

VIRGINIA ELECTRIC AND POWER COMPANY
EMERGENCY PREPAREDNESS

REPORT ON
NORTH ANNA POWER STATION
SMALL SCALE EXERCISES
JUNE 6, 1981

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Prepared by Peter R. Beament
Review by Station 7-7-81

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NORTH ANNA POWER STATION
SMALL SCALE EMERGENCY PREPAREDNESS
EXERCISE - JUNE 6, 1981

1. DESCRIPTION

A small scale emergency preparedness exercise will be held at North Anna Power Station on June 6, 1981. This exercise will be performed in accordance with the regulations set forth in 10 CFR Part 50, Appendix E; IV section F-3, published in the Federal Register on August 19, 1980.

Objectives

The basic objective of this exercise will be to test the communication links between Federal, State and Local Counties and the station. It will also test the ability of the involved agencies to understand the emergency action level classifications and it will activate the local and State Police response as an added component.

Organizational Detail

The exercise will take place on June 6, 1981 at 9:00 a.m., and will involve the Counties of Louisa, Spotsylvania, Orange, Caroline and Hanover, the State Office of Emergency and Energy Services and Federal Agencies. The Virginia Electric and Power Company will provide appropriate staff at the near-site EOF, on-site TSC and Corporate Emergency Response Center for communication purposes.

The exercise will last approximately three hours.

Scenario

This exercise will simulate a breach of security at the station. A chronological scenario is included with this description as attachment #1. This scenario will be only available to those persons designated to control the exercise and the participants in the exercises will be given the maximum

possible latitude to free play their response to the simulated events. Guidance will be provided to the participants should the exercise free play stray too far from the schedule or intent of the exercise.

Narrative Summary - (Simulated Event)

At 9 a.m., on June 6, 1981, three individuals will penetrate the security fence at North Anna Power Station. Security is aware of the entry because of sensor activation. They inform the Shift Supervisor who declares a Notification of Unusual Event.

The intruders gain access to the Protected Area and manage to avoid detection by security personnel. Because their intentions and whereabouts are unknown an Alert status of emergency action is declared. A call-out of Emergency Response personnel is initiated, the Corporate Emergency Response is initiated and the Louisa and Spotsylvania Sheriff's departments are contacted for assistance.

At approximately 15 minutes after their initial penetration the intruders gain access to the control room and manage to force No. 2 Unit into a black-out condition. Station Security advise that State Police assistance is required. An attempt to disable the steam driven Auxiliary Feedwater Pump in the Feedwater Pump House is stopped by Station Security.

After approximately 75 minutes the Reserve Station Transformers are disabled by explosive charges previously placed by the intruders. The intruders then leave the Control Room taking hostages.

Ninety minutes after the initial penetration by the intruders a Site Emergency is declared. This is required by the Action Levels as stated in Section 4 of the Station Emergency Plan (Item 5, Table 4.1c).

Five minutes later the intruders are captured and the hostages freed.

Two (2) hours after the initial intrusion the actions in the Control Room which forced the station blackout are identified. These actions are discovered to be sabotage to the Emergency Diesel Generator Breaker Switches. The damage is corrected and the Diesel Generators returned to service and placed on line, supplying energy to the Emergency Busses.

Three (3) hours after the first penetration by the intruders the Unit effected is in stable condition; a long-term recovery will be initiated and the exercise is terminated.

Observers

Notification of outside agencies who can, if they desire, participate in this exercise as observers will be made at least 30 days in advance. Observers will be given copies of this description and the attached scenario. Copies of the appropriate emergency procedure will be available for their scrutiny at key locations. Where necessary, security clearance for observers will be obtained in advance upon notification from the participating agencies as to whom their observers will be. A pre-exercise briefing will be held at the station on Friday, June 5 at 10 a.m. for all key exercise participants. This briefing will take place in the auditorium of the Vistors' Center at North Anna.

Scope

To the greatest extent possible free play will be encouraged during the exercise. It should be recognized, however, that control of the exercise may be initiated from time to time to ensure that the prime objectives are accomplished. Points where control had to be used will be brought out during the post-exercise critique.

