U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-461/89020(DRSS)

Docket No. 50-461 License No. NPF-62

Licensee: Illinois Power Company
500 South 27th Street
Decatur, IL 62525

Facility Name: Clinton Power Station, Unit 1

Inspection At: Clinton Site, Clinton, Illinois

Inspection Conducted: June 27-29, 1989

Inspectors: T. Ploski 7/12/89
T. Ploski Date

J. Patterson 7/12/89
J. Patterson Date

Approved By: T. Ploski 7/12/89
for W. Snell, Chief Date
Radiological Controls and
Emergency Preparedness
Section

Inspection Summary

Inspection on June 27-29, 1989 (Report No. 50-461/89020(DRSS))
Areas Inspected: Routine, announced inspection of the annual emergency preparedness exercise (IP 82301 and 82302) and evaluation of the June 1, 1989, Emergency Plan activation (IP 92701). The inspection involved five NRC inspectors.
Results: The scenario was challenging. However, due to an unrelated actual reactor trip and a suspected transformer fire, the manager of the Emergency Operations Facility terminated the exercise so that participants would be available as needed to assist onshift personnel. Sufficient objectives had been demonstrated before exercise termination so that resumption of the 1989 exercise was not warranted.

Overall performance during the abbreviated exercise was successful. However, an Open Item was identified regarding inconsistent interpretations of several Emergency Action Levels related to a reactor trip. Another Open Item related to the failure to inform State and NRC officials of the simulated onsite transportation accident which involved transport of a supposedly contaminated, injured victim to a local hospital. This notification requirement had become overshadowed by subsequent scenario events. Several improvements were recommended, primarily related to logkeeping, performing a more meaningful demonstration of onsite accountability provisions, and preplanning for responding to a transportation accident having contamination control complications.

The licensee's actual response to June 1, 1989 Emergency Plan activation was well done with respect to event classification and offsite notifications. A number of problems were self-identified during a thorough self-evaluation of the off-hours activation of emergency responders. Corrective actions taken thus far were appropriate and on schedule.

DETAILS

1. Persons Contacted

a. NRC Observers and Areas Observed

T. Ploski, Control Room Simulator, Emergency Operations Facility (EOF)
J. Patterson, Operations Support Center (OSC) and Inplant Teams
J. Hickman, Technical Support Center (TSC)
R. Serbu, Transportation Accident Scene, Offsite Monitoring Team Activation, EOF
G. Bryan, TSC

b. Licensee Representatives

J. Perry, Assistant Vice President, Nuclear
J. Wilson, Manager, Clinton Power Station
D. Waddell, Director, Emergency Response
W. Yarosz, Supervisor, Emergency Exercises

The above and 35 other licensee representatives attended the June 29, 1989 exit interview.

2. Emergency Plan Activation (IP 92701)

At about 00:45 a.m. on June 1, 1989, Main Control Room (MCR) personnel observed a pressure drop in a recirculation pump's seals. The reactor was at about 40 percent power. The drywell floor drain sump flow recorder was utilized to quantify the reactor coolant system's leakrate. The Shift Supervisor (SS) correctly declared an Unusual Event at 00:55 a.m. when the unidentified leakrate exceeded 5 gallons per minute (gpm). The SS declared an Alert at 1:00 a.m. when the leakrate exceeded 50 gpm. After the reactor recirculation pump was isolated from the reactor vessel, an operator entered containment and isolated seal water flow to the recirculation pump. By about 1:40 a.m., the measured leakrate decreased to less than 5 gpm. The SS downgraded the classification to an Unusual Event, while operators commenced a normal plant shutdown. The Unusual Event was terminated at 3.25 a.m.

The inspector reviewed records generated by licensee staff during this Emergency Plan activation and records associated with the licensee's evaluation of its Emergency Response Organization's (ERO) activities. The initial emergency classification and subsequent reclassifications were made in a timely manner in accordance with the Station's Emergency Action Levels (EALs). State and NRC officials were notified of the Unusual Event, subsequent reclassifications, and the event termination in a timely and adequately detailed manner. Due to the proximity of the declaration times, only one call was made to initially inform the NRC Operations Center of the Unusual Event and the Alert declarations made at 00:55 and 1:00 a.m., respectively. An "Event Notification Worksheet," analogous to the form utilized by NRC duty officers, was adequately utilized by onshift personnel to document their conversations with the NRC duty officer.

