UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
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November 26, 1999

Harold B. Ray, Executive Vice President
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San Onofre Nuclear Generating Station
P.O. Box 128
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SUBJECT: NRC INSPECTION REPORT NO. 50-361/99-14; 50-362/99-14

Dear Mr. Ray:

This refers to the inspection conducted on October 26 to 29, 1999, at your San Onofre Nuclear Generating Station, Units 2 and 3 facilities. The enclosed report presents the results of this inspection.

The purpose of the inspection was to review the implementation of your emergency plan and procedures during your biennial emergency preparedness exercise. Overall, performance during the biennial exercise was good.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be placed in the NRC Public Document Room (PDR).

Should you have any questions concerning this inspection, we will be pleased to discuss them with you.

Sincerely,

DAPowers for

Gail M. Good, Chief
Plant Support Branch
Division of Reactor Safety

Docket Nos.: 50-361, 362
License Nos.: NPF-10, 15

Enclosure:
NRC Inspection Report No.
50-361/99-14; 50-362/99-14

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ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket Nos.:	50-361, 362
License Nos.:	NPF-10, 15
Report No.:	50-361/99-14; 50-362/99-14
Licensee:	Southern California Edison Co.
Facility:	San Onofre Nuclear Generating Station, Units 2 and 3
Location:	5000 S. Pacific Coast Highway San Clemente, California
Dates:	October 26-29, 1999
Inspectors:	William A. Maier, Senior Emergency Preparedness Inspector, Plant Support Branch
	Ryan E. Lantz, Reactor Engineer, Operations Branch
	Paul J. Elkmann, Emergency Preparedness Analyst, Plant Support Branch
Approved By:	Gail M. Good, Chief, Plant Support Branch Division of Reactor Safety
Attachment:	Supplemental Information

EXECUTIVE SUMMARY

San Onofre Nuclear Generating Station
NRC Inspection Report No.50-361/99-14; 50-362/99-14

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 center, and emergency operations facility.

Plant Support

- Overall, performance in the 1999 biennial exercise was good. Good performance was consistently noted at the principal onsite emergency response facilities.

- The licensee was sufficiently involved and aware of the details of the investigation pertaining to the inaccurate emergency alert system message transmitted on September 29, 1999, following the annual siren test. The licensee also was appropriately aware of proposed corrective actions resulting from this event and the timetable for implementing them (Section P1).

- The performance of the control room staff was very good. Operators' actions were aggressive and proactive throughout the exercise. Analysis of plant conditions and corrective actions were well thought out and implemented with the appropriate procedures. Communications between the control room staff members were formal, clear, and effective. Notifications were made promptly. Operations personnel appropriately implemented the emergency plan (Section P4.2).

- The performance of the technical support center staff was good. The site emergency director demonstrated good facility management throughout the exercise. The technical team showed a questioning attitude toward resolving engineering issues. The health physics team managed onsite environmental monitoring teams well, validated the source term appropriately, and applied environs data effectively to correct dose assessment assumptions. Communications between functional groups in the technical support center were sometimes incomplete and delayed prompt analysis of certain events such as loss of containment sprays and a breach of the containment boundary. Some instances were identified where information known to the technical support center was not clearly communicated to other emergency response facilities, which adversely affected the overall exercise response (Section P4.3).

- The performance of the operations support center staff was good. Facility staffing and activation were rapid. Some lapses in command and control were observed, but these did not significantly impact the overall facility response. Responders and repair teams were kept well informed of radiation hazards, and repair team briefs were appropriate. Very good implementation of radiological protective actions for repair teams was observed (Section P4.4).

- The performance of the emergency operations facility staff was good. The facility was promptly staffed and activated (Section P4.5).

- Communication within the emergency operations facility and with other facilities was generally effective; however, poor communication to the senior response manager of the existence of a low-level radioactive release caused an hour delay in notifying the offsite agencies (Section P4.5).

- One offsite notification to the State of California was made 7 minutes after the 15 minute time requirement following the declaration of the site area emergency. This performance issue was identified by the licensee and entered into the corrective action system (Section P4.5).

- Protective action recommendations were timely, conservative, generally accurate, and upgraded appropriately (Section P4.5).

- Dose assessment activities were generally accurate, but conservative dose assessment modeling of a source term back-calculation, conservative modeling of a resulting dose projection, and a large scenario source term yielded an unreasonably extended protective action recommendation. The licensee entered this problem into its corrective action system for further investigation. (Section P4.5).