Because this exercise is primarily to test communication, full activation of the TSC, EOF and Corporate Response Center will not be

required. Personnel will be assigned to those facilities to act as communicators and ensure that all modes of communication can be properly established.

The Institute of Nuclear Power Operations will be informed of the exercise and selected emergency response facilities will be called from the Corporate Emergency Response Center to verify communication capability. These numbers will be selected in advance.

Critique

A post-exercise critique will be held in the North Anna Visitors' Center at 3 p.m. on June 6th to discuss the performance of the exercise. A formal presentation of the results of the exercise and "lessons learned" will be held on June 30, 1981 in the auditorium of the Vepco General Offices at One James River Plaza at 10 a.m. Participating agencies and governments are invited to send representatives

1981 NORTH ANNA POWER STATION
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2. Scenario

- T = 0 Three (3) individuals attempt to enter the Protected Area by scaling the fence. (Security initiates contingency response and notifies Shift Supervisor. Shift Supervisor declares a Notification of Unusual Event and takes appropriate actions.)
- T + 2 min. Individuals gain access to Protected Area and avoid security personnel.
- T + 5 min. Individuals still not located by security. (Alert declared. Call-out of Emergency Response Personnel initiated. Corporate Emergency Plan initiated.) Louisa and Spotsylvania Counties Sheriff's Department personnel assistance requested.
- *T + 15 min. Two (2) intruders gain access to Control Room through back door with aid of insider. Intruders disable H. and J. Diesel Breakers and trip open A, A, B, B, C, C, D1, E1, F1, H1, J1, and J1 Breakers, thereby putting Unit No. 2 in a blackout condition. State Police assistance requested.
- Third intruder attempts to penetrate Unit No. 2 Auxiliary Feedwater Pump House to disable the steam driven Auxiliary Feedwater Pump, but is unsuccessful.
- T + 75 min. Charges placed on Reserve Station Service Transformers detonate, disabling the transformers.
- T + 80 min. Intruders leave Control Room, taking hostages.
- T + 90 min. Site Emergency declared (#5 - Loss of all AC power for greater than fifteen (15) minutes).
- T + 95 min. Intruders captured, hostages freed.
- T + 120 min. Sabotage to Diesel Generator circuits identified and corrected.
- T + 130 min. Diesel Generators on line, supplying Emergency Busses.
- T + 180 min. Unit in stable condition. Long-term recovery phase initiated. Exercise terminated.

*Breaker Numbers Have Been Omitted.

NORTH ANNA SMALL SCALE
EMERGENCY PREPAREDNESS EXERCISE
JUNE 6, 1981

3. Report

General Discussion

A Small Scale Emergency Exercise was held at North Anna Power Station on June 6, 1981, starting at 0903 hours and ending at 1135 hours. This exercise involved the State Office of Emergency and Energy Services and other State Agencies, Local Counties and the Virginia Electric and Power Company station and corporate personnel. The station elected to include a security exercise as part of the overall communication exercise and call for support from the State and local counties.

The exercise brought forth some previously unconsidered problems, and insight into the management of an emergency during its initial phase when a possibility of a lack of information could exist. We experienced some difficulty initially with communication protocol and misunderstandings as to the nature of the emergency and procedures to be followed. These are expounded upon in this report as well as the steps necessary to rectify these deficiencies.

It should be noted, however, that all communication channels were established and maintained during the exercise.

Specific Limitations

It was agreed that for this exercise the corporate emergency response would not be activated. The Corporate Emergency Response Center and EOF were minimally staffed with individuals to act as communicators and they checked out all the communications channels but did not undertake other functions. It was also decided that the media would not be included in the exercise in-as-much-as there would be no visible demonstration of emergency preparedness except within the station security boundary.

Police support from the State and two of the local counties was called on for the exercise. Prior knowledge of the exercise was limited to selected individuals to permit the maximum of free play by the participants.