The licensee's internal evaluation of the Emergency Plan activation was thorough and well documented. The evaluation included interviews with about 50 ERO members. The evaluation report No. LS-89-0054, dated June 12, 1989, included: a chronology of plant status and associated emergency preparedness decisions; lessons learned; and a number of self-identified problems, their causes, and proposed corrective actions. Self-identified problems included: a pager activation problem; an autodialer problem; several erroneous telephone numbers in the ERO callout list; and difficulties encountered by several persons in gaining access to the corporate headquarters building and the Joint Public Information Center (JPIC). Several ERO members had also made unauthorized calls in an attempt to obtain more information before reporting, such as to determine whether the Alert declaration was related to a drill scheduled for later that morning. Several ERO members, who arrived onsite after the Alert had been downgraded, were uncertain whether they were still expected to report to their assigned emergency response facilities.

The licensee developed a schedule for corrective actions in response to each self-identified item. Based on a review of this schedule with members of the licensee's emergency preparedness staff and a spot check of documentation on several completed corrective actions, it was concluded that the licensee's corrective actions were appropriate and on schedule.

Based on the above findings, this portion of the licensee's program was acceptable.

3. General

An exercise of the Clinton Power Station's Emergency Plan was conducted at the Clinton Station on June 28, 1989. The exercise tested the licensee's capabilities to respond to a simulated accident scenario. The licensee's exercise objectives and scenario narrative summary are attachments to this report. This exercise did not involve the full or partial scale participation of State and county agencies.

4. General Observations

a. Procedures

This exercise was conducted in accordance with 10 CFR Part 50, Appendix E requirements using the Clinton Power Station Emergency Plan and related implementing procedures.

b. Coordination

The licensee's response was generally coordinated, orderly and timely. If scenario events had been real, actions taken by the licensee's Emergency Response Organization (ERO) would have been sufficient to allow State and local authorities to take appropriate actions to protect public health and safety.

c. Observers

The licensee's observers monitored and critiqued the exercise, as did five NRC inspectors.

d. Exercise Critiques

The licensee presented its preliminary exercise findings on June 29, 1989. This presentation was followed by the NRC exit interview, during which the NRC's preliminary findings were summarized and discussed with those licensee representatives identified in Section 1 of this report.

5. Specific Observations

a. Main Control Room (MCR) Simulator

By 8:15 a.m., the Shift Supervisor (SS) and the Line Assistant SS (LASS) correctly concluded that the rapid decrease in condensate storage tank level was related to the transportation accident reported several minutes earlier. They also realized that condenser vacuum would soon be lost due to the combination of a stuck open condensate valve and the damage to the condensate storage tank. MCR staff followed the operating procedure for the loss of the condensate storage tank. A controlled reactor shutdown was ordered at about 8:23 a.m.

Meanwhile, the SS and LASS ensured that a first aid team, several Radiation Protection Technicians (RPTs) and several operators were dispatched to the transportation accident scene. The SS was later informed that an ambulance had been requested and was enroute to the site. However, since the SS had received no report from the scene that the accident victim had become contaminated, he correctly did not declare an Unusual Event for a contaminated, injured person requiring hospital care, as had been anticipated by the scenario. Command of response activities at the accident scene was soon transferred to Technical Support Center (TSC) staff.

A simulated reactor trip occurred at 8:25 a.m. The "A Operator" quickly announced that some control rods had failed to automatically or manually fully insert. By this time, condenser vacuum had already been lost. While MCR personnel followed procedures to initiate boron injection using the Standby Liquid Control (SLC) system, the SS and Shift Technical Advisor (STA) reviewed the Station's Emergency Action Levels (EALs). At 8:28 a.m., the SS incorrectly declared an Alert for "failure of the Reactor Protection System to initiate and complete a SCRAM and bring the reactor subcritical." While TSC staff were still activating the facility, its Emergency Operations Supervisor called the SS and recommended that a Site Area Emergency be declared for a "transient requiring operation of shutdown systems with failure of SCRAM (ATWS)." The SS accepted this timely recommendation and correctly declared a Site Area Emergency at 8:48 a.m. The licensee must reevaluate the

training given to licensed personnel on the EALs for Category 9.2 (Failure to SCRAM) to better ensure that persons having emergency classification responsibility have a correct and consistent interpretation of the Alert and Site Area Emergency EALs. This is an Open Item (50-461/89020-01).