- Appropriate protective actions for emergency operations facility responders were taken, including frequent facility habitability surveys and the authorization of potassium iodide thyroid blocking agent (Section P4.5).

- The scenario was extremely challenging to all members of the onsite response organization. Its complexity forced consideration of extensive protective action recommendations as well as implementation of severe accident management guidelines and administration of thyroid blocking agent to some responders. Scenario control was effective in ensuring that the objectives were demonstrated (Section P4.6).

- The post-exercise facility critiques were generally very good. Participation in the technical support center brief was limited and few comments of negative performance were noted. The operations support center brief comments were focused almost exclusively on drill control issues and not performance issues (Section P4.7).

- The licensee's critique process did not identify the untimely radiological release notification to the offsite agencies (Section P4.7).

- The licensee's formal management critique was balanced and comments were discussed in the context of whether associated objectives were met. The licensee referenced corrective action system entries for the most significant exercise issues identified (Section P4.7).

IV. Plant Support

P1 Conduct of Emergency Preparedness Activities

a. Inspection Scope (92904)

The inspectors reviewed an event notification description of an emergency alert system message broadcast that was erroneously transmitted following the performance of the licensee's annual siren test. The inspectors interviewed the licensee's offsite emergency planning supervisor to determine the status of corrective actions for the erroneous broadcast.

b. Observations and Findings

The licensee performed its annual full-cycle siren test on September 29, 1999. This test was an extended sounding of all the licensee's sirens in the emergency planning zone. The licensee had prepared for this test by mailing notices to the residents and schools located in the emergency planning zone. These notices informed the residents and schools of the date and time of the test and that the planned siren activation would only be due to a test.

A test of the emergency alert system broadcast capability was included as part of the above test, since siren soundings during an actual emergency would be followed by such a broadcast. When the emergency alert system test was conducted, an actual civil alert emergency code, directing an evacuation, was erroneously transmitted on two cable television stations. No evacuation activity was noted, but the offsite emergency management agencies received approximately 200 telephone inquiries related to the siren activation and/or the television message.

The emergency alert system committee for the area containing the licensee's facility met to develop corrective actions to prevent recurrence of the above event. Its proposals, once finalized, were scheduled to be presented at the next meeting of the Interjurisdictional Planning Committee composed of the licensee and the principal offsite emergency management agencies in the 10-mile emergency planning zone.

c. Conclusions

The licensee was sufficiently involved and aware of the details of the investigation pertaining to the inaccurate emergency alert system message transmitted on September 29, 1999, following the annual siren test. The licensee also was appropriately aware of proposed corrective actions resulting from this event and the timetable for implementing them.

P4 Staff Knowledge and Performance in Emergency Preparedness

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

The licensee conducted the plume exposure phase of its full-scale, biennial emergency preparedness exercise on October 27, 1999. The exercise was conducted to test major portions of the onsite (licensee) and offsite emergency response plans. The licensee activated its emergency response organization and all emergency response facilities. The Federal Emergency Management Agency evaluated the offsite response capabilities of the state of California and the local response agencies. The Federal Emergency Management Agency will issue a separate report.

The exercise scenario was conducted using the plant control room simulator. The exercise was simulated on Unit 2, and initial conditions included the unavailability of a diesel generator and a high pressure safety injection pump. The exercise began at 8:03 a.m. with a 50-gallons per minute leak of reactor coolant from a control (rod) element assembly drive housing, which prompted an alert declaration. At 8:25 a.m., a simulated personnel injury was designed to exercise the procedure for evacuation of a potentially contaminated, injured person.

At 9:12 a.m., the affected control element assembly dropped into the core, which caused a large increase in the size of the existing pressure boundary leak. The control element assembly then was ejected from the reactor, which caused damage to adjoining control element assemblies such that they failed to insert. This condition resulted in a partial failure of the fuel cladding and increased the reactor coolant leak rate to 5000 gallons per minute prompting a site area emergency declaration. A second high pressure safety injection pump tripped during the transient, which limited the cooling flow to the reactor core.

The large reactor coolant leak with fuel damage caused containment pressure to rise to the setpoint for automatic initiation of containment spray. The trip of one containment spray pump and a discharge piping leak for the other pump caused containment spray to be ineffective in containment pressure reduction and radioactive iodine removal. These conditions generated a large inventory of radioactive gaseous fission products available for potential release from the containment.

