

APPENDIX
U. S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report: 50-313/82-11
50-368/82-09

License: DPR-51
NPF-6

Dockets: 50-313
50-368

Licensee: Arkansas Power & Light Company
P. O. Box 551
Little Rock, Arkansas 72203

Facility: Arkansas Nuclear One Station, Units 1 and 2

Inspection At: Russellville, Arkansas

Inspection Conducted: May 18-20, 1982

Inspector: James F. Montgomery 9/24/82
David M. Rohrer, Emergency Preparedness Date
Analyst (Team Leader), NRC, HQ

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Reviewed by: D. M. Hunnicutt 9/24/82
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Reactor Project Section C

Inspection Summary

Inspection Conducted During Period of May 18-20, 1982
(Report No. 50-313/82-11 and 50-368/82-09)

Areas Inspected: This routine, announced inspection of the licensee's performance and capabilities during a full-scale exercise of their emergency plans and procedures involved approximately 400 inspection hours. This included: review of the appropriate licensee documents; observation of the actual performance of the licensee during the exercise; observation of the licensee's internal self-critique; and the conduct of meetings and briefings with the licensee, the Federal Emergency Management Agency, State, and local agencies.

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**HARC Human Affairs Research Center

Results: Within the areas inspected, no violations or deviations were identified. However, throughout this report, specific open items are identified where expeditious corrective actions by the licensee should be implemented or where the licensee should consider corrective actions in the normal course of improvements to their emergency plan procedures. The licensee is expected to respond in writing to each of these open items.

DETAILS1. Persons ContactedLicensee Personnel

W. Cavanaugh III, Senior Vice President, Energy Supply
J. Griffin, Assistant Vice President, Nuclear Operations
J. Levine, General Manager, ANO
D. Rueter, Director, Technical and Environmental Services
D. Sikes, Director, Fossil Operations
T. Cogburn, Duty Emergency Coordinator

2. Purpose of Inspection

The purpose of this inspection was to observe the licensee's onsite and corporate emergency organizations, emergency response facilities, and the licensee's interface with other emergency response organizations pursuant to 10 CFR 50, Appendix E.

3. Entrance Interview

The entrance interview was conducted on May 18, 1982.

4. Exit Interview

The exit meeting was held on May 20, 1982, at the Arkansas Nuclear One Station near-site Emergency Operations Facility auditorium. The meeting was conducted by Mr. David M. Rohrer, Emergency Preparedness Analyst, NRC Headquarters, Office of Inspection and Enforcement, representing Mr. John T. Collins, Regional Administrator of NRC, Region IV. Mr. Rohrer was assisted by Mr. Charles A. Hackney, Emergency Preparedness Analyst, NRC, Region IV, and by the inspection team of which Mr. Rohrer was the team leader. The licensee was represented by Mr. William Cavanaugh III, Senior Vice President for Energy Supply, and his staff. The licensee was given a summary of the inspection team's observations and comments on the licensee's conduct during the emergency exercise.

5. Licensee Action on Previous Inspection Findings

Not inspected.

6. Violation

No violations were identified during the exercise.

7. General Observations and Comments

The inspection team noted that a great amount of work had been expended by the licensee in developing and coordinating the scenario used for the exercise. While the scope and intent of the scenario were both generally adequate, the inspectors did observe specific areas where the level of detailed information provided by the controllers to the participating

players was either not adequate, did not consider appropriate ancillary data, or was processed in a form not suitable for use by the players. This resulted in the players not demonstrating adequately certain decision-making functions and certain protective actions. Further, the scenario contained entirely too much simulation of events, functions, actions, and conditions. Thus, the scenario prevented the licensee from effectively and adequately demonstrating certain key response functions (e.g., obtaining a post-accident sample of the primary water and health physics support to certain plant walkdowns). The problems with the processed data prevented or encumbered the players from performing certain important calculations.

Also, the inspectors noted that the number of controllers was not adequate to support the scope of the exercise; that certain controllers provided too much information to the players (prompting); and that the controllers were not adequately informed and prepared to perform their duties. Due in part to these problems, there was too much anticipation of events on the part of the players, causing some actions to be performed before plant status or procedures warranted.

