

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report Nos. 50-456/92015(DRSS); 50-457/92015(DRSS)

Docket Nos. 50-456; 50-457

License Nos. NPF-72; NPF-77

Licensee: Commonwealth Edison Company
Opus West III
1400 Opus Place
Downers Grove, IL 60515

Facility Name: Braidwood Nuclear Generating Station, Units 1 and 2

Inspection At: Braidwood Site, Braceville, Illinois

Inspection Conducted: August 25-28, 1992

Inspector: J.W. McCormick-Barger for
A. Simons

9/3/92
Date

Accompanying Personnel: S. DuPont
G. Stoetzel
R. Pugh
J. McCormick-Barger

Approved By: J.W. McCormick-Barger
J. W. McCormick-Barger, Chief
Emergency Preparedness and
Non-Power Reactor Section

9/3/92
Date

Inspection Summary

Inspection on August 25-28, 1992 (Report Nos. 50-456/92015(DRSS); 50-457/92015(DRSS))

Areas Inspected: Routine, announced inspection of the Braidwood Station's emergency preparedness exercise involving review of the exercise scenario (IP 82302), observations by five NRC representatives of key functions and locations during the exercise (IP 82301), and follow-up on licensee actions on previously identified items (IP 82301). In addition, a management meeting was conducted (30702B).

Results: No violations or deviations were identified; however, one concern was identified in the Control Room (CR) due to the staff's failure to classify conditions which warranted Unusual Event declarations (Section 5.a). This will be tracked as an exercise weakness. The CR crew's response to operational events was very good. Exercise performance in the Technical Support Center, Operational Support Center, and the Emergency Operations Facility was excellent.

DETAILS

1. NRC Observers and Areas Observed

H. Simons, Control Room (CR), Technical Support Center (TSC), Emergency Operations Facility (EOF)
J. McCormick-Barger, Operational Support Center (OSC), TSC
S. DuPont, CR
G. Stoetzel, OSC
R. Pugh, TSC

2. Persons Contacted

K. Graesser, General Manager
K. Kofron, Station Manager
D. O'Brien, Technical Superintendent
A. Hagger, Regulatory Assurance Supervisor
A. Checca, Training Supervisor
E. Roche, Health Physics Supervisor
K. Aleshire, Emergency Planning (EP) Coordinator
S. Hess, EP Trainer
K. Appel, Assistant EP Coordinator
L. Holden, Corporate Onsite EP Supervisor
R. Groves, Corporate Emergency Planner
L. Minejevs, Corporate EP Station Representative
J. Lewand, Regulatory Assurance
S. Mitchell, Onsite Nuclear Safety
A. Pusztai, Nuclear Quality Programs Evaluator
R. Legner, Services Director
D. Lyons, Technical Analyst, Illinois Department of Nuclear Safety

The personnel listed above attended the NRC exit interview on August 27, 1992.

The inspectors also contacted other licensee personnel during the inspection.

3. Licensee Action on Previously Identified Items (IP 82301)

(Closed) Violation No. 456/92002-01: Emergency response personnel assigned to repair and damage control teams did not receive specialized emergency preparedness training.

The licensee had completed all corrective actions outlined in their response to the Notice of Violation. These actions included conducting tailgate training immediately to all personnel who may be assigned to a damage and repair team, writing and approving a lesson plan to provide specific training, and training all relevant personnel on the new lesson plan. This item is closed.

(Closed) Violation No. 456/92002-02: Training lesson plans were out of date and were not revised to be consistent with the Generating Station Emergency Plan.

The licensee had completed all corrective actions including revising all the lesson plans and ensuring a method to keep them current. The licensee had gone to a procedure based training program. This training was being presented in a systematic manner using a procedure based instruction guide. This guide allowed for the systematic presentation of the information contained in the procedure and other relevant information. This was considered an acceptable method to accomplish FP training and keep the lesson plans up to date. The licensee has also taken the initiative to further improve EP training by performing a task analysis for each position and revising the EP training as necessary. This item is closed.

4. General

An announced, daytime exercise of the licensee's Generating Stations Emergency Plan (GSEP) was conducted at Braidwood Station on August 26, 1992. This was a full participation exercise for the State of Illinois; and Grundy, Will and Kankakee Counties. The exercise tested the licensee's, state's and counties' emergency response organization's capabilities to respond to an accident scenario resulting in a simulated release of radioactive effluent. Attachment 1 describes the scope and objectives of the exercise. Attachment 2 summarizes the exercise scenario.

