

DONALD C. COOK NUCLEAR PLANT

EMERGENCY RESPONSE EXERCISE

MAY 9, 1995

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SECTION I

INTRODUCTION



DONALD C. COOK NUCLEAR PLANT

EMERGENCY RESPONSE EXERCISE

I. INTRODUCTION

In the interest of verifying that the health and safety of Plant staff, Plant visitors and the general public are protected in the event of an accident at the Cook Nuclear Plant, the Indiana Michigan Power Company conducts an annual emergency response exercise. In accordance with the schedule prescribed by the Nuclear Regulatory Commission (NRC) and the Federal Emergency Management Agency (FEMA), the 1995 emergency exercise will be conducted as a day shift exercise.

Exercise events will begin at approximately 0800 on May 9, 1995 initiating the mobilization of Cook Nuclear Plant, American Electric Power Nuclear Organization (AEPNO), and Indiana Michigan Power Company (I&M) personnel. Exercise termination is expected to take place at approximately 1400 on May 9, 1995.

The intent of the exercise is to demonstrate that these various emergency response organizations (EROs) are adequately trained to implement their corresponding emergency plans and procedures from their respective emergency response facilities (ERFs). It will also serve to demonstrate their ability to effectively coordinate their activities.

This scenario has been designed to provide ample opportunity for all participating organizations to meet their objectives. It progresses through all four emergency classifications in such a way that sufficient time is spent at each classification to allow objective-related decision making and actions to take place and for an effective turnover to take place at the EOF. However, through innovations in the use of simulator software, exercise participants will be challenged when they witness unprecedented high in-plant radiation levels and attempt to determine the cause.

EOF and onsite exercise activities will be observed and evaluated by American Electric Power Nuclear Operations, Cook Nuclear Plant, and NRC personnel. Offsite activities will be observed and evaluated by Federal Emergency Management Agency (FEMA) personnel. A critique will be conducted by ERO personnel and the NRC following the exercise to identify any deficiencies and evaluate the correction of past deficiencies, if any. Such deficiencies will be documented with subsequent resolution being the responsibility of the Plant

INTRODUCTION (CONTINUED)

and AEPNO Emergency Planning Coordinators. Likewise, a public critique of offsite agency activities will be conducted by FEMA and the correction of deficiencies, if any, will be the responsibility of the State of Michigan and the County of Berrien.

This manual has been prepared to assist exercise Controllers and Observers in the conduct and evaluation of the exercise. This manual contains all information and data necessary to conduct the exercise in a coordinated and efficient manner in the event the simulator becomes unusable. Although the use of the simulator will provide the opportunity for more free-play, it is important to remember that the timeline in Section VI may not track with the exercise activities as closely as it has with the more artificial, closely controlled timelines used in past exercises.

Finally, given that the players response should be candid and spontaneous to affect a valid evaluation, this manual must be treated as confidential material. Potential players shall not have prior knowledge of the scenario material in this manual.



SECTION II

EXERCISE OBJECTIVES

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EMERGENCY RESPONSE EXERCISE

II. EXERCISE OBJECTIVES

The exercise objectives dictate the scope of the scenario. The objectives for this exercise were developed based upon the Donald C. Cook Nuclear Plant (DCCNP) Emergency Plan Administrative Manual.

Situations will be presented in the scenario to prompt the desired player response for each objective. Where appropriate, specific objectives and criteria for adequate demonstration will be included in the exercise messages for Controller/Observer use.

A. OVERALL LICENSEE OBJECTIVES

1. Demonstrate the ability of the emergency response organization to implement DCCNP Emergency Plan Procedures, the Indiana Michigan Power Company Emergency Plan Response Manual and the AEPSC Emergency Response Manual.
2. Demonstrate the ability to establish emergency management command and control, and maintain continuity of this function for the duration of the postulated event.
3. Demonstrate the ability to establish communications and information flow between DCCNP emergency response facilities and participating offsite agencies.
4. Demonstrate the ability to designate subsequent shifts of the emergency response organization.

B. CONTROL ROOM OBJECTIVES

1. Demonstrate the ability to recognize symptoms and parameters indicative of degrading plant conditions and to classify degraded conditions as emergencies.
2. Demonstrate the ability to initiate notification of offsite authorities and plant personnel.