At 10:03 a.m., a leak occurred in a containment penetration seal for one of the containment spray lines, which caused a breach of the containment barrier and the release of fission product inventory to the environment.

A leak from the only remaining high pressure safety injection pump occurred at 11:06 a.m., which caused a second release of radioactive fission products to the environment. Repairing the other high pressure safety injection pump, securing the leaking pump, and implementing severe accident management guidelines to limit the release of radioactive iodine from the containment were expected actions to mitigate the accident. The scenario was stopped at 1:30 p.m. after onsite objectives were demonstrated.

P4.2 Control Room

a. Inspection Scope (82301-03.02)

The inspectors observed and evaluated the control room simulator staff perform emergency tasks. These tasks included:

- Implementation of normal, abnormal, and emergency operating procedures
- Diagnosis of plant conditions and emergency classification
- Notifications and communications
- Adherence to the emergency plan and procedures

The inspectors reviewed applicable emergency plan sections, operating procedures, conduct of operations guidance, logs, checklists, and notification forms.

b. Observations and Findings

The operating crew utilized the appropriate normal, abnormal, and emergency operating procedures in response to exercise conditions in the plant simulator. Technical Specifications were referenced where appropriate and required actions were promptly identified and completed. For example, the scenario included a 50-gallons per minute reactor coolant leak which the operators diagnosed within a minute and quantified within 10 minutes. The operating crew determined that a plant shutdown was required.

The shift manager immediately recognized that plant conditions required implementation of the emergency plan and declaration of an alert based on a Technical Specification directed plant shutdown. Offsite notifications of local and state agencies were made within five minutes of the alert declaration, well within the 15-minute requirement.

Communications within the control room were formal, clear, and effective. Three-part communications, peer checks, and self-verification were consistently and appropriately performed. Communications with operators in the plant and other groups outside the control room were consistent with internal communication standards.

Reactor operator response to plant transients was accurate and timely. For example, when the control element assembly ejection event occurred, a rapid succession of events resulted in damage to the surrounding seven control element assemblies and a rapid decrease in plant pressure and pressurizer level. The reactor operators quickly diagnosed plant conditions appropriately and followed procedures.

Shift manager briefings were well organized, focused on plant priorities, solicited operator input and questions, and were conducted formally. Briefings also discussed success paths, actions required to restore equipment to service, and considerations for potential environmental hazards for response teams.

c. Conclusions

The performance of the control room staff was very good. Operators' actions were aggressive and proactive throughout the exercise. Analysis of plant conditions and corrective actions were well thought out and implemented with the appropriate procedures. Communications between the control room staff members were formal, clear and effective. Notifications were made promptly. Operations personnel appropriately implemented the emergency plan.

P4.3 Technical Support Center

a. Inspection Scope (82301-03.03)

The inspectors evaluated technical support center staff perform emergency tasks. These tasks included:

- Staffing and activation
- Facility management and control
- Emergency classification
- Accident and core damage assessment
- Dose assessment
- Communications
- Implementation of onsite protective actions for emergency workers
- Dispatch and coordination of onsite environmental monitoring teams
- Assistance and support to the control room and emergency operations center
- Adherence to emergency plan and procedures

The inspectors reviewed applicable sections of the emergency plan, procedures, and checklists. Inspectors reviewed facility logs and dose assessment documentation following the exercise.

b. Observations and Findings

The technical support center was promptly staffed following the alert announcement, with initial responders arriving within four minutes. The facility was declared activated 24 minutes after classification. The technical support center was fully staffed within 30 minutes of classification.

The site emergency director demonstrated good facility management throughout the exercise. The site emergency director ensured that all facility functions were performed and that onsite personnel were adequately protected. All emergency classifications were timely and accurate. Briefings were timely and complete with good attentiveness by the staff. Status boards were consistently maintained with accurate information and were updated in a timely manner. Facility staff maintained detailed logs of the event.

The technical group exhibited a good questioning attitude throughout the exercise, trying to resolve the many engineering questions. Engineers promptly performed core damage assessment procedures. Estimates of the extent of core damage were appropriate for the information available to the technical group.