Generally, the inspection team was concerned by the fact that certain key licensee response groups and individuals did not adequately get involved with the exercise to a point where they would respond to the "emergency" and not the scenario. They should be responding to the "emergency" and performing all of the decisionmaking and response actions associated with that emergency.

8. Specific Facilities Observed and Comments

8.1 Control Room Operations

The inspection team noted that generally the performance of the licensee's control room staff was very good. They adequately demonstrated their understanding of the emergency plan and procedures; quickly identified and properly classified the emergency classes as the "emergency" developed; performed timely notification of all appropriate response groups, including offsite authorities; provided significant and timely suggestions of corrective and response actions; and interfaced effectively and correctly with the Technical Support Center (TSC) and other licensee response groups.

However, the inspectors noted the following open items:

There was not a separate group of operations personnel assigned strictly to the exercise. Part of the actual onshift staff was both "playing" and actually operating the plant at power. (313/8211-01; 368/8209-01)

The callout of the radiochemist was simulated to the point that not even a phone call was made to determine if he could be reached. The licensee missed this opportunity to demonstrate Table B-1 staff augmentation. (313/8211-02; 368/8209-02)

Emergency procedures needed in the Control Room do not have any official index system to allow operators to quickly find the correct procedures. (313/8211-03; 368/3209-03)

The Shift Administrative Assistant (SAA) was not aware of the need for a location of the message authentication procedure and codes. (313/8211-04; 368/8209-04)

The emergency phone lists (for performing notification) contained incorrect names and phone numbers. (313/8211-05; 368/8209-05)

The time for notification (55 minutes) of the Chemistry/Health Physics Supervision was too long. (313/8211-06; 368/8209-06)

SAA did not have access to a clock to use to log in his actions regarding notification times for outgoing phone calls. (313/8211-07; 368/8209-07)

The controllers provided too much information to, and prompting of, the control room personnel. (313/8211-08; 368/8209-08)

8.2 Operational Support Centers (OSC)

The inspectors observed actions in the Health Physics OSC and noted that the area was in the hallway on the first floor of the administration building. Normally, the offices of the maintenance coordinator would have been used, but were not for purposes of the exercise. The health physics OSC Supervisor (actually an Emergency Radiation Team Leader) was in control of his group and demonstrated good knowledge of the plant and his duties as required by the emergency.

The demonstration of the ability of the health physics OSC to function under accident conditions did suffer due to the amount of simulation (e.g., use of hallway instead of offices, lack of raw data for air samplers, and smears). However, the activities that were observed, such as instrument checkout, and discussions of the activities that would occur during a real emergency (e.g., whole body counts, use of respirators, and logistics of moving the health physics functions to other locations) indicated that the health physics OSC personnel would perform adequately. This was due in part to the outstanding individual capability of the person playing the health physics OSC Supervisor.

However, the inspectors did note the following open items:

The health physics OSC Supervisor did not have an assigned communicator/logger to take care of the vast amount of information passed to the OSC during the emergency. (313/8211-09; 368/8209-09)

The OSC did not have a status board or other device to display plant status information, team assignments, actual location of team members, and up-to-date radiological survey results (maps). Furthermore, the process of keeping records (surveys, smears, air samples, dosimeter readings, and MPC-hours) needed improvement. The forms used were informally organized. (313/8211-10; 368/8209-10)

Data given to health physicists were inappropriate and sometimes unrealistic (i.e., air sample readings given in Ci/cc instead of gross counts). (313/8211-11; 368/8209-11)

The OSC lacked the organizational and record keeping structure to effectively handle and transmit data. (313/8211-12; 368/8209-12)

The OSC was not adequately informed of plant status (i.e., OSC health physics supervisor did not know ANO-1 had "tripped" at 0430 until 1355). (313/8211-13; 368/8209-13)

Some of the necessary forms and maps were not stocked in emergency kits at the OSC. (313/8211-14; 368/8209-14)

The OSC was activated prematurely (anticipation of upcoming events). (313/8211-15; 368/8209-15)

8.3 Technical Support Center (TSC)

The TSC, located in the ANO Administration Building, was the major licensee center for providing technical and engineering reviews and evaluation of the plant status and possible engineering corrective actions/repairs. The licensee also used their headquarters-based engineering groups to augment the capability of the TSC personnel.