3. Demonstrate communications and information flow to and from the Technical Support Center.
4. Demonstrate the ability to transfer emergency authorities and responsibilities from the on-shift emergency organization to the DCCNP emergency response organization.
5. Demonstrate the duties of the Control Room Emergency Organization as described in procedure OHI-2080.

C. TECHNICAL SUPPORT CENTER OBJECTIVES

1. Demonstrate the ability to activate the facility within one hour of declaration of an emergency requiring facility activation.
2. Demonstrate the ability to provide analytical assistance and operational guidance to the Control Room.
3. Demonstrate the ability to coordinate onsite activities in response to the emergency.
4. Demonstrate the ability to establish and maintain hard copy communications with the EOF and verbal communications with the EOF, OSA, IAG, and JPIC.
5. Demonstrate the ability to provide analytical radiological assistance to the OSA and Control Room.
6. Demonstrate the ability to obtain data from the Plant Process Computer.
7. Demonstrate the ability to request emergency response teams from the OSA.
8. Demonstrate the ability to evaluate the results of TSC/OSA habitability surveys and assess the need to evacuate these facilities.
9. Demonstrate the ability to recognize degrading plant conditions and classify plant conditions as an emergency.
10. Demonstrate the ability to direct the implementation of site assembly, accountability and evacuation.

11. Demonstrate the ability to evaluate site evacuation routes and determine an appropriate route based on indicated radiological and meteorological conditions.
12. Demonstrate the actions required to be taken in the TSC if the emergency involves a breach of the reactor coolant system.

D. OPERATIONS STAGING AREA OBJECTIVES

1. Demonstrate the ability to activate the facility within one hour of declaration of an emergency requiring facility activation.
2. Demonstrate the ability to assemble, brief, and dispatch, within an average time of 20 minutes or less after being requested, the following emergency response teams:
 - a. Damage Control
 - b. Chemistry Sampling
 - c. On-site Radiation Monitoring
 - d. Off-site Radiation Monitoring
3. Demonstrate the ability to designate a second shift for OSA operation.
4. Each emergency response team assembled and dispatched shall demonstrate the following actions as applicable to the team type and mission:
 - a. Assembly of tools/equipment;
 - b. Pre-operation checks of equipment and communications devices;
 - c. Performance of appropriate radiological precautions;
 - d. Performance or simulation of team mission;
 - e. Post-mission debriefing and radiological controls;

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5. Demonstrate the ability to provide emergency radiological support. As a minimum, the following activities should be demonstrated:
 - a. Establishment of emergency dosimetry and exposure tracking system;
 - b. Determination and establishment (if necessary) of emergency control points;
 - c. Performance of habitability surveys prescribed by procedure;
 - d. Analysis of radiological conditions to be encountered by emergency response teams;
 - e. Specification of radiological controls and precautions for emergency response teams;
6. Demonstrate the ability to perform offsite radiological monitoring. As a minimum, two teams should be dispatched and direct radiation monitoring as well as airborne radioactivity analysis should be demonstrated.
7. Demonstrate the ability to implement damage control activities in accordance with applicable Emergency Plan Procedures.
8. Demonstrate the ability to perform onsite radiological monitoring in accordance with applicable Emergency Plan Procedures. This monitoring should include direct radiation surveys and analysis of airborne radioactivity samples.
9. Demonstrate the ability to obtain post accident samples from one of the following mediums and complete appropriate chemical and isotopic analysis within three hours of the sample request.
 - a. RCS Loop
 - b. Containment Sump

E. EMERGENCY OPERATIONS FACILITY OBJECTIVES

1. Demonstrate the ability to activate the facility within one hour of declaration of an emergency requiring facility activation.
2. Demonstrate the ability to establish overall command and control of the DCCNP emergency response within one hour of declaration of a site area emergency or higher classification, as applicable.