5. General Observations

The licensee's response was coordinated, orderly and timely. If scenario events had been real, the actions taken by the licensee would have been sufficient to mitigate the accident and permit state and local authorities to take appropriate actions to protect the public's health and safety.

6. Specific Observations (IP 82301)

a. Control Room (CR)

The exercise was staged in the Control Room (CR) using control messages and a flip chart to post relevant plant parameters. This resulted in the CR being over crowded which could possibly affect normal plant operations.

The exercise began when the Shift Engineer (SE) received a call from chemistry informing him that a Reactor Coolant System (RCS) sample was over the Technical Specification limit for dose equivalent I-131. The SE and the crew immediately recognized that a shutdown was required and thus an Unusual Event (UE) should be declared when the power decrease began. However, the CR crew failed to recognize that a separate Emergency Action Level (EAL) had been met by this condition and an UE should have been declared immediately.

Shortly thereafter, the System Auxiliary Transformer (SAT) was lost. The CR staff adequately assessed the lost of equipment associated with this loss of power; however, they failed to classify this condition per the EALs as an UE. A controller had to issue a contingency message in order to maintain the scenario timeline and the continuity of offsite participation. Since the second UE was not recognized and the contingency was issued, the CR staff was not given the opportunity to consider upgrading the classification to an Alert based on the two UEs.

These concerns regarding the CR crew's failure to use the EALs to classify the emergency is an exercise weakness and will be tracked as an inspection follow-up item (No. 456/92015-01).

Notifications to the state, counties, and NRC regarding these events were completed in a timely and adequately detailed manner.

Initially, the CR staff could have worked better together as a team to handle both the operational aspects and the emergency response aspects of the scenario. However, after the initial stages of the exercise, the CR crew worked efficiently together as a team in mitigating the accident. The SE exhibited strong command and control in the CR and provided detailed briefing regarding plant conditions and the planned course of action to mitigate further problems.

Overall, the CR crew responded well to operational events considering the lack of realism induced without the use of a simulator.

No violations or deviations were identified; however, one exercise weakness was identified.

b. Technical Support Center (TSC)

The Technical Support Center (TSC) was staffed and activated in a timely manner. Minimum staffing was achieved within 10 minutes of the announcement to activate the facility. Command and control was assumed after personnel had been fully briefed and a formal turnover between the Shift Engineer and the Station Director had occurred.

The Station Director took excellent command and control of the emergency response. Other directors in the TSC coordinated actions falling within their areas of responsibility, and in accordance with procedures, to mitigate the emergency. The TSC staff assessed conditions and took actions, when available, beyond procedural guidance to mitigate or decrease the severity of the emergency. In one instance, the Technical Director suggested spraying down the contaminated steam release by rigging hoses and spray nozzles and directing the water to condense the steam. This

suggestion was discussed with other TSC staff, concurred on, and carried out.

Accident assessment was excellent. Emergency Action Levels (EALs) were properly used in the TSC to classify the emergency. Reactor conditions were continuously reassessed to confirm the emergency classification and reclassify events. Facility directors and staff worked well together to assimilate important information, assess the situation, and project expected plant trends or system degradation. The staff took action to halt a Technical Specification required plant shutdown after recognizing that it would result in a loss of secondary cooling capability.

Dose assessment personnel in the TSC initiated onsite and offsite sampling and monitoring to confirm, assess, and track the release. After command and control of the emergency response was transferred to the Emergency Operations Facility (EOF), the TSC Environs Director continued to track ongoing monitoring and assessment activities, and supplied the EOF with good suggestions for improved monitoring methodology.

Nine hundred personnel onsite were assembled and accounted for in a timely manner. Initially, three people were missing and they were located by calling their supervisor or assembly areas. These people may have been located quicker by using the plant public address system.

The TSC recovery plans were good and included items discussed in the recovery procedure. However, the plans and procedure did not address the need to evaluate root causes for the numerous equipment failures or the need to quarantine equipment for investigative purposes.

No violations or deviations were identified.

c. Operational Support Center (OSC)

The Operational Support Center (OSC) was staffed, activated and fully operational within 30 minutes of the Alert declaration. The OSC Director exhibited strong command and control in the OSC. He properly prioritized work and ensured timely dispatch of inplant teams. He was able to keep the noise level down in the OSC through periodic announcements.