Between about 8:30 a.m. and 9:15 a.m., the STA was heavily involved in preparing and transmitting the initial notification messages for both emergency declarations to State and NRC duty officers. The STA also handled the message verification callbacks from the State's duty officer. During this time period, the SS and LASS maintained an overview of MCR activities and directed licensed operator actions. At the exit interview, the licensee indicated that a training program is underway so that certain non-licensed operators (unit attendants) will be qualified to function as MCR communicators to State and NRC officials to relieve the STA of the primary responsibility for these tasks.

The initial notifications to State and NRC duty officers for both emergency declarations were completed in a timely manner. Messages to both organizations were drafted using preformatted message forms and were approved by the SS prior to verbal transmittal. While the messages to the NRC included plain language descriptions of the relevant EALs for the Alert and Site Area Emergency declarations, the NRC duty officer was not informed of the apparent damage to the condensate storage tank and the associated loss of condenser vacuum.

An orderly transfer of command and control from the SS to the TSC's Station Emergency Director (SED) took place at about 9:00 a.m. The SS was later informed when the SED had transferred lead responsibility to the Emergency Operations Facility's (EOF's) Emergency Manager (EM). These transfers of command, as well as the emergency declarations, were promptly announced to MCR staff, and then to onsite personnel over the Station's public address system. As the exercise progressed, MCR operators made good efforts to repeat back instructions from the SS or LASS to better ensure proper understanding.

The MCR staff's conversations were tape recorded. A MCR logbook was initiated at the beginning of the exercise. However, no entries were made in this logbook between about 8:13 a.m. and at least 9:15 a.m., which was a busy time period in the MCR Simulator. A Staff Assistant SS (SASS) provided a valuable service in keeping an informal record of various MCR actions and conversations on a notepad.

In addition to the Open Item, the following items should be considered for improvement:

- The NRC Duty Officer should be promptly informed of known aspects of a plant transient so that the NRC's ERO would have had a more complete picture of plant status.

- The MCR log should be maintained in the appropriate logbook.

b. Technical Support Center (TSC)

The TSC was activated following the Alert declaration, and was fully operational within about 20 minutes of that declaration. Security personnel established and maintained adequate access control and accountability of TSC staff. The SED promptly informed his staff when he had assumed command of onsite emergency response efforts and when he later transferred this responsibility to the EOF's EM. Procedurally required notifications of these transfers of command to State and NRC duty officers were either actually made or simulated as the exercise progressed.

The TSC staff soon relieved the MCR of all responsibility for the transportation accident response, including the interface with the offsite organizations involved in ensuring that the accident victim, who had received simulated contamination from liquid discharged from the supposedly ruptured condensate storage tank, received hospital care. However, prior to exercise termination, neither MCR, TSC, nor EOF staffs had notified State and NRC officials that a vehicle accident had occurred which resulted in the transport of a contaminated, injured victim to a local hospital. The failure of the licensee's ERO to follow procedural guidance and inform NRC and State duty officers of the transport of a simulated contaminated, injured victim to a local hospital is an Open Item (50-461/89020-02).

The TSC's functional group leaders kept the SED adequately updated on their actions, while the SED kept them informed of his view of the overall situation. Communications between the TSC and the MCR Simulator and EOF generally went well. Status boards contained accurate information. The Emergency Operations Supervisor's log was the best of the sample of logs reviewed, with respect its usefulness for later reconstruction of an individual's activities and decisions.

