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Georgia Power
POWER GENERATION DEPARTMENT
VOGTLE ELECTRIC GENERATING PLANT

INSTRUCTIONAL UNIT

TITLE:	MAKE EMERGENCY CLASSIFICATION	NUMBER:	LO-IU-40101-02-001
PROGRAM:	LICENSED OPERATOR	REVISION:	2
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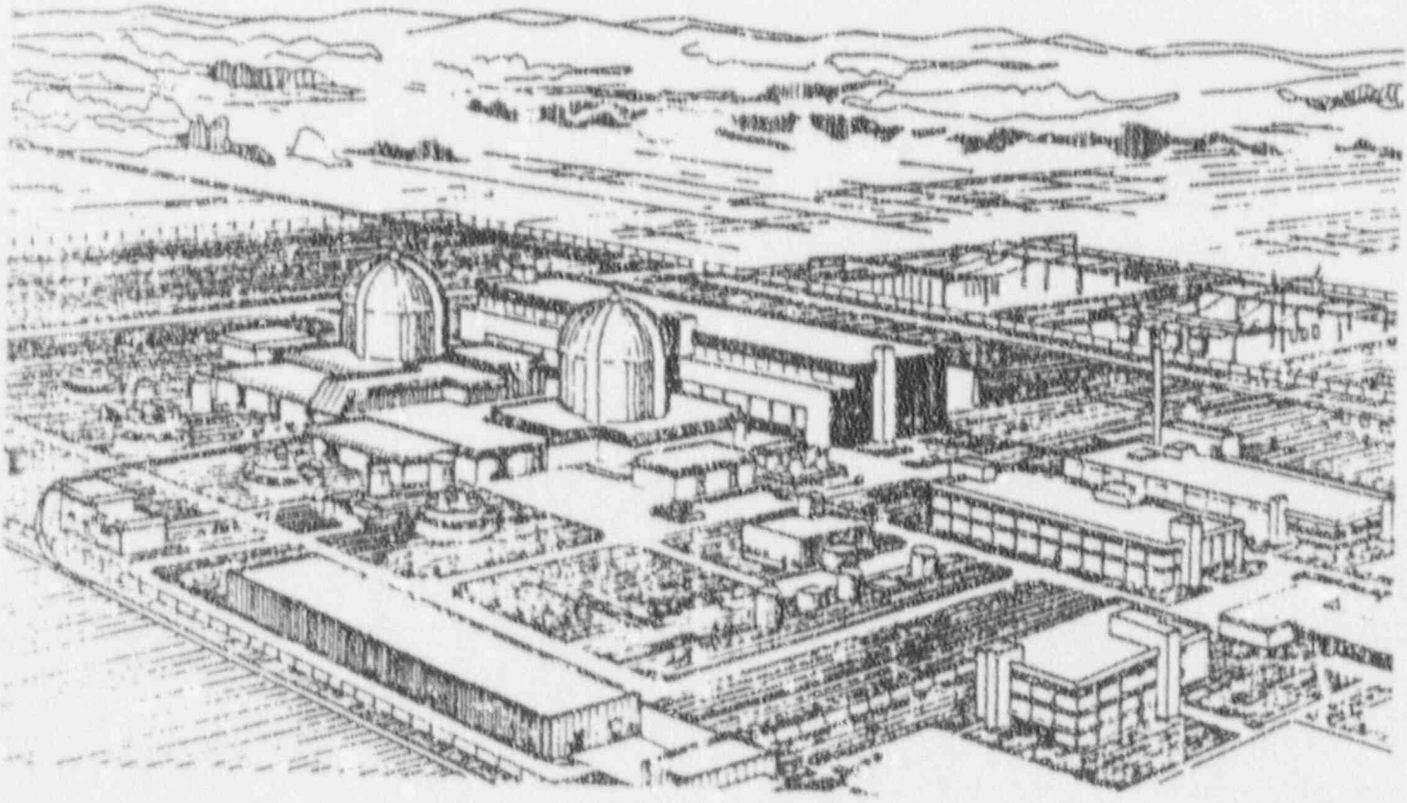

STUDENT _____ DATE _____

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LO-IU-40101-02-0001 Make Emergency Classification

PERFORMANCE OBJECTIVE

Given that a degradation of a plant system that can cause a significant release of radioactivity (if not controlled), a natural phenomenon, or a significant plant radioactivity release has occurred, classify the emergency based upon the severity of the problem.