Briefings by the OSC Director on plant conditions and by the OSC Supervisor on radiological conditions in the plant were timely and thorough. The broadcast of TSC briefings in the OSC through use of the PA system provided timely information to the OSC staff. An event status board was also effective in keeping OSC personnel informed of the ongoing events.

The tracking of inplant teams was conducted in a very efficient manner. All teams dispatched from the OSC had an associated "OSC Task Assignment" form completed. This form provided a permanent record of each team's assignment, briefing, and debriefing.

Radiation protection staff in the OSC did an excellent job of tracking inplant team exposures. For each OSC staff member, they recorded their name, badge number, and daily, quarterly, and annual dose received. As teams returned from the plant, radiation protection staff updated exposure records for all team members.

Coordination between the CR and the inplant team was very good. An inplant team was dispatched to open two valves in order to establish essential service water to the steam generator. The inplant team erroneously went to the wrong valves. Prior to opening the valve, the operator called the CR to inform them of his pending action. At that time, the CR staff realized that the operator was at the wrong valves and informed him of his error and sent him to the correct valves.

No violations or deviations were identified.

d. Emergency Operations Facility (EOF)

The Manager of Emergency Operations' (MEO) command and control of the emergency response actions was excellent. He coordinated frequently with the lead person from the Illinois Department of Nuclear Safety to discuss the emergency classification and protective action recommendations (PARs). He ensured comprehensive briefings were provided to the EOF staff at regular intervals.

The technical group in the EOF worked well together in gathering and assessing technical data in order to make appropriate recommendation to the MEO. The protective measures group also worked well together to determine and verify the magnitude of the release. The Protective Measures Director was very cautious not to base PARs on any single data point. The protective measures group interface with the State of Illinois' Environs Team Coordinator was excellent. They worked together and shared data to verify and confirm the release of radioactivity.

No violations or deviations were identified.

e. Joint Public Information Center

Briefings to the media were scheduled frequently. The spokespersons in the Joint Public Information Center (JPIC) did an excellent job maintaining the schedule.

The content of the briefings was excellent. The spokespersons each spoke briefly about the events and then allowed a...

appropriate amount of time for media questions. The spokespersons gave clear and non-technical answers to the media's questions.

No violations or deviations were identified.

7. Exercise Objectives and Scenario Review (IP 82302)

The exercise scope and objectives and the exercise scenario were submitted to NRC within the proper timeframes. The licensee adequately responded to the lead inspector's questions pertaining to the scenario.

The scenario was challenging and included assembly and accountability, the simulated loss of offsite power to essential equipment, and a large offsite release.

No violations or deviations were identified.

8. Exercise Control

Exercise control was good. There were adequate controllers to control the exercise. No noteworthy instances of controllers prompting participants to initiate actions, which they might not otherwise have taken, were observed.

One problem was noted in the scenario field team data. The ENF received a data point from the State of Illinois' monitoring equipment. The Environs Coordinator sent a field team to that location to verify the data; however, the controller did not have the proper data for that location. This resulted in an inconsistency in the data which confused the players and may have stopped them from making a more conservative protective action recommendation.

No violations or deviations were identified.

9. Exercise Critiques

The licensee's controllers held initial critiques in each facility with participants immediately following the exercise. These critiques were well detailed. The licensee provided a summary of its preliminary strengths and weaknesses prior to the exit interview which were in strong agreement with the inspectors' preliminary findings.

10. Management Meeting (307J2B)

On August 25, 1992, the NRC Region III Chief, Emergency Preparedness and Non-Power Reactor Section met with the Federal Emergency Management Agency (FEMA) Region V Regional Assistance Committee (RAC) Chairman, an official from the Indiana State Emergency Management Agency, and Commonwealth Edison Company (CECo) representatives to discuss Indiana's ingestion pathway zone (IPZ) emergency plans and procedures. FEMA arranged for the meeting to obtain Indiana's and the licensee's plans to complete and submit plans and procedures to FEMA for RAC review and

subsequent FEMA approval. The licensee stated that they intend to assign a CECO employee to assist Indiana in finalizing their plans and procedures. A followup meeting with FEMA and NRC Region III is planned for late October or November to discuss the state and licensee's schedule for draft plan and procedure submittal to FEMA.

11. Exit Interview

The inspectors held an exit interview on August 27, 1992, with the licensee representatives identified in Section 2 to present and discuss the preliminary inspection findings. The licensee indicated that none of the matters discussed were proprietary in nature.