The licensee's annual demonstration of the capability to assemble and account for all onsite personnel differs somewhat from most Region III licensees, and is considered by Region III to be the minimally acceptable method of demonstrating this capability. The licensee's Emergency Plan does not include a commitment to conduct an annual, unannounced assembly/accountability drill involving all persons with the Protected Area. Instead, during an annual exercise, security personnel demonstrate their capability to maintain the accountability of persons within any Emergency Response Facility (ERF) from the time of its activation until exercise termination. The licensee indicated that ERO members constitute the majority of persons within the Protected Area during an exercise. Therefore, the licensee would also identify before an exercise about 50 persons, whose normal duties would be within the Protected Area but who would not be ERO participants for the exercise. These predesignated persons would then be instructed to participate in an onsite assembly and accountability demonstration in accordance with public address system announcements during the exercise, while any other onsite "nonessential" personnel would simply be instructed

to ignore such exercise-related announcements. During the 1989 exercise, the onsite ERO's exercise participants and a group of about 50 pre-designated nonessential personnel were accounted for within 35 minutes of the Site Area Emergency declaration.

The TSC staff included communicators for maintaining communications with the MCR and other ERFs using dedicated telephone lines. This telephone equipment was located along one wall of the TSC, with no partitions or other sound absorbing provisions. The communicators were not provided with headsets. Although noise interference and communicator fatigue problems were not noted during the abbreviated exercise, these problems may exist during a prolonged facility activation.

In addition to the Open Item, the following items should be considered for improvement:

- The licensee should conduct, during normal work hours, an annual, unannounced drill better demonstrate the capability to assemble and account for all persons within the Protected Area in a timely manner, rather than demonstrating a similar capability during an announced exercise when even the "nonessential" onsite personnel have been predesignated.

- The licensee should consider providing sound absorbing materials and headsets at the work stations of personnel manning dedicated communications lines with the MCR and ERFs.

c. Transportation Accident/Onsite Medical Response

The scenario began with a simulated transportation accident. The driver of a truck carrying simulated low level radwaste supposedly suffered a heart attack, causing the truck to strike and damage the condensate storage tank. The driver suffered simulated injuries during the accident and received contamination by coming in contact with water supposedly flowing from the damaged storage tank.

Security personnel promptly reported the accident to the MCR Simulator. A two member medical team responded to the scene within three minutes. Meanwhile, MCR staff ordered two Radiation Protection Technicians (RPTs) and an unlicensed operator to proceed to the scene. When the SS and LASS suspected that the truck had damaged the condensate storage tank, this information was forwarded to the operator enroute to the scene. A Staff Assistant Shift Supervisor (SASS) was then dispatched from the MCR Simulator, while security personnel reported the injured truck driver and a liquid spill. The simulated shipment had not been damaged. However, the SASS remained only momentarily at the accident scene, rather than assuming a leadership role or serving as an onscene communicator to

the MCR and/or TSC. Despite the presence of at least the SS, STA, LASS, another SASS, and three licensed operators in the MCR Simulator, this SASS chose to return to the Simulator once he learned of the simulated reactor trip shortly before 8:30 a.m.

Meanwhile, the medical team's leader had assumed effective control over the medical response efforts and even some contamination control activities at the scene. He properly diagnosed the victim's simulated injuries and supervised the victim's transfer from the truck's cab unto a backboard. He ensured that an ambulance had been requested and determined that the truck was carrying a simulated radwaste shipment. The medical team leader also discussed his contamination control concerns with the two RPTs, and transmitted injury information to the ambulance shortly before its arrival at 8:33 a.m. The ambulance left the scene with the victim, a medical response team member, and two RPTs roughly five minutes after its arrival. Its departure had been momentarily delayed while a kit of Health Physics supplies, apparently intended for use at the local hospital, was loaded.

Proper priority had been demonstrated for the victim's medical condition versus the relatively low levels of contamination on portions of his skin and clothing. However, due to the unavailability of some basic Health Physics supplies for use at the accident scene, it was very probable that the ambulance driver and some licensee staff who boarded the ambulance had become contaminated and would have unnecessarily transferred contamination to external and/or internal portions of the ambulance.

The first group of RPTs did not have supplies, such as rope or tape to delineate the boundaries of the supposedly contaminated zone at the accident scene. The zone's boundary was verbally established, using local features as reference points. Later responders may not have accurately understood this boundary. Some responders did not wear booties and/or gloves. If events were real, some would have become contaminated while removing the victim from his truck and placing him into the ambulance. Persons without gloves were observed touching surfaces that had earlier been touched by persons wearing gloves. Persons who had never worn booties at the scene eventually boarded the ambulance. The ambulance driver wore the same gloves while driving from the scene that he had worn while helping to load the victim into the vehicle. While various responders were observed to frisk themselves for contamination beyond the probable contaminated zone, no access control point had been formally established before the ambulance departed.