3. Demonstrate the ability to establish and maintain effective emergency communications with each of the following agencies and facilities:
 - a. State of Michigan
 - b. Berrien County
 - c. NRC
 - d. Technical Support Center
 - e. Joint Public Information Center
 - f. Initial Assessment Group
4. Demonstrate the ability to establish and maintain hard copy data transmission and reception with each of the following facilities:
 - a. Technical Support Center
 - b. Joint Public Information Center
 - c. State of Michigan EOC
5. Demonstrate the ability to direct Offsite Radiation Monitoring Teams in order to determine the geographical location and radiological magnitude of the postulated plume.
6. Demonstrate the ability to update the State of Michigan on the status of the emergency at 15 minute intervals.
7. Demonstrate the ability to respond to inquiries from the TSC, JPIC, IAG and State of Michigan in a timely manner.
8. Demonstrate the ability to project the magnitude of offsite dose using the Dose Assessment Program.
9. Demonstrate corporate augmentation of the EOF staff.
10. Demonstrate recovery planning associated with the emergency termination.
11. Demonstrate the ability to designate a second shift for EOF operations.

F. PUBLIC AFFAIRS OBJECTIVES

1. Demonstrate activation of the Joint Public Information Center.
2. Demonstrate the ability to conduct media briefings.

3. Demonstrate the ability to respond to actual or simulated inquiries from media representatives.
4. Demonstrate the ability of rumor control personnel to respond to simulated inquiries from the general public.
5. Demonstrate the ability to monitor media transmissions and respond to inaccurate information being transmitted by the media.
6. Demonstrate coordination of news announcement content with State, County and Federal authorities.

SECTION III

CONDUCT OF EXERCISE



COOK NUCLEAR PLANT
EMERGENCY RESPONSE EXERCISE

III. CONDUCT OF THE EXERCISE

A. EXERCISE PLAYER INFORMATION

This exercise is intended to satisfy the requirements for an annual emergency response exercise to demonstrate the readiness of the Plant to respond to an abnormal Plant condition. The following information should be understood by all players prior to initiation of the exercise.

1. It should be understood that the circumstances simulated for this exercise are unrealistic in certain aspects, which should not be construed as flaws in the scenario. Moreover, it is due to the reliable design and construction of nuclear power facilities that require unrealistic assumptions to be made in order to generate conditions that will affect the general public. Thus, in order to obtain a sequence of events that will result in a significant radiological hazard to the general public, the exercise scenario must contain an incredible Plant condition, an unlikely series of equipment failures, or an improbable sequence of events coupled with equipment failure.
2. The purpose of the exercise is to demonstrate actual integrated emergency response capabilities, including the use of emergency equipment and facilities. Personnel knowledge and familiarity with the Emergency Plan and Procedures are the primary aspect of the evaluation. Demonstration of detailed knowledge of plant systems, equipment and operation is of secondary importance for purposes of this evaluation. Although knowledge of the plant is not being evaluated, system evaluations should not be eliminated from discussions during the exercise since this contributes to the realism of the response.
3. All emergency communications that relate to the exercise shall be identified as part of the drill. Verbal communications should be initiated and closed by the statement, "THIS IS A DRILL". Exercise extreme care to ensure that individuals who may overhear or observe exercise activities are not misled into believing that an actual emergency exists.

III. CONDUCT OF THE EXERCISE (CONTINUED)

4. Manipulation of any plant operating system, valves, breakers or controls in response to this exercise are to be simulated. There is to be no alteration of plant equipment, systems or circuits in response to this exercise.
5. Any motor vehicle response to this exercise, whether it be ambulance, fire fighting equipment, security or field monitoring vehicle should observe all normal motor vehicle operating laws including posted speed limits; stop lights/signs, one-way streets, etc.
6. Should any on-site security actions be required in response to this exercise, exercise participants are to cooperate as directed, and security representatives are to be prudent and tolerant in their actions.
7. Participants should inject as much realism into the exercise as is compatible with the safe performance of the exercise.
8. Play out all actions, as much as possible, in accordance with the Emergency Plan Procedures. Unless specifically instructed by the controller, you should not simulate your actions. If instructed to simulate an activity, tell the observer/controller how and when you would actually perform the activity.
9. Periodically speak out loud, verbalizing your key actions and decisions to the controller and federal evaluator. This may seem artificial, but it will assist in the evaluation process and is to your benefit.
10. If ever in doubt, ask your controller for clarification. The controller will not provide prompting or coaching information.
11. Periodically the controller may issue messages or instructions designed to initiate response actions. You must accept these messages immediately.
12. You must not accept any messages or instructions from federal evaluators. If they desire to initiate some action, they must work through the controller.