There was especially good performance by the health physics team in tracking effluent source terms and applying environs data to correct dose assessment assumptions. The health physics group performed dose assessments aggressively, using plant parameters and environmental data, and showed a strong awareness of potential release paths, such as those existing from expected containment leakage pathways. The health physics group quickly processed reports of iodine concentrations from field monitoring teams and estimates of the iodine-noble gas ratio, noting immediately when iodine projections and iodine measurements did not agree. Additionally, the health physics group closely tracked the source term and appropriately revised source term information using field data.

Communications within each functional group were generally good, but untimely communications between functional groups affected overall facility performance. For example, the technical and health physics groups did not effectively integrate information which would have allowed them to promptly determine that containment sprays were ineffective or that a containment breach had occurred.

There were some instances of information known in the technical support center that were not clearly communicated to other emergency response facilities. For example, the technical support center staff was aware of the occurrence of a low level release during the alert and site area emergency classifications but did not quickly inform the emergency operations facility of that fact. Also, the dispatch of a repair team was delayed for approximately 15 minutes because of confusion between the technical support center and the control room about which train of high pressure safety injection was leaking.

The technical support center appropriately protected emergency workers. Security officers were moved away from the plume to reduce their radiation exposure. Numerous in-plant surveys were initiated and performed. The use of self-contained breathing apparatus was recommended for several emergency repair teams. Contamination control was good. Facility habitability surveys were performed regularly. Some emergency repair teams were given whole-body counts to better determine their internal exposure. The health physics team leader appropriately approved dose extensions for some emergency repair teams. Contrary to procedure, the health physics leader authorized potassium iodide for four teams without evaluating their potential thyroid dose and only logged authorization for two of these teams.

The technical support center properly requested and tracked emergency repair teams, assigning each an appropriate priority. The emergency advisor for operations maintained a constant knowledge of the status of operations support center teams. There was excellent tracking of all in-plant radiation survey teams and their reported results. The health physics radio operator, who was in communication with the onsite environmental monitoring teams, also did an excellent job of recording results from those teams.

c. Conclusions

The performance of the technical support center staff was good. The site emergency director demonstrated good facility management throughout the exercise. The technical

team showed a questioning attitude toward resolving engineering issues. The health physics team managed onsite environmental monitoring teams well, validated the source term appropriately, and applied environs data effectively to correct dose assessment assumptions. Communications between functional groups in the technical support center were sometimes incomplete and delayed prompt analysis of certain events such as loss of containment sprays and a breach of the containment boundary. Some instances were identified where information known to the technical support center was not clearly communicated to other emergency response facilities, which adversely affected the overall exercise response.

P4.4 Operations Support Center

a. Inspection Scope (82301-03.05, 03.08)

The inspectors observed the operations support center staff and repair teams perform emergency tasks. These tasks included:

- Facility staffing and activation
- Facility management and control
- Repair team activities
- Implementation of onsite protective actions

The inspectors reviewed applicable sections of the emergency plan, procedures, checklists, and facility logs.

b. Observations and Findings

Staffing and setup of the operations support center was very rapid. Responders began to arrive at the facility within two minutes after the alert announcement. The facility was activated 23 minutes after the alert declaration. The required responders were in place and the facility was operationally capable of performing its functions when it was activated.

Facility management and control were adequate. The emergency group leader briefed his staff regularly, but these briefs lacked some important information, such as radiological conditions. Important radiological and operational information was relayed to the group of responders located in the lunchroom adjacent to the operations support center. Some degradation of facility noise control occurred as the exercise progressed. At one point, the operations support center staff ignored a public address announcement of the general emergency declaration; however, this information reached them by telephone report soon after the announcement.

Repair team activities were very well controlled and performed. The two repair team briefs observed were very detailed and contained all necessary information for the teams to accomplish their tasks safely and efficiently. Dispatch of all repair teams was

prompt and consistent with the importance of the tasks each team had to perform. A few repair team dispatch sheets were missing some required information, but this information was able to be recovered by review of logs and other checklists.

Onsite radiation protection practices were very good. Repair teams were assigned dose limits, turn back values, and information for converting their dosimetry readings to a total effective dose equivalent value. Thyroid blocking agent was used for teams which were at risk for radio iodine uptake. Other protective actions, such as use of plastic protective clothing and self-contained breathing apparatus, were also used appropriately.

c. Conclusions

The performance of the operations support center staff was good. Facility staffing and activation were rapid. Some lapses in command and control were observed, but these did not significantly impact the overall facility response. Responders and repair teams were kept well informed of radiation hazards, and repair team briefs were appropriate. Very good implementation of radiological protective actions for repair teams was observed.