The inspectors noted that, from an engineering and inplant support standpoint, the TSC operated adequately. However, there were numerous open items concerning the size, equipment, and administration of the TSC. These open items were as follows:

Management of the TSC appeared to be "by committee" and the licensee did not adequately demonstrate that firm command and control of the TSC resided with a single individual. This deficiency is important, from the standpoint of the necessity of the NRC to determine who exactly is the licensee's responsible agent in the TSC, should it become necessary for the NRC to issue immediate orders to the licensee regarding the operation of the plant prior to the activation of the Emergency Operations Facility (EOF). (313/8211-16; 368/8209-16)

There were not adequate formal transfers of command of the Duty Emergency Coordinator (DEC) position. (313/8211-17; 368/8209-17)

There was too much prompting of the players by the licensee controllers. (313/8211-18; 368/8209-18)

There was not adequate and real-time radiation dosimetry coverage for either the TSC facility or the people in it. The Continuous Air Monitor (CAM) was moved away from the TSC because it was too noisy. Some TSC staffs were not provided with adequate dosimeters (e.g., some received no dosimetry and no TLD dosimetry was provided). (313/8211-19; 368/8209-19)

The TSC personnel were not adequately trained in the use of the communication equipment in the TSC. (313/8211-20; 368/8209-20)

Meteorological information was not available for the TSC personnel to use in their dose calculations. (313/8211-21; 368/8209-21)

The plant status boards were maintained current, however, they were not located such as to be visible to all TSC personnel and there was no trending of plant data in either the TSC or the EOF. (313/8211-22; 368/8209-22)

There were no dose assessment, release plume tracking, or plant radiological survey status boards in the TSC. This contributed to the DEC not being aware of available field monitoring data. (313/8211-23; 368/8209-23)

The NRC HPN and ENS telephones were not immediately accessible to the TSC personnel because they were in the radio room and not the TSC work area. (313/8211-24; 368/8209-24)

Information developed by the various small groups working on different aspects of the emergency response in the TSC was not adequately shared with other groups and there were no periodic briefings of the TSC staff by the TSC management. (313/8211-25; 368/8209-25)

Only dose rates were calculated in the TSC, not integrated doses which were needed to adequately determine necessary protective actions. (313/8211-26; 368/8209-26)

Coordination between the licensee and the State, on the early warning to the public, did not appear to be adequate because of the long time elapsing between giving the recommendation and the sounding of the sirens. (313/8211-27; 368/8209-27)

The size of the TSC was inadequate to support the TSC staff and the NRC. (313/8211-28; 368/8209-28)

The habitability of the TSC did not meet the criteria of NUREG-0696 in that ventilation, filtration, and isolation capability was not provided. (313/8211-29; 368/8209-29)

Continuous radiation monitoring devices, with both audible and visual alarms, for measuring direct radiation inside the TSC were not provided. (313/8211-30; 368/8209-30)

Continuous air monitoring, with audible and visual alarms, was not provided in the TSC proper. An air monitor was provided outside the TSC in the hallway, it was checked routinely, however, some checks on chart were not dated, timed, and initialed. (313/8211-31; 368/8209-31)

Calculation of projected offsite doses appeared to be slow and cumbersome. Projected offsite dose rate calculations were not available from the TSC for 45 minutes after effluent release data was available. The TSC dose assessor used the procedure but was observed to be paging back and forth through the procedure to complete the calculations. (313/8211-32; 368/8209-32)

The Health Physics Superintendent indicated that he was in control of offsite monitoring teams, however, no accumulated dose data was observed to be maintained for the team members. (313/8211-33; 368/8209-33)

8.4 Media Center

The licensee's media information release center was located in the auditorium of the EOF. While the licensee did provide adequate briefings and information releases to the media, the inspector noted the following open items:

The inspectors noted that the Incident Response Director (IRD) spent an inordinate amount of time preparing for and giving press briefings. The inspector considered that, while there are no explicit regulatory requirements to preclude this action by the IRD, the IRD was removed from the mainstream of his vested command, control, and decisionmaking function to a point where the inspectors questioned a number of actions which were apparently performed by other members of the EOF staff which were not delegated actions from the IRD. (313/8211-34; 368/8209-34)

The licensee briefings and information releases were too technical and contained too much jargon. (313/8211-35; 368/8209-35)

The licensee developed visual aids which were not adequately used to augment the briefings. (313/8211-36; 368/8209-36)

The licensee should consider using professional public/media relations individuals to give the media briefings and augment them with technically qualified backup personnel. (313/8211-37; 368/8209-37)

Specific procedures are needed for the operation of the media center, preparation and approval of releases, and conduct of briefings. (313/8211-38; 368/8209-38)

Status boards and chronological events boards are needed in the media center. (313/8211-39; 368/8209-39)

Specific procedures and plans for rumor control are needed. (313/8211-40; 368/8209-40)

8.5 Emergency Operations Facility (EOF)

The licensee's near-site EOF is located outside of the licensee's protected area and approximately 0.65 miles from the reactor buildings. The inspectors toured the EOF facilities and observed the licensee's operations in those facilities during the exercise. The inspectors noted the following open items:

The EOF main decisionmaking rooms did not contain adequate space or provisions for face-to-face contact between the IRD and the NRC onsite representatives. (313/8211-41; 368/8209-41)

While the plant status board was updated frequently, it was too small for the data to be seen by the EOF staff and there was not adequate space devoted to radiological considerations relative to the emergency. (313/8211-42; 368/8209-42)

There was no trending in the EOF of important parameters. (313/8211-43; 368/8209-43)

Background conversation noise levels, while generally kept low, at times did become distracting for the licensee EOF staff. (313/8211-44; 368/8209-44)

The layout and size of the EOF main decisionmaking area was not adequate and would be even less adequate should the TSC become uninhabitable during an emergency. (313/8211-45; 368/8209-45)

The EOF was activated prematurely (in anticipation of upcoming emergency events), and special equipment associated with the emergency response was pre-positioned. The setup of the EOF was started almost 4 hours before it would have been required by the exercise scenario. (313/8211-46; 368/8209-46)

Radiological monitoring in and around the EOF was not adequate. Air samples were not taken in a timely manner following the release, the air sampling locations did not enable representative samples to be taken around the EOF, personnel were not monitored when entering the EOF, and the capability of the EOF decontamination facility was not demonstrated as it was not activated. (313/8211-47; 368/8209-47)

The inspectors did not observe a formal transfer of command from the TSC to the EOF, or from the IRD to his alternate, when the IRD left to perform media briefings. (313/8211-48; 368/8209-48)

The licensee performed a simulated shift change on paper but did not demonstrate the actual capability to perform for protected periods of time during emergency situations. (313/8211-49; 368/8209-49)

The licensee did not demonstrate the capability to formulate specific plans for the recovery of the site and its environs following an emergency. (313/8211-50; 368/8209-50)

There were not adequate briefings of the EOF staff to keep them abreast of the events of the emergency and planned actions. (313/8211-51; 368/8209-51)

Coordination of the decision to downgrade the emergency and the process by which that decision was implemented was not adequate. (313/8211-52; 368/8209-52)

Piping and Instrumentation Drawings (P&IDs) used in the EOF were of poor quality and there was not adequate space provided to lay them out for work. (313/8211-53; 368/8209-53)

The licensee should, when time permits, confer with the NRC when making decisions to allow selected individuals to receive radiation exposures during emergency situations, which exceed the limit established for exposure during normal operations as specified in 10 CFR Part 20. (313/8211-54; 368/8209-54)

8.6 Corporate Office Support

The inspectors briefly toured and observed operations of the licensee's corporate response facility located in Little Rock, Arkansas, and noted the following open items:

The onshift duty officer in the Little Rock Control Center (LRCC) did not have adequate background or training to enable him to understand the technical jargon used during the notification of the emergency from the ANO Control Room. Further, the duty officer was not familiar with the operation of the recording equipment in the LRCC. (313/8211-55; 368/8209-55)

The corporate Environmental Monitoring teams were dispatched to the ANO site prematurely in anticipation of upcoming events of the emergency. (313/8211-56; 368/8209-56)

9. Specific Important Areas Observed and Comments

9.1 Plant Walkarounds

A. Plant Walkaround (Nonradiological Controlled Areas)

This task was initiated by the Shift Supervisor after the simulated earthquake. The controller unnecessarily prompted the Shift Supervisor (SS) such that the SS was not allowed latitude to exercise his judgement on the extent (number of personnel and areas to be surveyed) of the walkthrough. The SS made an attempt to initiate a thorough walkthrough but the controller interceded.