III. CONDUCT OF THE EXERCISE (CONTINUED)

13. If entering radiologically controlled areas, observe all rules and procedures governing access and egress. Do not enter high radiation areas for purpose of exercise response. Follow normal ALARA principles and guidelines.
14. Utilize status boards, log books, three-part message forms, etc., as much as possible to document and record your actions, instructions and reports to co-players.

REMEMBER - PUT IT IN WRITING

SECTION IV

CONTROLLERS/OBSERVERS

INFORMATION

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EMERGENCY RESPONSE EXERCISE

IV. CONTROLLERS/OBSERVERS INFORMATION

The Controller/Observer group is essential to the successful implementation of the exercise. Controllers are responsible for ensuring the scenario proceeds on schedule by disseminating timely information and maintaining scenario integrity. Observers are responsible for observing, documenting and analyzing players actions. Observers may assume the function of Controller if identified in the scenario or directed by the facilities lead controller. The following personnel will be filling the Controller/Observer positions listed:

A. Control Room

- | | |
|---------------------------------|---------------|
| 1. Exercise Lead Controller | J. Wojcik |
| 2. Control Room Lead Controller | R. Anderson |
| 3. AEO Controller | V. Lauricella |
| 4. ERO Observer | R. Perrine |
| 5. EOP Controller | T. Conrad |
| 6. PE Controller | T. Fisher |
| 7. Simulator Operator | J. Dickson |
| 8. Simulator Operator | T. Garrison |
| 9. Simulator Operator | B. Davidson |

B. Technical Support Center

- | | |
|----------------------------|-----------|
| 1. TSC Lead Controller | R. Ptacek |
| 2. TSC Observer | M. Ke |
| 3. Radiological Controller | M. Norton |

C. Operations Staging Area

- | | |
|------------------------------|-------------|
| 1. OSA Lead Controller | J. Schrader |
| 2. I&C Controller | D. Walker |
| 3. DCT Controller-Electrical | G. Troxell |
| 4. DCT Controller-Mechanical | J. Moline |
| 5. DCT Controller-Mechanical | W. Lee |
| 6. RRT/Onsite RMT Controller | S. Watkins |

Operations Staging Area (cont.)

7. RP Lead Controller
8. Offsite RMT Controller (Survey)
9. Chemistry Lead Controller
10. Chem Sampling Team Controller

H. Springer
A. Zuber
D. Andrews
V. Ball

D. Emergency Operations Facility

1. EOF Lead Controller
2. Communications Observer
3. Radiological Controller
4. Managerial Controller

L. Umphrey
J. Ersland
D. Foster
J. Rutkowski

E. Initial Assessment Group (IAG) - Columbus

1. IAG Lead Controller

D. Van Deusen

F. Joint Public Information Center

1. JPIC Lead Controller

C. Ross

G. Communications

1. Communications Controller
2. Communications
3. Communications

K. Umphrey
D. Whisenant
P. Hauch

H. Security

1. Security Lead Controller

E. Gerschoffer

IV. CONTROLLERS/OBSERVERS INFORMATION (CONTINUED)

H. Controller/Observer Guidelines

Controllers and Observers are utilized in this exercise to provide exercise information to the participants and to observe players response. In doing so, the Controllers and Observers should allow players to make, and correct, their own mistakes, while the Controller or Observer identifies the items to improve Plant emergency response capability. However, situations may arise where complete freedom of player response and success of the overall exercise are conflicting objectives. In such cases, the Controller or Observer must ensure proper continuity of the scenario, while identifying problem areas in sufficient detail to allow corrections. Generally, the following rules apply to control of the exercise:

1. Keep the reaction and emergency response going according to the time element established in the scenario.
2. Provide command messages to key personnel as a mechanism to prevent deviation from the scenario.
3. Observe player procedural discipline.
4. Provide prepared input data to players to stimulate response actions.
5. Observe and critique the participants actions, procedure effectiveness, equipment capability and general emergency response.