Description

Briefly the exercise comprised of a intrusion by saboteur/terrorists into the secure area and the destruction of electrical equipment forcing a station shutdown. The intruders gained access to the control room and further disabled equipment as well as blocking communications and information from the control room for approximately 30 minutes. The intruder then left the control room taking hostages. The intruders were immobilized soon after leaving the control room by station security forces.

Control of the station was established on a routine basis soon after the apprehension of the intruders and the exercise ended at 1135 hours. A critique of the exercise was held at 1200 hours which lasted for 90 minutes. Comments were received from the Corporate Emergency Response Center communications over the phone. A critique of the exercise was held with the state on June 12, 1981.

Outside Agency Actions

The State activated their Emergency Operations Center for communications purposes and the counties of Louisa, Spotsylvania, Caroline, Hanover and Orange maintained communications at their respective EOC's. The counties of Louisa and Spotsylvania provided a local law enforcement participation and the State Police also provided law enforcement support.

Louisa County Sheriff's department sent a unit to the station within the first hour of the emergency when standby support was requested by the station. Spotsylvania County responded by blocking the bridge over Lake Anna on Route 208 and maintaining a SWAT team and K-9 team on standby

at that location.

State Police dispatched a unit to the site but while en route directed the unit to go to Louisa Courthouse and standby. The Louisa County EOC called the station during the exercise to request direction for this unit and the EOF requested this unit continue to the site for backup support as originally requested. The State EOC was appraised of this situation.

Conduct of Exercise

The Small Scale Emergency Exercise is intended to be a communications exercise with one other aspect of outside support demonstrated. To give a sense of realism to the exercise of North Anna, the station personnel elect to simulate a security violation. This permits the station to evaluate the interface between security and operations in emergency conditions which had not been done before.

Early in the exercise the Control Room was not available as either a source of data or communication, and for a period of time, the Security Supervisor was in control of the situation---until such time as the Operation Supervisor and Assistant Station Manager could make an assessment upon their arrival on the site.

The free play injected around these initial events and the decisions of the station personnel external to the Control Room was realistic and the actions of the individuals involved, although not covered by specific instructions, was considered as proper by the critique. Communications were erratic during this phase due to lack of familiarity with the Insta-Phone system protocol.

As the exercise progressed the EOF and CERC checked all the communication channels and all were operable. Each station in the EOF was checked - NRC, State, H.P. Assessment and Recovery Manager. The

operation of Radiological Assessment portion of the EOF was entirely successful during this exercise. Communication was maintained with monitoring teams dispatched by the station without any problems. Field monitoring teams were in place (in the field) within approximately 50 minutes after a station "Alert" status had been declared. State participation was not scheduled in field monitoring activities.

Once the Control Room had been regained by operating forces and the TSC fully staffed communications and message content began improving. There was about a 30 minute period of communications that were both to the Control Room/TSC and EOF. The State and Counties were then specifically informed that the EOF was activated and to communicate with that location on future calls.

County Police participation was excellent. Messages and requests were received and complied with. State Police participation was also provided and although the original exercise concept was for a unit to report to the site rather than the Louisa County Courthouse communications with the county cleared this matter and the original intent was carried out.

The exercise concluded at 1135 hours and at 12:30 hours a critique was held with all the on-site participants. Corporate Headquarters comments were solicited over the phone.

The comments and outcome of this critique are listed in this report. Another critique was held with the State on June 12th. Essentially this critique reiterated the same deficiencies and need for improvement or changes as noted in the station critique.

Problems and Solutions

Based upon critiques and subsequent discussions with the parties involved in this exercise a list of problems that occurred during the exercise

and our proposed solutions are listed in this section. It should be noted that some of the problems are minor in nature or involve technical fixes to improve our emergency posture. There are, however, problems that reflect lack of experience and/or training as well as indicating the need to rewrite certain procedures because of perception difficulties by the operators on how to handle emergencies that are not strictly radiological in scope.

Problems

1. Emergency Response Personnel showed a lack of complete familiarity with the communication protocol of the emergency plan and procedures. The Shift Supervisor did not immediately relate a security violation as an emergency. Some individuals were not clear as to their role in the Technical Support Center and the location of the communication channels.