P4.5 Emergency Operations Facility

a. Inspection Scope (82301-03.04)

The inspectors observed the emergency operations facility staff perform emergency tasks. These tasks included:

- Facility staffing and activation
- Communications
- Notification of state and local response agencies
- Protective action decision making
- Offsite dose assessment
- Interaction with offsite response agency personnel

The inspectors reviewed applicable emergency plan sections, emergency plan implementing procedures, forms, dose projections, and press releases.

b. Observations and Findings

The emergency operations facility was promptly staffed and activated 39 minutes after the alert declaration, when minimum staffing was achieved. Offsite agency notification and protective action recommendation responsibilities were transferred to the emergency operations facility shortly thereafter. Turnover from the site emergency director to the corporate emergency director was thorough and conducted in a systematic fashion.

Communications within the emergency operations facility and between the emergency operations facility and other emergency response facilities were normally effective and timely; however, one significant exception to this normally effective communication was noted. The corporate emergency director was not fully apprised of the status of the

radiation monitor readings which confirmed an offsite release in progress until approximately 30 minutes after confirmation of elevated readings outside the containment. Other members of the emergency operations facility team, as well as the technical support center team, were aware of this condition earlier but did not communicate it to the corporate emergency director. The health physics leader in the emergency operations facility informed the offsite agencies that a radiological release was in progress before the corporate emergency director was informed. The corporate emergency director's initial unawareness of the existence of the release contributed to a significant delay (approximately one hour) in the official notification of the offsite agencies of the correct release status, which confused at least one offsite agency. This agency called the licensee for clarification of release status, because the oral report from the health physics leader and the official notification form sent at 9:46 a.m. conflicted on this point. Because the level of offsite dose rates was low (0.2 mR per hour at the exclusion area boundary at 9:45 a.m.) during this period in question, the actual risk to the public from this release was small.

Offsite agency notifications were generally timely; however, the initial site area emergency notification to the state of California was not sent until 22 minutes after the emergency declaration. This notification was partly delayed because the communicator in the emergency operations facility was preparing the written notification of a previous message prior to the voice notification of the site area emergency.

After the exercise, the licensee's staff identified this delay as a training issue and conducted remedial training for members of the emergency response organization involved in the delayed notification. All other notifications during the exercise were made within the required time limits. The licensee identified this performance issue and issued Action Request 991001266-03 to track it in its corrective action program.

The information transmitted in the offsite agency notifications was generally accurate, but some errors were noted which had the potential to affect offsite response. First, the 9:32 a.m. notification of the site area emergency and the 9:46 a.m. written follow-up notification both stated that no release of radioactivity was in progress although gaseous effluent monitor readings had begun increasing since 9:15 a.m. due to the loss of coolant accident that prompted the site area emergency declaration. These erroneous statements that no radioactive release to the environment was occurring caused some confusion among the offsite agencies, which prompted an additional request for information and clarification from the offsite agencies.

Second, erroneously high wind speed was reported on several notification forms which also caused confusion among the offsite agencies. The erroneous data was not acted upon; therefore, its impact on the overall response was not severe.

Protective action recommendations were timely and consistent with emergency plan implementing procedures. At 9:20 a.m., approximately one hour after the alert declaration, the corporate emergency director recommended a precautionary state beach evacuation, which was considered prudent given the elevated radiation monitor readings in containment and the known normal leakage rate from the containment. According to the licensee's procedures, a protective action recommendation to

evacuate the state beach at an alert declaration is appropriate with an ongoing, uncontrolled release to the environment.

At 10:16 a.m., approximately one hour following initial indications of a release of radioactivity to the environment, a notification was made to elevate the protective action recommendation to shelter all areas of the emergency planning zone based on a dose projection at the exclusion area boundary. This was the correct protective action recommendation for the current exercise conditions. This notification also correctly noted that a radioactive release was in progress.

The corporate emergency director properly approved press releases transmitted to the emergency news center. The content of the releases was generally clear and accurate considering the accuracy of the information upon which the releases were drafted.

Dose assessment personnel properly computed dose projections to support the protective action recommendations. Dose projection refinements, based on the back-calculation of the radioactive source term from field team samples were used to upgrade and confirm protective action recommendations. Following the general emergency declaration, an appropriate recommendation to evacuate the 10-mile emergency planning zone was issued.