The onscene RPTs surveyed the damaged truck and the accident scene. Some of these surveys were cursory. Some onscene smear and soil samples were taken; however, not all samples were adequately labelled for later identification. Additional radiation protection support was available after the ambulance departed. The RPTs began posting

the boundaries of the simulated contaminated zone and established an access control point.

Based on the above findings, this portion of the licensee's program was acceptable; however, the following items should be considered for improvement:

- Preplanning for response to a transportation accident involving radioactive material, with or without personnel injuries, should address assignment of responsibilities for onscene command and for communications with the MCR or another appropriate facility.

- A "first responders" kit of appropriate Health Physics supplies should be developed, maintained, and kept readily available for RPTs dispatched to an accident scene where radioactive contamination control complications are suspected.

d. Operations Support Center (OSC) and Inplant Teams

The OSC was promptly activated after the Alert declaration and was fully operational within about 20 minutes. Incoming personnel passed through portal radiation monitors for contamination control purposes. Security personnel maintained the accountability of persons within the OSC.

The OSC Supervisor provided several good briefings to his support staff and to technicians awaiting assignment. However, his remarks were occasionally difficult to hear. A status board listing significant inplant problems would have been more useful, if the times of problem identification had also been listed.

The Emergency Team Coordinator and Fire Brigade Team Coordinator did a good job in preparing several teams for dispatch. The teams were adequately briefed on their tasks, plant status, relevant radiation level information, and personal dosimetry and equipment needs. The Fire Brigade Team Coordinator also provided good technical advise to the OSC Supervisor on affected valves and electrical systems, based on his review of drawings and his licensed operator background.

The exercise scenario included an onsite fire. When the exercise was terminated for the reactor trip and suspected transformer fire, OSC staff who were qualified for fire brigade duties were quickly dispatched to the transformer to augment the onshift fire brigade.

Based on the above findings, this portion of the licensee's program was acceptable.

e. Emergency Operations Facility (EOF) and Dispatch of Field Survey Teams

The EOF was activated following the Site Area Emergency in accordance with procedures. The facility was adequately staffed in a timely manner. Access control and habitability monitoring were

established and adequately maintained. Personal dosimetry was issued per procedures. The Emergency Manager (EM) assumed overall command and control of the licensee's emergency response activities within an acceptable 40 minutes after the Site Area Emergency declaration.

The EM correctly declared a General Emergency at 9:32 a.m. due to: the earlier ATWS; the continued inability to make the reactor subscrital despite ongoing boron injection; and valid concern over the capability to maintain adequate core cooling. Some of his staff promptly began preparation of the initial notification messages to State and NRC officials, while protective measures staff formulated an offsite Protective Action Recommendation (PAR). The procedurally correct PAR was to evacuate a two mile radius around the site, and to seek shelter in the area between two and five miles downwind from the site. However, recent simulated onsite meteorological data had indicated fluctuations in wind direction, while forecast conditions included the potential for thunderstorm activity, which also implied variability in local wind conditions. The EM conservatively changed the PAR to evacuate the two mile radius around the site and to shelter between two and five miles around the site. Meanwhile, dose assessment staff had completed an initial calculation which indicated that no further offsite protective actions were warranted based on release rate and containment conditions. The initial notifications for the General Emergency were essentially completed when the exercise was terminated due to the actual reactor trip and a suspected transformer fire.

Five field survey teams were planned for deployment from the EOF using company cars. Dispatch of two teams was delayed when one vehicle would not start, and a second vehicle's hood would not open so that the team's portable air sampler could later be powered by the car's battery. Substitute company vehicles were soon obtained. One survey instrument was also found to be inoperable and was replaced following the team's detailed inventories and operability checks of their equipment. The teams' initial briefing and deployment plan were good.

Based on the above findings, this portion of the licensee's program was acceptable.

6. Exercise Scenario and Controller Actions (IP 82302)

The exercise scope and objectives and a complete scenario package were submitted in accordance with the established schedule. The licensee was responsive to the few technical questions raised by the NRC on the scenario data.