I. Exercise Controller/Observer Instructions

1. Each Controller/Observer shall participate in exercise briefings and critiques scheduled as follows:
 - Exercise Walkthrough - May 8, 1995, at 0800. Location to be announced.
 - Exercise Facility Critique - Immediately upon exercise termination in each Emergency Response Facility.

SECTION V

OFF-SITE AGENCY

PARTICIPATION

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V. OFF-SITE AGENCY PARTICIPATION

This exercise will be an announced, day shift exercise as required by NUREG-0654/FEMA-REP-1, Rev.1. It will be a required biennial evaluated exercise in cooperation with State and local agencies. The State of Michigan will participate on a partial basis, mobilizing its state EOC but no field activities. The County of Berrien will participate on a full scale basis. In addition, the Nuclear Regulatory Commission's Region III Incident Response Team will fully participate at the EOF, TSC, OSA, JPIC, and at their headquarters in White Flint, Maryland and at the State EOC.

SECTION VI

EXERCISE NARRATIVE SUMMARY

AND TIMELINE

COOK NUCLEAR PLANT 1995 GRADED EXERCISE

Initial Conditions: May 9, 1995

Unit 1	Power level	100%
	Burnup	427 EFPDS
	RCS Boron	15 PPM

Plant Heating Boiler tagged out for inspection
Number 1-2 traveling screen tagged out for drive gear
reducer replacement

Unit 2	Power level	49% (MOL)
	Burnup	96.2 EFPDS
	RCS Boron	1296 PPM

Reactor power reduced on May 7th to 50% to clean the main feed pump condenser water boxes(high dP). At time of turnover, both main feed pumps are in service. AB diesel generator has been removed from service. Reactor power is being held at 49% for a Chemistry hold. It is anticipated that permission to commence power escalation will be recieved shortly.

Narrative:

The simulated events will begin at approximately 0815 with an anonymous phone call to the plant saying that several bombs have been placed on the plant site and are expected to explode at any time. This news generates an UNUSUAL EVENT declaration due to the potential security compromise. Notification to the County, State and the NRC is immediately made. Approximately one half hour later, a simulated bomb explosion in the sand dune east of the waste water(sewage) treatment plant destroys a power pole and disables the offsite emergency power supply to the plant. This immediately affects the North & South Security Posts, the Training Building and the Energy Information Center (Visitor Center/Emergency News Center). Within minutes, an ALERT is declared because of the damage to offsite power supplies that could affect plant operation, or ongoing security compromise in the judgement of the SS and/or SSS. Again all appropriate offsite agencies are notified. The Emergency Response Organization(ERO) is alerted by plant PA to man all the Emergency Response Facilities and AEP personnel start on their way to the plant site. Shortly before 1030 hours, Unit 2 reactor trips, followed by a Safety Injection and Phase B Containment isolation. These actions are the result of a Loss of Coolant Accident(LOCA) caused by an ejected control rod(rod H8)... During the scram, rods H10, F8, K10 and F10 are stuck in their withdrawn(upper most) position.

A SITE AREA EMERGENCY is declared due to the loss of fission product barriers and Phase B initiation. Subsequent to that a dose assessment calculation using the containment high range radiation readings and the default containment leakage of 3 CFM is made indicating conditions exist for a GENERAL EMERGENCY. This is due to dose calculated at the site boundary. This generates the initial Protective Action Recommendation(PAR) which is transmitted to the State. About a half hour later a containment pressure relief damper opens causing a large radiation release. A second PAR is made to the State. At about 1300 hours the pressure relief dampers drifts closed terminating the release via this pathway. At this time the scenario will make a 24 hour time jump to allow recovery operations to continue.

Timeline:

REAL TIME	SCENARIO TIME	EVENT/CONDITION
0800	00:00	Exercise begins
0815	00:15	A bomb threat is called into the plant and is recieved by Plant Protection, stating that multiple bombs have been placed around the plant site. The Shift Security Supervisor(SSS) contacts the Ops Shift Supervisor(SS) and relays this information
0820	00:20	After discussion between the SSS and SS a UNUSUAL EVENT is declared based on ECC-7 "Security Threat or Compromise"
0835	00:35	(Prompt an UNUSUAL EVENT)
0855	00:55	A bomb/explosion is heard by Security at the South Access. The explosion destroys a power pole in the dunes east of the waste water treatment plant taking out all Emergency Power.(This also takes out all power at the North & South Security Posts, the Visitor Center and the Training Center- contingencies must be considered during the exercise due to the loss of power at these facilities). A Security report indicates that a single power pole has been destroyed with no other damage visible to plant property or equipment. There is no fire, etc. and no need for response by the fire brigade or HAZMAT team etc.

