 for assistance.
- A radiation protection technician called the actual Unit 1 control room at 2:54 a.m., instead of a phone number simulating that control room.
- Confusion over the extent of simulation caused the technical support center controllers to delay the site evacuation.

c. Conclusions

The inspectors determined that the final exercise scenario was sufficient to test emergency response capabilities and demonstrate on-site exercise objectives. 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 March 11, 1999, 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 the control room simulator, technical support center, operations support center, and emergency operations facility were good. The critiques were conducted in a systematic manner and included input from controllers, evaluators, and exercise participants. Principal players, controllers, and evaluators were self-critical and identified areas of potential improvement. In most of the facility critiques, written comments were encouraged, and completed comment forms were observed. However, in the operations support center, input was not solicited from the different participating crafts.

During the March 11, 1999, management critique, the Department Leader, Emergency Planning, presented a compilation of comments from controllers and evaluators. The licensee had not completed its evaluation to determine the significance of the comments (exercise weaknesses, areas for improvement, etc.). The management critique focused



on describing and discussing areas in need of improvement, as well as strengths and positive comments. The inspectors concluded that the management critique was good.

c. Conclusions

The overall critique process was effective in identifying issues in need of corrective action and areas for improvement. The post-exercise facility critiques were conducted systematically and identified many issues with facility operations and the scenario. The management critique was thorough and self-critical

P8 Miscellaneous Emergency Preparedness Issues

P8.1 (Closed) IFI 50-528;-529;-530/9710-01: Exercise weakness for failure to recognize and classify the notification of unusual event. Emergency classifications were correctly recognized and classified during this exercise, as discussed in Sections P4.2 and P4.3 above.

P8.2 (Closed) IFI 50-528;-529;-530/9710-02: Exercise weakness for failure to make required off-site agency notifications. Off-site agency notifications were properly made during this exercise, as discussed in Sections P4.2, P4.3, and P4.5 above.

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 March 11, 1999. The licensee acknowledged the facts presented. No proprietary information was identified.



ATTACHMENT

SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

Licensee

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C. Buraszkeski, Administrative Coordinator, Emergency Planning
G. Cerkas, Emergency Planning Coordinator
I. Chavez, Section Lead, Instrumentation and Controls
K. Coon, Technical Management Assistant, Radiation Protection
D. Crozier, Department Leader, Emergency Planner
R. Duncan, Emergency Planning Coordinator
R. Fullmer, Director, Nuclear Assurance
W. Ide, Vice President, Nuclear Engineering
D. Leech, Department Leader, Nuclear Assurance
B. Lee, Emergency Planning Coordinator
H. Lines, Program Advisor, Emergency Services
D. Marks, Section Leader, Nuclear Regulatory Affairs
R. Manica, Section Leader, Maintenance
W. McMurray, Supervisor, Radiation Protection
R. Nunez, Department Leader, Operations Training
M. O'Neal, Emergency Planning Coordinator
G. Overbeck, Vice President, Nuclear Production
N. Pappas, Supervisor, Control Room Operations
J. Proctor, Shift Supervisor, Unit 1 Operations
C. Seaman, Director, Emergency Services
J. Steward, Director, Radiation Protection
R. Stroud, Senior Consultant, Nuclear Regulatory Affairs
R. Taylor, Shift Manager, Operations.
M. Wagner, Supervisor, Radiation Protection

Other

H. Border, Program Manager, Division of Emergency Management, State of Arizona
R. Cope, X-Ray Compliance Program Manager, Arizona Radiation Regulatory Agency
W. Wright, Arizona Radiation Regulatory Agency

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 92402	Followup - Plant Support



LIST OF ITEMS OPENED AND CLOSED

Opened

50-528;-529;-530/9901-01 IFI Exercise weakness - failure to set facility priorities

Closed

50-528;-529;-530/9710-01 IFI Exercise Weakness - failure to recognize and classify the notification of unusual event.

50-528;-529;-530/9710-02 IFI Exercise Weakness - failure to make required off-site agency notifications.

50-528;-529;-530/9901-01 IFI Exercise weakness - failure to set facility priorities

LIST OF DOCUMENTS REVIEWED

Departmental Procedures and Instructional Guides

16DP-OEP12	Emergency Planning Equipment Malfunction	Revision 2
16DP-OEP13	Emergency Classification	Revision 2
16DP-OEP14	Satellite Technical Support Center Actions	Revision 1
16DP-OEP15	Technical Support Center Actions	Revision 4
16DP-OEP16	Operations Support Center Actions	Revision 4
16DP-OEP17	Emergency Operations Facility Actions	Revision 7
16IG-OEP012	Assembly	Revision 0
16IG-OEP031	Core Damage Assessment	Revision 1
16IG-OEP041	Dose Projections	Revision 0
16IG-OEP053	Emergency Message Forms	Revision 2
16IG-OEP161	Protective Actions	Revision 1

Other Documents

Palo Verde Nuclear Generating Station Emergency Plan	Revision 20
Controller Information Manual	Revision 3