Solution

The station will hold additional training sessions to emphasize the above mentioned deficiencies.

2. Control Room and Technical Support Center personnel were unfamiliar with the Insta-Phone and proper communication techniques. Contact was made and maintained but not in the best manner and there was some confusion during the initial contacts with the State EOC.

Solution

Provide key station personnel with coordinated training and have them spread this training to the shift personnel. Also conduct training sessions at the communication centers for familiarization. In addition, instructions will be posted or made available at the communication stations on the correct procedures to be used.

3. The "Report of Radiological Emergency Form" (that is duplicated in Section 6 of the Station Emergency Plan) does not cover all types of emergencies. Confusion during the exercise arose because station personnel did not perceive the emergency as being radiological in scope. This form was not used in the initial transmittal of data.

Solution

Consider revising the form and drop the word "Radiological" from its title.

4. Insta-Phone communication between the Control Room, TSC, and EOF is not broadcast by speaker attachment but can be heard over the hand-set.

Solution

This is not a real problem but training needs to emphasize the limitations and proper purpose of the Insta-Phone system---which is the transmittal of primary non-detailed information from a single location to the State EOC and Local County EOC's or dispatchers.

5. Status Boards in the TSC and EOF do not consider or have the space to track the status of a multi-unit emergency such as occurred during this exercise when both units were blacked-out.

Solution

Have available an additional status board or modify the existing board.

6. Insufficient personnel available to man the communications in the TSC and EOF.

Solution

This problem resulted because it was intended to use this exercise as a test of the communication network function rather than its continued use.

A full attendance call-out was not intended. Because of the nature of the free play surrounding the security aspect of the exercise a full call-out of communication personnel should be made on all future exercises of this type.

7. Personnel in the TSC and EOF did not have immediate access to EPIP's because they were not stored in a well-marked location.

Solution

Provide quickly identified locations for documents of this type.

8. Declaration of the emergency event was not announced to the station personnel.

Solution

Revise EPIP-1 to include the specific requirement for announcing the nature of an emergency.

9. Headsets would be desirable for the communicators to use.

Solution

Again request the NRC to provide modifications to install headsets for the NRC ring down phones in the control room and TSC and provide the same set-up for the dedicated line phones in the Control-TSC-EOF loop.

10. The Security Shift Supervisor did not recommend declaring an "Alert" when the intruders gained access to the Protected Area.

Solution

Revised SPIP-35 to direct the Security Shift Supervisor to make this recommendation.

11. One of two NRC ring down phones in the TSC did not function properly.

Solution

This phone should be checked again and a request will be made to the NRC to initiate a repair order if this is necessary. It should be noted that the other phone was operable thus assuring continuity of direct communication between the station and the NRC.

12. The instructions in EPIP-1 on the protocol for communications between the Station and the State and Local County EOC's is not explicit.

Solution

EPIP-1 will be revised to include the Notification Form and give more detailed information on what information should be transmitted by Insta-Phone and direct the more detailed information be transmitted by the dedicated Ring Down phones.

13. It would be desirable to extend the dedicated Ring Down Phone line at present in the EOF into the Control Room and TSC.

Solution

This particular exercise showed there is a need to have a rapid exclusive line of communication that would be available early in the event---before the EOF is manned. The dedicated EOF State line will be extended to the Control Room and TSC.

14. No individual with security expertise is presently required to report to the Emergency Director in the TSC.

Solution

Revise EPIP-1, Appendix 6, and the call-out list to include the Station Security Supervisor or alternate who will report to the TSC.

15. The Duress Alarm in the Control Room is not in a concealed location.

Solution

Relocate this alarm.

16. The Ring Down Phone from the Control Room to Security is not in the same location as other communications in the Security building.

Solution

Relocate this Ring Down Phone from the Security Shift Supervisor's desk to the Secondary Alarm Station and add an activation light.