Later, the recommendation was escalated as the health physics leader refined the dose projection based on field team data and estimates of release duration from the technical group. This new projection required evacuation from the affected sector out to a distance of 35 miles. The recommendation was not expected for the scenario as written and was not acted upon due to appropriate controller intervention. The recommendation was generated due to conservative dose assessment computer modeling assumptions for back calculating the radiological source term, conservative modeling assumptions for dose projections, and a large assumed source term. The recommendation was a valid conclusion based on licensee procedures and reported results. The licensee recognized this disparity between the scenario's dose projection assumption and the value calculated during the exercise. Action Request 19991001266-01 was entered into the licensee's corrective action program to evaluate the accuracy of the method of generating dose projections by back-calculation of field team readings.

Habitability of the emergency operations facility was properly determined during the exercise. Periodic internal and external surveys were conducted. Monitoring results in the emergency operations facility showed no increase above background during the exercise, but a strong potential for changing conditions prompted the health physics leader to recommend ingestion of potassium iodide for field teams as well as emergency operations facility personnel. Potassium iodide tablets were simulated to be administered to emergency operations facility personnel in accordance with procedures.

c. Conclusions

The performance of the emergency operations facility staff was good. The facility was promptly staffed and activated. Communication within the facility and with other facilities was generally effective; however, poor communication to the senior response manager

of the existence of a low-level radioactive release caused an hour delay in notifying the offsite agencies. One offsite notification to the State of California was made 7 minutes after the 15 minute time requirement following the declaration of the site area emergency. This performance issue was identified by the licensee and entered into the corrective action system. Protective action recommendations were timely, conservative, generally accurate, and upgraded appropriately. Dose assessment activities were generally accurate, but conservative dose assessment modeling of a source term back-calculation, conservative modeling of a resulting dose projection, and a large scenario source term yielded an unreasonably extended protective action recommendation. The licensee entered this problem into its corrective action system for further investigation. Appropriate protective actions for emergency operations facility responders were taken, including frequent facility habitability surveys and the authorization of potassium iodide thyroid blocking agent.

P4.6 Scenario and Exercise Control

a. Inspection Scope (82301, 82302)

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 July 29, and August 27, 1999, respectively. The inspectors discussed minor questions related to the exercise and objectives with licensee staff on September 24 and October 19, 1999. All questions 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 October 22, 1999).

The scenario events resulted in an initial inventory of radioactive material that was substantially larger than normally seen during exercise scenarios. The licensee designed this feature into the scenario in order to provide continuity of data for meeting the objectives of both the plume exposure exercise and the ingestion exposure exercise, which was scheduled for the following two days.

This large fission product inventory challenged the licensee and the offsite agencies' dose assessment staffs to provide appropriate protective action recommendations for the population at risk. The projected doses from the generated radioactive plume required consideration of protective actions at significantly longer distances than usually seen in similar exercises.

The scenario also challenged the technical support center staff by prompting them to enter severe accident management guidelines in order to mitigate the release effects. The large doses also challenged the operations support center staff by requiring the administration of thyroid blocking agent to certain team members.

No instances of improper controller-player interaction were observed. The controllers appropriately improvised data presentation to the players when unexpected scenario activities occurred. This practice helped preserve the scenario's credibility.

c. Conclusions

The scenario was extremely challenging to all members of the onsite response organization. Its complexity forced consideration of extensive protective action recommendations as well as implementation of severe accident management guidelines and administration of thyroid blocking agent to some responders. Scenario control was effective in ensuring that the objectives were demonstrated.

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 October 29, 1999, to determine whether the process would identify and characterize weak or deficient areas in need of corrective action.

b. Observations and Findings

The licensee held facility debrief critiques at the emergency response facilities immediately following the exercise. These post-exercise facility critiques were generally candid and self-critical with wide participation. One exception to this was the technical support center brief, where participants had little time to provide input and where comments on performance were mostly positive. Another exception was the operations support center brief, where comments were primarily directed to scenario control rather than performance issues.

The licensee's emergency planning staff and the NRC inspection team met on October 28, 1999, shortly after the exercise completion and discussed preliminary observations that each had made. The licensee had identified the late offsite site area emergency notification to the inspection team. Most of the performance issues the NRC team had identified were also identified by the licensee. A significant omission, however, was the licensee's failure to identify the untimely notification to the offsite agencies of the existence of the radiological release at the site area emergency. After discussion with the NRC inspection team, the licensee agreed that the release notification had not been timely and discussed that item in its formal management critique.