The scenario was challenging in several respects. The ERO had to respond to an onsite transportation accident involving one simulated, contaminated/injured person in addition to a simulated Anticipated Transient Without a SCRAM (ATWS). The MCR Simulator was utilized instead of the MCR to provide

further realism to participants normally assigned to the MCR. A recent day's meteorological data were utilized instead of real-time information. The exercise was appropriately terminated due to an actual reactor trip and suspected transformer fire before several creative challenges to inplant teams could be demonstrated, as well as a preliminary recovery planning discussion.

The exercise was well controlled. The only observed instance of improper controller action occurred at the transportation accident scene. A controller provided some radiological survey results to an exercise participant prior to the participant demonstrating the associated surveys. The licensee presented an adequately detailed, objective summary of its self-identified exercise findings prior to the NRC's exit interview. Comments were solicited from those exercise participants who attended this presentation.

Based on the above findings, this portion of the licensee's program was acceptable; however, the following item should be considered for improvement:

- Controllers should not provide survey results to exercise participants before the participants demonstrate how they would perform the survey.

7. Exit Interview

On June 29, 1989, the inspectors met with those licensee representatives identified in Section 1 to present the preliminary inspection findings. The licensee indicated that none of the items discussed were proprietary.

The licensee was informed that the decision to terminate the exercise following the unrelated reactor trip and suspected transformer fire was appropriate. Sufficient exercise objectives had been demonstrated so that resumption of the 1989 exercise was not warranted.

Overall performance during the abbreviated exercise was successful. However, an Open Item was identified regarding inconsistent interpretations of several Emergency Action Levels related to a reactor trip. Another Open Item related to the failure to inform State and NRC officials of the simulated onsite transportation accident which involved transport of a supposedly contaminated, injured victim to a local hospital. This notification requirement had become overshadowed by subsequent scenario events. Several improvements were recommended, primarily related to logkeeping, performing a more meaningful demonstration of onsite accountability provisions, and preplanning for responding to a transportation accident having contamination control complications.

The licensee's actual response to a June 1, 1989 Emergency Plan activation was well done with respect to event classification and offsite notifications. A number of problems were self-identified during a thorough self-evaluation of the off-hours activation of emergency responders. Corrective actions taken thus far were appropriate and on schedule.

Attachments:
1. Exercise Objectives
2. Scenario Narrative Summary

CLINTON POWER STATION
1989 EXERCISE OBJECTIVES

Primary Objective:

Demonstrate the capability to implement the Clinton Power Station (CPS) Emergency Plan to protect the health and safety of the general public as well as plant personnel.

Supporting Objectives:

1. Demonstrate the capability of the Main Control Room Staff to recognize the emergency conditions, to classify the event, and to perform mitigating actions.

2. Demonstrate the capability to quickly and accurately identify and classify the accident as conditions change.

3. Once the emergency is classified or reclassified, demonstrate the capability to timely notify the Illinois Emergency Services and Disaster Agency (IESDA), the Illinois Department of Nuclear Safety (IDNS) and the Nuclear Regulatory Commission (NRC) within the time required by implementing procedures.

4. Demonstrate the capability to properly notify Illinois Power Company (IPC) Emergency Response Organization personnel in accordance with implementing procedures.

5. Demonstrate the ability to notify site personnel of the emergency condition.

6. Demonstrate the ability to perform accountability and evacuation of nonessential personnel using a sample group of fifty (50) individuals.

7. Demonstrate the capability to activate the Technical Support Center (TSC), Emergency Operations Facility (EOF), Operations Support Center (OSC), Headquarters Support Center (HSC) and Joint Public Information Center (JPIC) in accordance with implementing procedures.

8. Demonstrate the clear transfer of Command Authority from the Shift Supervisor, to the Station Emergency Director, to the Emergency Manager in accordance with implementing procedures.

9. Demonstrate the capability to assess accident conditions by performing reactor core damage estimations and by performing offsite dose assessments.

10. Demonstrate the capability to dispatch and control Field Monitoring Teams for plume tracking and environmental monitoring.

11. Demonstrate the capability of Field Monitoring Teams to conduct field radiological surveys, including the collection and analysis of air samples, for radioiodine, and to collect, as needed, additional liquid, vegetation and soil samples.