The auxiliary operator and two trainees were requested to survey for damage to structures and equipment. All simulated damage was quickly found and the nature and location of damage was relayed to the control room. The survey teams did not have health physics coverage and the controller felt that the radiation levels (from the radioactivity in the letdown system) would not have significantly increased the radiation levels in the areas surveyed.

The control room controller told the SS that all area radiation monitors showed normal levels, and although the SS thought this information was unrealistic, this condition may have prevented the SS from assigning HP coverage.

Overall, and especially the performance of the auxiliary operators, this portion of the exercise was adequate.

B. Plant Walkaround (Radiological Controlled Areas)

This task, initiated by plant engineers, was not in the scenario. Two teams of two engineers, each with a health physics technician, were to survey the auxiliary building. At this time, there were simulated elevated radiation levels from the letdown system in portions of the auxiliary building but no known airborne radioactivity. However, one HP team technician recommended respirators (in addition to protective clothing), and these were worn by all team members. Communication (face-to-face and telephone) among the team while wearing respirators was adequate. The health physics coverage (air sampling, smears, instrument selection, and use) was adequate. The sample disposition and recordkeeping was adequate. The engineers made a thorough survey of their assigned portion (i.e., bottom half) of the auxiliary building. Simulation was essentially nonexistent and the team found some minor items that were in need of (actual) repair.

9.2 Fire Bridgade

At 0915, a fire started in an electrical penetration duct due to an electrical short. At 0924, the first fire team members began arriving at the scene. By 0932, the fire had been extinguished and smoke removal had begun. At 0934, the team leader called for health physics support to survey the area for radiological hazards.

While the fire brigade members generally performed adequately, the inspector did note the following open items:

The licensee's plant public address system was not loud or clear enough, in high background noise areas, to be understood by the members of the fire team or others required to respond to an emergency announcement. (313/8211-57; 368/8209-57)

The members of the fire team did not have radios or sound equipment or self-contained breathing apparatus (SCBA) masks to enable them to maintain communications with each other and the control room. The only report made to the control room on the status of the fire was made by telephone, well after the fire was out. (313/8211-58; 368/8209-58)

9.3 Medical Emergency

At 1000, during a plant walkdown, one of the plant maintenance crew fell and injured himself. The accident was simulated to occur inside the controlled access area. Area radiation readings were 2 to 3 mrem/hr, and the individual had surface contamination ranging from 10,000 DPM/cm² to 25,000 DPM/cm². The individual was conscious, with a compound fracture of the leg and was complaining of neck pains.

The inspectors noted that there were numerous problems associated with the licensee's response to the medical emergency, and these are summarized in the following open items:

The licensee's response to the medical emergency contained too much simulation of events and actions. (313/8211-59; 368/8209-59)

The first-aid team did not demonstrate adequate triage for injury on the victim. (313/8211-60; 368/8209-60)

The first-aid treatment did not begin until approximately 10 minutes after the medical team arrived on the scene. (313/8211-61; 368/8209-61)

Vital signs were not taken. (313/8211-62; 368/8209-62)

Treatment for shock did not begin until 20 minutes after the medical team arrived. Treatment was ineffective and minimal. (313/8211-63; 368/8209-63)

The medical kit did not contain adequate supplies (i.e., neck collar, inflatable splint, flashlight, forms for recording data). (313/8211-64; 368/8209-64)

The team leader was not decisive and did not give clear assignments to team members resulting in a lack of organization and ineffective treatment to the patient. (313/8211-65; 368/8209-65)