The licensee's formal, management critique was held on October 29, 1999, and was widely attended by senior management as well as senior emergency responders who participated in the exercise. The licensee's presentation of findings was appropriately balanced between positive and negative comments. Performance in risk-significant areas was discussed in context of whether the associated objectives were met. Significant issues were captured in the licensee's corrective action system for further investigation and resolution.

During the formal critique, the licensee covered the major performance issues which they had self-identified, such as the late offsite notification following the site area emergency declaration. Items which the NRC inspection team had identified and discussed with the licensee were also mentioned.

c. Conclusions

The post-exercise facility critiques were generally very good. Participation in the technical support center brief was limited and few comments of negative performance were noted. The operations support center brief comments were focused almost exclusively on drill control issues and not performance issues. The licensee's critique process did not identify the untimely radiological release notification to the offsite agencies. The licensee's formal management critique was balanced and comments were discussed in the context of whether associated objectives were met. The licensee referenced corrective action system entries for the most significant exercise issues identified.

P8 Miscellaneous Emergency Preparedness Issues (82301, 92904)

P8.1 (Closed) Inspection Follow-up Item (50-361, 362/9721-01): Exercise weakness-improper performance of air sampling for operations support center habitability surveys. The inspectors noted that routine habitability surveys were performed in the operations support center during the exercise. These surveys were performed in accordance with the appropriate emergency procedures. Log readings indicated that two air samples had been performed. The inspectors verified that the air samplers were properly configured to perform the samples. Furthermore, the inspectors verified that the actions which the licensee had committed to in its December 24, 1997, letter to the NRC were completed.

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 October 29, 1999. The licensee's management acknowledged the facts presented. No proprietary information was identified.

The Federal Emergency Management Agency and the NRC scheduled a public meeting in San Clemente, California, on November 1, 1999, to discuss the preliminary exercise results. The NRC inspection team leader gave a brief summary of the onsite inspection effort and the significant preliminary results.

ATTACHMENT

SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

Licensee

C. Anderson, Manager, Emergency Preparedness
D. Breig, Technical Manager
R. Clark, Manager, Quality Engineering and Operations
G. Cook, Supervisor, Regulatory Compliance
J. Fee, Manager, Maintenance
K. Fowler, Emergency Planning Coordinator
S. Giannell, Emergency Planning Coordinator
R. Golden, Manager, Communications
P. Handley, Supervisor, Offsite Emergency Planning
J. Hirsch, Manager, Chemistry
M. Hug, Supervisor, Emergency Planning
R. Krieger, Vice President, Nuclear Generation
J. Madigan, Manager, Health Physics
M. McBrearty, Compliance Engineer
H. Newton, Manager, Support Services
D. Nunn, Vice President, Engineering and Technical Support
J. Reynolds, Emergency Planning Coordinator
R. Sandstrom, Manager, Nuclear Training
A. Scherer, Manager, Nuclear Regulatory Affairs
J. Scott, Emergency Planning Coordinator
R. Waldo, Manager, Operations
J. Wallace, Manager, Security
M. Wharton, Manager, Nuclear Engineering Design
A. Wright, Emergency Planning Coordinator

NRC

J. Sloan, 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	Follow-up - Plant Support

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None

Closed

50-361; -362/9721-01	IFI	Exercise Weakness - improper performance of air sampling for operations support center habitability surveys.

Discussed

None

LIST OF DOCUMENTS REVIEWED

Emergency Plan and Procedures

Emergency Plan for San Onofre Nuclear Generating Station, Units 1, 2, & 3	Revision 9
SO123-VIII-10, Emergency Coordinator Duties	Revision 10
SO123-VIII-10.1, Station Emergency Director Duties	Revision 4
SO123-VIII-10.3, Protective Action Recommendations	Revision 4
SO123-VIII-30.3, OSC Operations Coordinator Duties	Revision 3
SO123-VIII-40, TSC Health Physics Leader Duties	Revision 12
SO123-VIII-40.1, OSC Health Physics Coordinator Duties	Revision 17
SO123-VIII-40.3, EOF Health Physics Leader Duties	Revision 5
SO123-VIII-40.100, Dose Assessment	Revision 8
SO123-VIII-50.3, Units 2 and 3 Core Damage Assessment	Revision 4
SO123-VIII-80, Emergency Group Leader Duties	Revision 8