Attachments:

1. Exercise Scope and Objectives
2. Exercise Scenario Summary

Attachment 1

BRAIDWOOD NUCLEAR POWER STATION
1992 GSEP EXERCISE
AUGUST 26, 1992

SCOPE OF PARTICIPATION

DATE: August 26, 1992

TYPE Full Participation

OFFSITE AGENCY PARTICIPATION:

Grundy, Will, Kankakee Counties
IEMA, IDNS Lab, REAC

PURPOSE:

Test the capability of the basic elements within the Commonwealth Edison Company GSEP. The Exercise will include mobilization of CECO personnel and resources adequate to verify their ability to respond to a simulated emergency.

CECO FACILITIES ACTIVATED:

- * Control Room
- * TSC
- * OSC
- * EOF
- * JPIC

CECO FACILITIES NOT ACTIVATED:

- * CEOF

Other Participants:

- * None

The "Exercise" Nuclear Duty Officer will be notified of simulated events as appropriate on a real-time basis. The "Exercise" Nuclear Duty Officer and the balance of the Corporate Emergency Response Organization will be prepositioned close to the EOF to permit use of personnel from distant locations.

Commonwealth Edison will demonstrate the capability to make contact with contractors whose assistance would be required by the simulated accident situation, but will not actually incur the expense of using contractor services except as prearranged specifically for the Exercise.

Commonwealth Edison will arrange to provide actual transportation and communication support in accordance with existing agreements to the extent specifically prearranged for the Exercise. Commonwealth Edison will provide unforeseen actual assistance only to the extent that the resources are available and do not hinder normal operation of the Company.

PRIMARY OBJECTIVE:

Commonwealth Edison will demonstrate the ability to implement the Generating Stations Emergency Plan (GSEP) to provide for protection of public health and safety in the event of a major accident at one of its Nuclear Power Stations.

SUPPORTING OBJECTIVES:

NOTE: An EOF designation includes all EOFs, the CEOF and BEC7 i, activated.

Objectives marked with "*" are Key objectives. A Weakness or Not Met for a Key objective will prevent that facility from receiving a rating higher than Satisfactory. A Weakness or Not Met on two Key objectives will prevent that facility from receiving higher than a Weakness on its overall evaluation.

1) Assessment and Classification

- a. Demonstrate the ability to assess conditions which warrant declaring a GSEP Classification within fifteen (15) minutes.
- (CR, TSC, EOF)
- * b. Demonstrate the ability to determine the highest Emergency Action Level (EAL) applicable for assessed conditions within fifteen (15) minutes.
- (CR, TSC, EOF)

2) Notification and Communications

- a. Demonstrate the ability to correctly fill out the NARS form for conditions presented in the scenario.
- (CR, TSC, EOF)
- * b. Demonstrate the ability to notify appropriate State and local organizations within fifteen (15) minutes of an Emergency classification or a significant change in NARS information.
- (CR, TSC, EOF)
- c. Demonstrate the ability to notify the NRC immediately after the State notifications and within one (1) hour of the Emergency classification using the Event Notification Worksheet as appropriate.
- (CR, TSC, EOF)
- * d. Demonstrate the ability to provide information updates to the States at least hourly and within thirty (30) minutes of significant change conditions reported on the State Agency Update Checklist.
- (CR, TSC, EOF)
- e. Demonstrate the ability to contact INPO, ANI, Murray & Trettel, and Teledyne during the Exercise and the fuel vendor, General Electric or Westinghouse, if necessary.
- (TSC, EOF)
- f. Demonstrate the ability to maintain an open-line of communication with the NRC on the ENS upon request.
- (CR, TSC, EOF)
- g. Demonstrate the ability to maintain an open-line of communication with the NRC on the HPN upon request.
- (TSC, EOF)
- h. Demonstrate the ability to provide information updates using the Event Notification Worksheet as appropriate to the NRC at least hourly and within thirty (30) minutes of significant changes in reportable conditions when an open-line of communication (ENS or HPN) is not maintained.
- (CR, TSC, EOF)
- i. Demonstrate the ability to provide informational announcements over the plant PA system.
- (CR)