0900	01:00	After discussion between the SSS and the SS an ALERT is declared based on ECC-4 "Explosion Damage to the Plant Affecting Unit Operation or Off-site Power Supplies" (or ECC-7 ?) Plant PA announcements are made to staff the ERO facilities.
0915	01:15	(Prompt an ALERT)
0935	01:35	OSA and TSC are activated and operational (activation times are estimates)
0945	01:45	AEP staff contacts the plant with an estimated time of arrival (ETA) at the EOF of 1045 hours
1000	02:00	EOF is activated and operational (activation time is an estimate)
1020	02:20	Unit 2 experiences a LOCA caused by the ejection of rod H8. Reactor trips, followed by Safety Injection and Phase B isolation. Rods H10, F8, K10 and F10 do not insert on reactor trip. (At 1020 fuel damage is introduced into the core) Conditions exist for a SITE AREA EMERGENCY based on ECC-14 "Fission Product Barriers /Loss of Coolant Accident". [At this time rad readings on VRA-2310 should be increasing from an initial reading of 4,000 R/h to about 15-16,000 R/h. If the simulator fails to model this response it will be manually ramped in!]
1035	02:35	(Prompt a SITE AREA EMERGENCY)
1040	02:40	West Motor Driven Aux Feed Pump trips
1045	02:45	AEP arrives at the EOF
(1115)		[At this time VRA-2310 should read 9,000 R/h at a minimum. If the simulator fails to model this, VRA-2310 will be manually adjusted to >9,000 R/h minimum to insure DAP projections yield a GENERAL EMERGENCY conditions at 1125 hrs!]

1125 03:25 Containment high range radiation levels have been increasing since the reactor trip. They are now approximately 10,000 R/hr. Dose Assessment calculations indicate site boundary doses exceed the GENERAL EMERGENCY levels. Conditions now exist and a GENERAL EMERGENCY is declared based on ECC-19 "Radiation Release" A PAR is recommended to the State

1140 03:40 (Prompt a GENERAL EMERGENCY)

1150 03:50 A containment pressure relief damper opens creating a release pathway out of containment. The damper failure is indicated in the control room by both lights energized (red and green). Another PAR is recommended to the State. (GENERAL EMERGENCY conditions now exist via ECC-14 "Fission Product Barriers/LOCA")
[At this time VRA-2310 will read a minimum of 9,000 R/h or it will be manually adjusted to that level. This will yield a release activity of 30.0 to 40.0 uCi/cc on the Vent Stack Monitors: 2509, 2505, 2507]

1220 04:20 The containment pressure relief damper closes terminating the release via this pathway.

1300 05:00 Recovery operations begin after a 24 hour time jump in the scenario. The following must remain "in operation" to support the Joint Public Information Center (JPIC) and recovery operations:
EOF Dose Assessment
EOF Communications (to and from the JPIC)
EOF Recovery Operations
Simulator Booth Operation
Control Room/TSC/EOF Communications
*Players/facilities not required to support the Recovery/JPIC functions MAY be deactivated.

1400

06:00

Exercise Terminates (Termination of the Graded Exercise will be made by the EOF lead controller after discussion with the Recovery and Control Manager and other facility lead controllers. The exercise termination announcement will be broadcast over the controllers bridge circuit, then relayed to facility managers)



TIMELINE
SUBMITTED TO
THE NRC

COOK NUCLEAR PLANT

EMERGENCY RESPONSE EXERCISE

INITIAL CONDITIONS

Unit 1 Power Level 100%

Burnup 427 EFPDs

Reactor Boron 15 PPM

Plant heating boiler tagged out for inspection.

Number 1-2 traveling screen tagged out for drive gear reducer replacement.