17. Because of the uncertainty caused by this exercise not being considered at first to be a potential radiological emergency the Shift Supervisor did not follow EPIP-1 closely. For example---The Notification of Radiological Emergency Form was not filled in prior to making State and county notifications. As a result much of the required information such as wind speed and direction were not initially transmitted. Also, the person(s) handling the notifications did not call the State OEES as specified in EPIP-1.

Solution:

These concepts will be emphasized in future training and in the posted instructions.

18. Message clearly stating that control of the emergency had been transferred from the Control Room to the TSC and that communications had been transferred from the TSC to the EOF were not sent. It was assumed by the EOF that once they informed the State and Local counties that the EOF was activated, which was done at 1022 hours, it would be understood that all future communication would be with the EOF from those sources.

Solution

It will be emphasized to all communicators that change of control must be clearly understood to have taken place by those responding on the communication links. At 1040 hours during the exercise the EOF realized that some external centers were still trying to communicate directly with the station. The State EOC was called and informed that all communication should be made with the EOF.

19. Incorrect telephone numbers were noted in the corporate call-out list. Some of these were the result of recent address changes and the transposition of numbers during typing.

Solution

Have the telephone lists checked for correctness and make sure periodic checks are carried out to insure these verifications are being made. The corporate call-out list is checked quarterly and most of the errors found in this call-out list are due to be changed in July. All wrong numbers in the primary security call-out were resolved during the call-out and the correct numbers were called. This list is now updated without waiting for the quarterly check.

During the corporate call-out of the principal team leaders, all telephone numbers that were found to be in error were re-verified, corrected, and recalled during the repeat call-out sequence.

Corrections of Deficiencies

All deficiencies mentioned in this report have been communicated to the appropriate parties. Action to correct them has already begun. The items will be re-examined to insure they are, where necessary, modified or changed to improve or upgrade emergency preparedness.

4. SUMMARY

This Small Scale Exercise was incorporated with a security exercise that was intended to give an opportunity to permit free play in the messages that were to be sent to check out the ability of the station to communicate under emergency conditions. It also gave the station personnel an opportunity to use the Insta-Phone system for the first time in other than circuit checks. There was some misunderstanding of the limitations of this system and it was not immediately perceived by the operators in free playing the events that the Radiological Emergency Form should be used in reporting the incident to State and Local Counties.

All channels of communications between the Station, Corporate Office, State EOC and County EOC's were established and their operability verified during the exercise. All communications with field monitoring teams was maintained during the exercise. Communications with outside agencies was verified during the exercise although one of the NRC channels was inoperative; however, the other channel established communications with that agency.

This exercise established the need for additional operator training and information in and on communications as well as a need to improve the instructions in the Emergency Plan Implementing Procedures to emphasize the practical aspects of using the communications system. It was also found that some additions to the communications system need to be made to improve communication during the early onset of the emergency.

As mentioned earlier in this report, these changes are now being implemented.

The State EOC was concerned about the protocol used in communication and felt that operators needed additional education in this

area. We have agreed with the State that some additional joint training sessions would be appropriate.

The most important discovery from this exercise was the perturbation that results from the loss of the control room because of the seizure by intruders. We feel that the actions of the station personnel under the "free play" of these circumstances was rational and realistic. Security forces demonstrated that they were capable of handling this type of emergency and the counties of Louisa and Spotsylvania demonstrated their capability of providing timely support. State Police also demonstrated their ability to support this type of emergency although the "free play" changed the sequence of their response from that originally intended in the discussion held by key personnel in devising the scenario.

The Emergency Operation Facility and Corporate Emergency Response Center were manned with token communicators who were required to verify and provide continuity to communications. This was accomplished. Call-out lists were exercised by establishing numbers which could be reached. Wrong corporate numbers found during the exercise are now or have already been changed. The quarterly review and update of telephone numbers is routinely due to be made during July.

In closing this report, it must be mentioned that the simulation of intruders reaching the control room had to be contrived because they were under actual routine security surveillance immediately upon violating the security fence. Had these routine security patrols been allowed to "free play" an intruder situation then access to the Control Room would not have been possible and the exercise would have ended abruptly in the first few minutes.