- 3) Radiological Assessment and Protective Actions
- a. Demonstrate the ability to collect and document radiological surveys for conditions presented in the scenario.
- (EOF, TSC, OSC)
 - b. Demonstrate the ability to trend radiological information for conditions presented in the scenario, as appropriate.
- (TSC, OSC, EOF)
 - * c. Demonstrate the ability to provide protective clothing and respiratory equipment for onsite personnel in accordance with Station policies and procedures.
- (OSC, TSC)
 - * d. Demonstrate the ability to prepare and brief personnel for entry into a High Radiation Area in accordance with Station policies and procedures.
- (TSC, OSC)
 - * e. Demonstrate the ability to issue and administratively control dosimetry in the OSC in accordance with Station policies and procedures.
- (OSC)
 - f. Demonstrate the ability to perform habitability surveys in the Emergency Response Facilities in accordance with Station policies and procedures.
- (CR, TSC, OSC)
 - g. Demonstrate the ability to establish and maintain radiological controls in the Emergency Response Facilities in accordance with Station policies and procedures.
- (CR, TSC, OSC, EOF)
 - h. Demonstrate the ability to control personnel exposure in excess of 10CFR20 limits in the course of lifesaving and other emergency activities in accordance with Station policies and procedures.
- (CR, TSC, EOF)
 - i. Demonstrate the ability to monitor, track and document radiation exposure to inplant operations and maintenance teams in accordance with Station policies and procedures.
- (TSC, OSC)
 - * j. Demonstrate the ability to respond to and perform decontamination of radioactively contaminated individual(s) in accordance with Station policies and procedures.
- (OSC)

- * k. Demonstrate the ability to select proper Protective Action Recommendations (PARs) within fifteen (15) minutes of determining an Offsite Dose Projection or using an Emergency Classification flowchart.
- (CR, TSC, EOF)
- l. Demonstrate the ability to determine the magnitude of the source term of a release.
- (TSC, EOF)
- m. Demonstrate the ability to establish the relationship between effluent monitor readings and onsite and offsite exposures/contamination for various meteorological conditions.
- (TSC, EOF, FT)
- n. Demonstrate the ability to determine the magnitude of a release based on plant system parameters and effluent monitors.
- (TSC, EOF)
- o. Demonstrate the ability to calculate release rate with primary assessment instrumentation (SPING, WRGM) offscale or inoperable.
- (TSC, EOF)
- p. Demonstrate the ability to calculate Offsite Dose Projections in accordance with emergency procedures.
- (TSC, EOF)
- q. Demonstrate the ability to collect RCS and Containment Atmosphere samples using Post Accident Sampling System (PASS) equipment in accordance with PASS procedures and health physics controls.
- (OSC)
- r. Demonstrate the ability to perform core damage assessment in accordance with emergency procedures. (TSC, OSC)
- s. Demonstrate the ability to collect and count field samples in accordance with Environmental Sampling procedures.
- (Field Teams)
- t. Demonstrate the ability to document field samples in accordance with Environmental Sampling procedures.
- (TSC, EOF, Field Teams)
- u. Demonstrate the ability to perform dose rate measurements in the environment.
- (Field Teams)
- v. Demonstrate the ability to assess and trend field sample results in accordance with CEPIPs.
- (TSC, EOF)

- w. Demonstrate the ability to dispatch the Field Teams within forty-five (45) minutes of determination of the need for field samples.
- (TSC, OSC)
- x. Demonstrate the ability to control/coordinate Field Teams activities in accordance with CEPIPs procedures.
- (TSC, EOF)
- y. Demonstrate the ability to transfer control/coordination of Field Teams activities in accordance with Station procedures and CEPIPs.
- (TSC, EOF)

4) Emergency Facilities

- * a. Demonstrate the ability to establish minimum staffing in the TSC and OSC within thirty (30) minutes of an Alert or higher Classification during a daytime event in accordance with GSEP Section 4.
- (TSC, OSC)
- * b. Demonstrate the ability to augment the Control Room staff within thirty (30) minutes of an Alert or higher Emergency Classification in accordance with GSEP Section 4.
- (CR)
- c. Demonstrate the ability to transfer Command and Control authority in a timely manner from the Control Room to the TSC in accordance with appropriate checklists.
- (CR, TSC)
- d. Demonstrate the ability to transfer Command and Control authority in a timely manner from the TSC to the EOF in accordance with appropriate checklists.
- (TSC, EOF)
- e. Demonstrate the ability to assess minimum manning and to assess the capability to assume the non-delegable responsibilities of Command and Control in accordance with GSEP Section 4.
- (TSC, EOF)
- f. Demonstrate the ability to activate the Joint Public Information Center (JPIC) within sixty (60) minutes of EOF activation.
- (JPIC)
- g. Demonstrate the ability to maintain current and accurate information of Status Boards by updating at least every thirty (30) minutes.
- (TSC, OSC, EOF)