INFORMATION

In the event of a plant emergency, the Emergency Director is responsible for declaring and classifying the emergency and for implementing protective actions because of the emergency. The OSOS will assume the position of Emergency Director until the OSOS is properly relieved by a person from plant management who is qualified to serve as the Emergency Director (general manager or vice president, nuclear operations). The OSOS is responsible for the initial emergency classification.

Subsequent required actions, including making appropriate notifications and possibly evacuating personnel, will be made by the Emergency Director and will be dependent upon the emergency classification. The types of emergencies listed below are in order of increasing significance.

1. Notification of Unusual Event
2. Alert
3. Site Area Emergency
4. General Emergency

A wide range of problems can lead to a plant emergency. These possibilities have been grouped into 10 categories for purposes of classifying the emergency.

1. A loss of off-site power for the plant
2. A severe violation of Technical Specifications
3. High radioactivity levels in or around the plant
4. Degradation of plant systems required to control the plant
5. Natural phenomenon, including a tornado, hurricane, or earthquake
6. Man-made hazards, including explosions, toxic gas releases, aircraft crashes, and train derailments
7. Security threats
8. A fission product barrier degradation, caused by clad or fuel damage, a LOCA, or a containment breach
9. A complete loss of a system necessary for the safe shutdown of the plant
10. Any other unexpected event or condition that inhibits safe operation of the plant

PROCEDURE 91001-C

Obtain a copy of Procedure 91001-C, "Emergency Classification and Implementing Instructions," for reference. To classify the emergency, you should relate the problem to the matrix (Figure 4) found in Procedure 91001-C. To determine if a fission product barrier has been breached, use Figures 1, 2, and 3 for a fault-tree analysis using the Emergency Response Facilities (ERF) computer; then refer to the matrix in Figure 4 to determine the emergency classification.

Data Sheet 1 must be completed to document the emergency classification. Follow the appropriate checklist to verify that the required actions are carried out.

CLASSIFYING THE EMERGENCY

DETERMINE THE TYPE OF EMERGENCY CONDITION

Use Procedure 91001-C and Figure 4 to determine the type of emergency condition. The ten categories previously discussed must be considered when classifying the emergency.

To determine if a fission product barrier has been breached, use Figures 1-3 and the ERF computer to evaluate the integrity of the fuel cladding, the Reactor Coolant System, and the containment.

Fuel Cladding Integrity - Go to the SPDS annunciator keyboard on the ERF computer to determine if there is a breach of the clad fission barrier. If the "REAC," or "CORE CLG" pushbuttons/alarms are red or orange, or if "HEAT SINK" pushbutton/alarm is red, then a fuel clad failure must be assumed. You can monitor the status tree by depressing the respective pushbutton. You must also consider other factors when trying to determine fuel/clad damage. These factors can be found in Figure 1 of the procedure. If any of those factors exist, then you must also assume a fuel/clad failure, even if you do not have an SPDS alarm.

RCS Integrity - The RCS integrity must also be considered for the emergency classification. If the "CORE CLG" or the "RCS INT" alarm is red or orange, the RCS is breached. Again, other factors must be considered. They can be found on Figure 2 of the procedure. If any of those factors exist, an RCS breach is assumed to have occurred.

Containment Integrity - The status of the containment's integrity can be found by observing the "CNMT" alarm on the SPDS. If it is red or orange, the containment is assumed breached. Figure 3 lists the other factors that must also be considered, similar to the above.

Just as important as determining if a fission product barrier is breached is the determination of how many barriers have been breached. As the

number of breached barriers increases, so does the emergency classification.

The other categories that are criteria in classifying an emergency must also be considered. They are more obvious: plant status, environmental conditions, reports from operators, and plant staff, etc.