No preliminary decontamination was performed, and anti-Cs should have been removed prior to transport to the hospital. (313/8211-66; 368/8209-66)

Dosimetry was removed from ambulance personnel and the patient at the control point and no new dosimetry was issued. (313/8211-67; 368/8209-67)

Too much information was given by the controller to the team during prestaging and briefing. (313/8211-68; 368/8209-68)

The patient's pocket dosimeter was read by the HP technician, but no record or report of readings were made. (313/8211-69; 368/8209-69)

No form(s) was used to record patient's vital signs, injuries, contamination levels and areas, dosimetry information, or personal data. (313/8211-70; 368/8209-70)

9.4 Repair and Corrective Actions

The following open items were noted:

All repair and corrective actions were simulated and thus, the licensee did not take the opportunity to demonstrate capabilities in these areas. The inspectors did note that a good discussion was held to determine methods to keep the doses for one corrective action reentry as low as reasonably achievable (ALARA), but the actual reentry was not done. Further, no discussion of the use of potassium iodide (KI) for the emergency workers was observed. (313/8211-71; 368/8209-71)

It is strongly recommended that actual entry and operations be performed in areas where actual levels and conditions permit, to demonstrate team interaction, dose record keeping, communication ability while wearing SCBAs, and effectiveness and briefings. (313/8211-72; 368/8209-72)

9.5 Site Evacuation & Personnel Accountability

At 1215, a plant evacuation was announced over the public address system and the plant warning horn sounded. Plant personnel were evacuated to the parking areas and an accountability was initiated

The inspectors noted that the processing of the badges of persons evacuating the site took 8 minutes. However, that still left approximately 160 to 170 persons to be accounted for by hand. Those people were the onsite emergency workers and other essential personnel.

During the site evacuation and accountability process, the inspectors noted the following open items:

Full accountability of all personnel onsite took 58 minutes, which does not meet the 30-minute criteria. The excess 28 minutes was expended trying to account for only 11 unaccounted for persons. (313/8211-73; 368/8209-73)

The PA system announcement was again difficult to hear and understand. (313/8211-74; 368/8209-74)

Evacuated site personnel were not monitored for contamination during the evacuation or later at the EOF. Further, the portal monitors in the security building were moved out of the way to facilitate egress. This was a potentially serious lapse of accepted health practices. (313/8211-75; 368/8209-75)

9.6 Post-Accident Sampling System (PASS)

The following open items were noted:

The PASS was inoperable at the time of the exercise. The extent of simulation was excessive and, although the radiochemistry personnel appeared to be very knowledgeable of the procedures and operation of the facility, no samples were taken and analyzed. Furthermore, the entire process of post-accident sampling, from initial decision to final sample disposition and reporting of results, including information flow among the PASS, control room, and HP was not adequately demonstrated. Again, this appears to have been a problem with the scenario, and not with the competence or abilities of the personnel. (313/8211-76; 368/8209-76)

The NRC players, on a number of occasions during the exercise, requested information on the isotopic analysis of the reactor coolant system sample, but that information was not available. The inspectors later determined that piping into the PASS was valved off in the auxiliary building and that the electrically operated valves in the PASS system were not connected to power. Further, the inspectors discussed with the licensee the ability to obtain a primary coolant sample during a power failure. There was concern expressed by the inspectors that loss of onsite and offsite power might prevent the licensee from obtaining a representative sample of the primary coolant, since the sample system is electrically operated. (313/8211-77; 368/8209-77)

9.7 Offsite Radiological Monitoring

The inspectors observed the operations of the licensee's offsite monitoring teams and noted the following open items:

The offsite monitoring team emergency equipment kits did not contain adequate sets of necessary procedures. (313/8211-78; 368/8209-78)

The field teams had access to the controllers plume maps for the entire day and thus, did not adequately demonstrate their capability to project where the plume could move during the exercise and to accurately determine the size and shape of the plume. (313/8211-79; 368/8209-79)

The field teams did move out of the center of the plume where the air samples were taken to get to an area of low background radiation levels to perform counts of the air samples. (313/8211-80; 368/8209-80)

"Contaminated" samples were handled by bare hands and there was confusion as to the proper disposition of the samples when they were delivered back to the EOF. (313/8211-81; 368/8209-81)