Unit 2 Reduced Power on May 7th to 50% to clean main feed pump water boxes.

Actual conditions at turnover are 49% power, 1296 ppm Boron, Equilibrium Xenon. (MOL)

Both feed pumps in service.

AB diesel generator removed from service.

Holding power on chemistry hold. Will escalate when released.

NARRATIVE

The simulated events will begin at approximately ⁰⁸¹⁵0820 with an anonymous call to the plant saying that several bombs have been planted on the plant site and are expected to explode at any time. This news generates an **UNUSUAL EVENT** declaration due to a potential security compromise. Notification to the County, State, and the NRC is immediately made. Approximately one-half hour later, a simulated bomb explosion in the sand dune east of the wastewater treatment plant destroys a power pole and disables the offsite Emergency Power supply to the plant. This immediately affects Plant Protection posts 1 and 2, the Training Center, and the Visitors Center (Emergency News Center). Within minutes, an **ALERT** is

declared because of explosive damage to offsite power supplies that could affect plant operation. Again, all appropriate offsite agencies are notified of the new conditions and emergency classification.

The Emergency Response Organization is alerted by plant PA to man all Emergency Response Facilities and AEP Corporate Headquarters personnel start on their way to the site. Shortly before 1030, Unit 2 reactor trips, followed by a Safety injection and Phase B containment isolation. This action is the result of the ejection of control rod H8 and the resultant loss of coolant. Rods H10, F8, K10, and F10 are stuck in their uppermost position. A **SITE AREA EMERGENCY** is declared due to the initiation of a Phase B isolation and loss of fission product barriers/loss of coolant accident. Subsequent to that, a dose assessment calculation using the containment high range radiation readings and a default leakage of 3cfm is made which results in the declaration of a **GENERAL EMERGENCY** due to calculated elevated site boundary doses. This generates the first Protective Action Recommendation which is transmitted to the state. About a half-hour later, its position indicator still reading "closed", a containment pressure relief damper opens causing a large radiation release and a second protective action recommendation is made to the state. At about 1300, the damper drifts closed, stopping the release.

TIMELINE

The times listed for the events below are times which have been estimated based on trial simulator runs of the scenario. They are nominal only and may vary depending on minor simulator changes or techniques the exercise control room crew may have that are different than the test crew's.

<u>REAL TIME</u>	<u>SCENARIO TIME</u>	<u>EVENT/CONDITION</u>
0800	00:00	Exercise begins
0815	00:15	A bomb threat is called in to Plant Protection indicating multiple bombs have been planted around the plant site.
0820	00:20	Conditions exist for an UNUSUAL EVENT based on ECC-7 "Security Threat or Compromise".

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0855	00:55	A bomb explodes destroying a power pole in the dunes east of the wastewater treatment plant taking out all emergency power. (this also takes out all power to Posts 1 and 2, the Visitor's Center and the Training Center)
0900	01:00	Conditions exist for an ALERT based on ECC-4 "Explosion damage to the plant affecting unit operation or off-site power supplies."
0935	01:35	OSA and TSC are activated and operational.
0945	01:45	AEP staff contacts plant with ETA of 1045 at EOF.
1000	02:00	EOF Operational
1020	02:20	Rod H8 is ejected! Reactor trip, SI and phase B. Rods H10, F8, K10, and F10 are stuck. Conditions exist for a SITE AREA EMERGENCY based on ECC-14 "Fission Product Barriers/Loss of Coolant Accident"
1040	02:40	West Motor Driven Aux Feed Pump trips.
1045	02:45	AEP arrives at the EOF.
1125	03:25	Containment radiation levels are approaching 10000 R/hr. DAP indicates site boundary doses exceed General Emergency levels. Conditions exist for a GENERAL EMERGENCY based on ECC-19 "Radiation Release". A Protective Action recommendation is issued to the State of Michigan.
1150	03:50	Containment pressure relief damper opens causing an unplanned radiation release. Indicator lights remain in "closed" position. Protective Action recommendation number two is issued to the State of Michigan.
1220	04:20	Containment pressure relief damper closes and release stops.

1300

05:00

Recovery begins after a 24-hour time jump.

1400

06:00

Exercise terminates.