DETERMINE THE EMERGENCY CLASSIFICATION

Using Figure 4 from the procedure, compare the known conditions with the conditions listed under the applicable categories to determine the correct emergency classification.

To determine the appropriate classification in terms of fission product release, use the results of the analysis of fission product barriers. If a breach was found in one of the three fission product barriers, the emergency should be declared an Alert. If two barriers were breached, the classification should be a Site Area Emergency, and if all three barriers have been breached, a General Emergency exists.

COMPLETE DATA SHEET 1

This data sheet serves as documentation that you have completed the steps required to classify the emergency, including analyses of the integrity of the fission product barriers using Figures 1, 2 and 3. Also, you determine the highest emergency classification level for present plant conditions using Figure 4.

COMPLETE THE CHECKLIST FOR THE EMERGENCY CLASSIFICATION

Use the checklist for the emergency classification that you have declared. For a Notification of Unusual Event classification, you will make a public address announcement. If the classification is for an Alert, you will also sound the Alert alarm which is a warble tone. The alarm for a Site Area Emergency is a pulse tone; the alarm for a General Emergency is a yelp tone. For a Site Area or General Emergency, in addition to making the public address announcement and sounding the alarm, you must direct the site evacuation of all nonessential personnel.

Each checklist will direct you to the appropriate Emergency Plan Implementing procedures (EPIP's); these procedures will be discussed in subsequent chapters. You will continue to act as Emergency Director until you are relieved by a qualified person from plant management.

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PERFORMANCE GUIDE

Follow these steps to make the emergency classification.

1. Determine the type of emergency condition.
2. Determine the emergency classification.
3. Complete Data Sheet 1.
4. Complete the checklist for the emergency classification.

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SELF-TEST

Before proceeding to the Task Practice, answer the following questions.

1. The _____ or the _____ will relieve the OSOS as the Emergency Director.

2. List the four emergency classifications in order of increasing significance.

3. List the three fission product barriers.

4. What is the appropriate emergency classification if a breach is found in two fission product barriers?

ANSWERS

1. general manager
   Vice president, nuclear operations
2. Notification of Unusual Event
   Alert
   Site Area Emergency
   General Emergency
3. Fuel Cladding
   Reactor Coolant System
   Containment
4. Site area, if there are no additional problems that require a higher emergency classification

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TASK PRACTICE

1. Review Procedure 91001-C. Be sure that you understand the procedure limitations and the sequence of the steps. If you have any questions, ask the instructor to explain.

2. Use Procedure 91001-C to classify the following emergency situations.
   a. Following a LOCA, the pressurizer level is dropping, and the safety injection charging flow cannot maintain the pressurizer level. The dose rate at the protected area fence is measured at 10 mR/hour and the projected two-mile radius dose rate is 2 mR/hour.

   b. One hour after the accident described in "a," the dose rate at the protected area fence has increased to 2 rem/hour.

   c. With the plant operating in mode 1, the operators discover that both RHR trains are inoperable.

   d. With the plant operating in mode 1, the gross-failed fuel detector alarms and a chemistry sample indicates high fission product composition in the fuel; clad damage is suspected.

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FEEDBACK ON TASK PRACTICE

1. If you have any questions, refer to the Information section of this chapter or ask your instructor.

2. a. Considering only the radioactivity release, the classification would be as an Alert, because the dose rate is greater than 0.5 mR/hour but less than 50 mR/hour (for a Site Area Emergency classification). However, the loss of coolant accident is outside the makeup capability of the ECCS and constitutes a breach of a fission product barrier; therefore, the classification must be a Site Area Emergency.

   b. Because the dose rate now exceeds the maximum dose rate for a Site Area Emergency (less than 1 rem/hour), the classification must be upgraded to a General Emergency.

   c. The inoperability of both RHR trains represents a loss of the capability to cool down the RCS to less than 350 degrees F (Table 2), a Site Area Emergency classification.

   d. Using Figure 1 to evaluate the fuel cladding integrity, it must be assumed that the fuel cladding has been breached or challenged. A breach or challenge to one of three fission product barriers must be classified as an Alert.