- h. Demonstrate the ability to maintain information of the Electronic Status Board in accordance with procedures.
- (TSC, EOF)
 - i. Demonstrate the ability to exchange data and technical information between the Emergency Response Facilities in accordance with CEPIPs and Station procedures.
- (CR, TSC, OSC, EOF)
- 5) Emergency Direction and Control
- a. Demonstrate the ability of the Directors and Managers to provide leadership in their respective areas of responsibility as specified in GSEP and position-specific procedures.
- (CR, TSC, OSC, EOF, JPIC)
 - * b. Demonstrate the ability to assemble and dispatch Inplant Teams in accordance with Station policies and procedures.
- (CR, TSC, OSC)
 - c. Demonstrate the ability to prioritize resources for Inplant team activities in accordance with Station policies and procedures.
- (CR, TSC, OSC)
 - d. Demonstrate the ability to acquire and transport emergency equipment and supplies necessary to mitigate or control unsafe or abnormal plant conditions.
- (CR, TSC, OSC, EOF)
 - e. Demonstrate the ability of the Acting Station Director, Station Director, OSC Director and MEQ to provide briefings and updates concerning plant status, event classification, and activities in progress at least every sixty (60) minutes.
- (CR, TSC, OSC, EOF)
 - f. Demonstrate the ability to provide access for the NRC Site Team in accordance with Access Control procedures.
- (TSC, EOF)
 - g. Demonstrate the ability to interface with the NRC Site Team.
- (TSC, EOF)
 - h. Demonstrate the ability of individuals in the Emergency Response Organization to perform their assigned duties and responsibilities in accordance with position specific procedures.
- (CR, TSC, OSC, EOF, JPIC, (EOP TEAMS))

- * i. Demonstrate the ability to identify and designate non-essential personnel within thirty (30) minutes after completion of Site Accountability.
- (TSC)
 - * j. Demonstrate the ability to assemble and account for On-site personnel within 30 minutes of a Site Emergency declaration.
- (CR, TSC)
 - k. Demonstrate the ability to explain the evacuation route, brief personnel and arrange for traffic control within one (1) hour of starting site evacuation.
- (TSC, EOF)
- 6) Recovery
- a. Demonstrate the ability to identify the criteria to enter a Recovery classification in accordance with GSEP procedures.
- (TSC, EOF)
 - b. Demonstrate the ability to generate a Recovery Plan which will return the plant to normal operations in accordance with CECO policies and procedures.
- (TSC, EOF)
 - c. Demonstrate the ability to determine long-term recovery staffing requirements.
- (TSC, EOF)
 - d. Demonstrate the ability to coordinate recovery actions with the State(s) and NRC.
- (TSC, EOF)
- 7) Security
- a. Demonstrate the ability of the Security force to respond to an emergency situation in accordance with procedures.
- (Security)
 - b. Demonstrate the ability of the Security force to coordinate actions and interact with the Emergency Response Organization.
- (Security)

8. Public Information

- a. Demonstrate the ability to respond to Media requests within sixty (60) minutes in accordance with CECO policies and procedures.
- (ENC, JPIC)
- b. Demonstrate the ability to prepare accurate Press Releases within ninety (90) minutes of a significant event while in a Site or General Emergency.
- (ENC, JPIC)
- c. Demonstrate the ability to present media briefings within ninety (90) minutes of significant events while in a Site or General Emergency.
- (ENC, JPIC)
- d. Demonstrate the ability to use visual aides to support media briefing information in accordance with CECO policies and procedures.
- (ENC, JPIC)
- e. Demonstrate the ability to maintain a CECO representative in the JPIC at all times.
- (ENC, JPIC)
- f. Demonstrate the ability exchange event information with Non-CECO JPIC representatives for media briefings in accordance with CECO policies and procedures.
- (ENC, JPIC)
- g. Demonstrate the ability to coordinate information with Non-CECO JPIC representatives for media briefings in accordance with CECO policies and procedures.
- (ENC, JPIC)