There were breakdowns of the air sampling equipment and the transport vehicle. (313/8211-82; 368/8209-82)

There was confusion during the transfer of offsite monitoring responsibilities from the site teams to the corporate teams from Little Rock. (313/8211-83; 368/8209-83)

9.8 Dose Assessment and Protective Action Recommendations

The inspectors observed the operation of the dose assessment groups in both the TSC and EOF and noted the following open items:

No projected doses or integrated doses were calculated. Only the dose rates were calculated as the State used only dose rates to determine protective actions. This was inadequate because, if the release was of short duration, even though the dose rates may be high, the individual members of the public would receive a dose which would be significantly lower than the lower ranges of the Environmental Protection Agency Protective Action Guide values. This would lead the State to declaring unnecessary evacuations. Thus, not only was the integrated dose not considered, the concept of release duration was not factored into the decisionmaking for offsite protective actions. (313/8211-84; 368/8209-84)

The inspectors did not observe the licensee making any recommendations to the State regarding the need for evacuation. The

only protective action recommendation by the licensee, which was observed, was for restrictions on the use of milk in the plume pathway. (313/8211-85; 368/8209-85)

The entire sequence of meteorological data, along with the associated stability class, was given to players at the beginning of the exercise. This permitted the players to have advanced knowledge of the changes in wind speed and direction and therefore, facilitate the positioning of the offsite monitoring teams and dose rate calculations. The data should have been provided point-by-point. (313/8211-86; 368/8209-86)

In the first set of calculations, the onsite TSC provided different dose rates than the Dose Assessment Coordinator in the EOF. This resulted in a different emergency level being declared initially. The discrepancy was quickly resolved. (313/8211-87; 368/8209-87)

The Offsite Monitoring Center was indicating the time the data was given to them by the Dose Assessment Coordinator (DAC) while the DAC was using the time the data was collected. This situation was eventually corrected. (313/8211-88; 368/8209-88)

Offsite monitoring data from State teams was not used by the licensee for their overall dose assessment because there were large delay times before the State transmitted the data to the licensee. The data did not include the time when the measurements were made. (313/8211-89; 368/8209-89)

There was confusion as to the exact time when the release started. Approximately 30 minutes elapsed before the dose assessment people were aware that the release had started. (313/8211-90; 368/8209-90)

The licensee did not include consideration of the evacuation time estimates along with the projections for doses in their decisionmaking for recommending offsite protective action. (313/8211-91; 368/8209-91)

9.9 Protection for Emergency Workers

The inspectors reviewed the licensee's general provisions for protecting the emergency workers and noted the following open items:

The licensee employed a pregnant female worker during the emergency to operate a computer terminal in the EOF. The licensee needs to be more aware of the condition of its female personnel and limits on their use during emergencies. (313/8211-92; 368/8209-92)

The licensee should consider the stocking of special supplies of "fresh" thermoluminescent dosimeters (TLD's) for use during emergencies to provide a better tool for the evaluation of doses received by their emergency workers. (313/8211-93; 368/8209-93)

The licensee should make specific consideration of the use of KI a part of their emergency preparedness implementing procedures. (313/8211-94; 368/8209-94)

The inspectors were concerned by the lack of a visible and well organized system to monitor and control radiological exposure of all emergency workers. Such a system would include adequate active radiological surveys, air sampling and counting, monitoring of personnel for contamination, and a reading of dosimetry devices. (313/8211-95; 368/8209-95)

10. Summary

While the NRC inspectors did note a number of areas where the licensee could improve their response capabilities, the inspectors concluded that the AP&L emergency response organization demonstrated that they have the capability to protect the health and safety of the public should a radiological emergency take place at the ANO site. However, the inspectors were concerned with the excessive use of simulated action by the licensee during this exercise. Due to over simulation, the licensee did not take the opportunity to adequately demonstrate their emergency response capabilities in a number of crucial areas. The actions simulated in this exercise should be fully demonstrated during the next full-scale exercise.

Also of concern were the many open items identified in this inspection report. The licensee will be expected to respond in writing to these open items and resolve all problems which have been identified.