12. Demonstrate the capability to receive, analyze, and store field samples in the EOF Environmental Laboratory while following approved procedures and acceptable radiological controls.

13. Demonstrate the capability of the Operations Support Center to control emergency teams including emergency maintenance activities.

14. Demonstrate implementation of effective health physics controls by the emergency teams.

15. Demonstrate realism in responding to scenario events by incorporating casualty control sub-scenarios that will require real time response for personnel in the OSC and TSC.

16. Demonstrate the capability to provide dosimetry and monitor radiation exposures to onsite emergency workers and Field Monitoring Teams.

17. Demonstrate the capability to effectively communicate reports, information and assessments of the situation among participating principal command and control centers, personnel and emergency teams.

18. Demonstrate the capability of performing onsite accountability within approved time frames.

19. Demonstrate the capability to make appropriate, timely public protective action recommendations to offsite authorities in accordance with implementing procedures.

20. Demonstrate timely, effective information flow from the Emergency Operations Facility (EOF) to the Joint Public Information Center (JPIC).

21. Demonstrate the capability to provide accurate, timely information to the news media from the JPIC.

22. Demonstrate the ability to implement appropriate measures associated with recovery activities in order to restore the plant to a pre-emergency condition.

23. Demonstrate the capability of the First Aid Team and Radiation Protection personnel to properly respond to an accident involving contaminated and/or injured personnel and to provide proper first aid.

24. Demonstrate the capability to transport an injured/contaminated person(s) to an offsite medical facility and to provide support as necessary.

25. Demonstrate the capability to critique objectively the emergency response and to identify deficiencies. This will require an evaluation of items such as (1) the operation of the Emergency Response Facilities, (2) suitability of individuals in fulfilling emergency assignments and (3) the adequacy of emergency procedures and equipment available.

* This is a utility only exercise. Coordination/communications with offsite agencies will be simulated.

INITIAL CONDITIONS

Clinton Power Station is operating at 90% power in the 115 day of continuous operation. A 14 day Limiting Conditions of Operation (LCO) exists. Division I Diesel is out of service for lube oil replacement.

SUMMARY OF EVENTS

A low level waste shipment has just left the sight when the driver suffers a heart attack causing the truck to crash into the Condensate Storage Tank. The driver of the truck is injured and slightly contaminated from water leaking from the Condensate Storage (CY) Tank. A Notification of Unusual Event will be declared in accordance with EC-02, category 15.6, Transportation of a Contaminated Injured Person. The injured individual will be transported to Decatur Memorial Hospital for treatment.

The emergency escalates quickly when a stuck open air operated valve and damaged condensate tank cause loss of contaminated water from the CY tank. A loss of condenser vacuum occurs when the CY level is lost and air is vacuum dragged to the condenser. This causes the turbine to trip and subsequent scram signal. The reactor fails to completely scram. The Anticipated Transient Without Scram (ATWS) results in a SITE AREA EMERGENCY being declared in accordance with EC-02, category 9.3. Reactor power will stay approximately in the 7 to 8% range. Standby Liquid Control (SLC) will be used to help shut down the reactor. However, SLC operates at less than design flow due to a partially blocked discharge header.

A fire unrelated to the accident will break out in 762 elevation of the turbine building in a ventilation duct heater. Operators will also receive and alarm for the Floor Equipment Drain Sump that will turn out to be false. This will require dispatching a team to the Auxiliary Building to investigate.

Operators will receive indications of the stuck open valve 1CD048 on MCR panel P870. The valve will be repaired allowing condenser vacuum to be restored. The reactor will eventually shut down when sufficient Standby Liquid Control (SLC) solution has been injected into the reactor. Offsite releases and in plant radiation levels will be below levels that warrant declaring a GENERAL EMERGENCY. The continued rise in containment pressure and temperature plus the rise in suppression pool temperature should trigger a GENERAL EMERGENCY. Once condenser vacuum is recovered, the condensate tank is refilled, and the reactor shut down, recovery activities should begin. This will involve a cleanup of the spilled water, permanent repair of the condensate tank and an inspection of the reactor fuel to determine the extent of any cladding damage to the fuel. Recovery plans should detail the necessary actions. After recovery plans are drafted the exercise will terminate.