BRAIDWOOD NUCLEAR POWER STATION
1992 GSEP EXERCISE
AUGUST 26, 1992

NARRATIVE SUMMARY

INITIAL CONDITIONS

UNIT ONE

The Braidwood Unit 1 Reactor has been operating at 100% power for the last 121 days. The 1CV01PB Chemical Volume (CV) pump is Out of Service (OOS) for lubrication and is scheduled to be returned to service later today. The crew is in progress of performing oil change on the CV pump. The 1B Auxiliary Feedwater Pump is OOS to replace pump motor bearings and is scheduled to be returned to service within three (3) working days. The 1RY8000A and 1RY8000B Pressurizer PORV Block Valves have been closed due to elevated tail pipe temperatures, indicating seat leakage. The Loose Part Monitoring Alarm was received at 0300 and a Reactor Coolant System (RCS) chemistry sample was requested by the Shift Engineer. The Shift Engineer has requested the Chemistry Department to increase the frequency of the sampling (4 hour sampling requirement). EMs have breaker 144 compt 2 OOS for surveillance BWBs 4002-071.

UNIT TWO

Unit Two is presently in day 40 of a 69 day outage. All fuel bundles have been transferred into the Spent Fuel Pool and reconstitution efforts have been completed on all bundles requiring repair. Routine outage completion activities are the only scheduled projects associated with Unit 2.

UNIT ZERO

"A" Model is not available.

UNUSUAL EVENT
(0700-0745)

The RCS confirmatory sample taken at 0400 has been analyzed and the information is provided to the Shift Engineer at 0700. The RCS sample indicates 100 microcuries per gram dose equivalent iodine.

EXPECTED ACTION

The Shift Engineer should analyze the result of the RCS chemistry sample and make the determination that it violates Technical Specification and begin a controlled shutdown. The Control Room should recognize that EAL 2a (Dose equivalent I-131 coolant activity exceeds the allowable operational limits in the Technical Specifications). The Shift Engineer should then declare an Unusual Event on either EAL 2a or EAL 3a (Technical specification shutdown). EAL 6a is also applicable.

BRAIDWOOD NUCLEAR POWER STATION
1992 GSEP EXERCISE
AUGUST 26, 1992

ALERT
(0745-0930)

At 0745, approximately thirty minutes into the Technical Specification shutdown, the Control Room Crew observes a fault on SAT 141 resulting in a Loss of Offsite Power (Due to lightning strike). Station Auxiliary Transformer (SAT) Feed Breaker to Bus 141 fails to open EAL 3.d - (Loss of power to the 4-KV ESF buses from the Unit's System Auxiliary Transformer in Modes 1-4). During the refilling of the 1CVO1PB pump with oil, the Fuel Handlers were in route with the fresh oil when the Auxiliary Building Elevator stops due to the power failure. At 0800, during the controlled shutdown of Unit 1 the 1FW510 valve began oscillation causing the 1A Steam Generator levels to swing while in automatic control.

EXPECTED ACTIONS

The Shift Engineer will recognize that the SAT failure is an Unusual Event per EAL 3.d - (Loss of power to the 4-KV ESF buses from the Unit's System Auxiliary Transformer in Modes 1-4) and should upgrade the Unusual Event to an Alert based upon worsening or deteriorating plant conditions EAL 9.e. (A condition that warrants precautionary activation of Technical Support Center on Placing Emergency Operations Facility or Corporate EOF on standby). The Fuel Handlers should call the Shift Engineer on the Emergency phone and inform them that they are trapped in the elevator with the oil for the 1CVO1PB pump oil. The NSO should place the Steam Generator level in manual control to control the swing in the Steam Generator level. Instrument Maintenance should be dispatched to assist with the problem with the 1FW510 valve.

SITE EMERGENCY
(0930-1045)

At 0900 Unit One experiences an electrical problem resulting in a loss of feedwater. The reactor trips on LO-2 Steam Generator Level (or it could be manually tripped by the Control Room Operators when Steam Generator levels reaches < 39%). The 1B Steam Generator Safety sticks in the open position and the 1RY8010C Pressurizer Safety sticks open on the reactor trip. Unit 1 trips results in a Unit blackout due to the previous SAT failure D/G. Following the reactor trip and the subsequent failure of the 1RY8010C Pressurizer Safety Valve to reseal, the Pressurizer Relief Tank (PRT) monitored parameters begin to increase and alarms are received in the Control Room as setpoints are exceeded (volume, temperature, pressure). The pressure reaches the 100 PSIG rupture discs design setting, the two PRT discs rupture and created a LOCA inside of the Containment Building. The unit experiences a Safety Injection signal which isolates the RCDT pumps preventing them from removing the volume from the PRT as the containment floor is submerged in an inch or so of Reactor Coolant. The containment sump levels increase as Reactor Coolant spills from the PRT into the Containment Floor Drain. The trip of the unit has caused additional fuel to be damaged and containment radiation levels are slowly increasing due to the LOCA.

At 0930, the Technical Support Center will observe that containment radiation has reached four hundred and fifteen (415) R/hr. One half (1/2) hour after the Reactor trip and loss of the heat sink, the station will want to open the 1AF-017A in order to get Essential Service Water (SX) to the Steam Generator to assist with the depressurization. As pressure increases in the RCS/Pressurizer the 1RY456 Power Operated Relief Valve (PORV) fails to auto-open. Subsequent attempts to manually open the valve fails.
ZBRAID/46/2

BRAIDWOOD NUCLEAR POWER STATION
1992 GSEP EXERCISE
AUGUST 26, 1992

At 0930, lightning strikes the Braidwood Meteorological Tower causing the loss of all data through the Braidwood demand poll. The station will have to revert to using either Dresden's or LaSalle's demand poll to obtain Met Info.

During the activation of the EOF, the first responder will be unable to access the facility due to a broken key in the main entrance lock cylinder. Once the participants are in the facility, the GSEP Radio Communicator will discover that the GSEP Radio is broken.

EXPECTED ACTIONS

The Shift Engineer should be able to determine from the monitored parameters that there is a LOCA inside of containment due to the rupture of the Pressurizer Relief Tank Rupture discs. The Site Emergency will be declared on EAL 2q (Primary Containment radiation level is greater than or equal to 4×10^2 R/hr). The 1B Steam Generator Safety sticks in the open position upon the reactor trip due to a bent stem. The reactor may be manually tripped by the Unit One (1) Operator when the Steam Generator level reaches < 39% volume. The clutch to valve 1AF-017A writeup explanation fails to engage. Mechanical Maintenance should be dispatched to investigate the problem. Instrument Maintenance is dispatched to investigate the problem with the 1RY456 PORV. Instrument Maintenance will report to the station the results of their investigation and electrical Maintenance should subsequently be dispatched to investigate the failed solenoid.

The EOF first responder will have to establish alternate means of Access Control. The first responder should also ensure that the facility alarm is deactivated. The EOF participants should investigate with GSEP radio troubleshoot the problem and discover a blown fuse.

Dresden's or LaSalle's Demand Poll will be used by the participants for securing Met data.

GENERAL EMERGENCY
(1045-1400)

The Steam Generator (B) tubes rupture, Pressure decreases from 100 psig to 0 psig. Radiation increases on the 1B Steam Generator steam line to the alarm setpoint on 1RE-PRO21 and 1RE-PRO06 skids. The release is from the Reactor Coolant System through the Steam Generator tubes to the Steam Generator safety valves. Monitoring teams report radiation levels > 1 R/hr at the site boundary.

The Fuel Handlers that were trapped in the elevator with the oil for the CV pump have been rescued. The 1B CV pump has been filled with oil and returned to service as of 1100 a.m.. Will and Kankakee counties experience light rain showers from 1150 to 1200 a.m.. At 1215, Mechanical Maintenance returns the 1AF-017A to service restoring Essential Service Water to the Station.

BRAIDWOOD NUCLEAR POWER STATION
1992 GSEP EXERCISE
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EXPECTED ACTIONS

The Station should declare a General Emergency based on EAL 2s (Loss of or challenge to two fission product barriers with a probable loss to the third fission product barrier). Once the 1B Chemical Volume pump has been filled with oil, the Shift should use it to provide volume to the RCS. The subsequent repair of the Auxiliary Feedwater valve will provide the station with a heat sink which will further assist with the mitigation of the events.

RECOVERY
(1300-1400)

It is now August 28, 1992, 1300. This is your third rotation as part of a three shift respondent team to the accident at the Braidwood Nuclear Power Station. The following activities have occurred since your previous shift:

Sampling of the RCS have determined that approximately 20% of the Core has incurred some melting. Radiation levels in the Plant are as described on the attached sheets. All equipment have been repaired and returned to service.

The S/G Safety Valve was replaced and the release path secured.

The attached Plant Status is the August 28, 1992 1300 update from the Control Room:

The deposition of Iodine and Cesium to onsite and near site monitoring locations are as follows: