ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Inspection Report: 50-528/95-22
50-529/95-22
50-530/95-22

Licenses: NPF-41
NPF-51
NPF-74

Licensee: Arizona Public Service Company
P.O. Box 53999
Phoenix, Arizona

Facility Name: Palo Verde Nuclear Generating Station, Units 1, 2, and 3

Inspection At: Palo Verde Site, Wintersburg, Arizona

Inspection Conducted: November 27 through December 1, 1995

Inspectors: Arthur D. McQueen, Emergency Preparedness Analyst
Ryan E. Lantz, Reactor Inspector

Approved: Blaine Murray 12/29/95
Blaine Murray, Chief, Plant Support Branch
Division of Reactor Safety
Date

Inspection Summary

Areas Inspected (Units 1, 2, and 3): Routine, announced inspection of the operational status of the emergency preparedness program including changes to the emergency plan and implementing procedures; emergency facilities, equipment, and supplies; organization and management control; training; internal reviews and audits; effectiveness of licensee controls; and followup on previous inspection findings.

Results:

Plant Support

- The licensee had properly reviewed and submitted to NRC changes to the emergency plan and implementing procedures (Section 1).
- The licensee had maintained an effective relationship with offsite emergency response organizations (Section 1).

- Emergency facilities, equipment, and supplies had been maintained in a proper state of operational readiness (Section 2).

- Emergency response organization members were adequately trained to successfully perform their emergency functions. A formal electronic tracking system accurately and reliably maintained a current qualified list of site emergency responders (Section 4.1).

- The performance of operating crews in implementing emergency response actions during walkthrough evaluations was generally good. Crew communications, command and control, and use of procedures was good, with some exceptions noted (Section 4.2).

- Quality assurance audits and performance observations of emergency preparedness and planning had been performed by qualified personnel and were of proper scope, depth, and effectiveness (Section 5).

- An effective system of controls had been maintained regarding safety issues, events, and problems. This system emphasized early detection and elevation to an appropriate management level, and timely, effective implementation of corrective actions (Section 6).

- No emergency event had been declared at the site since the last routine emergency preparedness inspection (Section 8).

Summary of Inspection Findings:

- Exercise Weakness (528/9504-01, 529/9504-01 and 530/9504-01) was closed (Section 7.1).

- Exercise Weakness (528/9504-02, 529/9504-02 and 530/9504-02) was closed (Section 7.2).

Attachments:

- Attachment 1 - Persons Contacted and Exit Meeting

- Attachment 2 - Emergency Preparedness Inspection Scenario Narrative Summaries

DETAILS

1 EMERGENCY PLAN AND IMPLEMENTING PROCEDURES (82701-02.01)

The inspectors reviewed changes in the licensee's emergency plan and implementing procedures to verify that these changes had not decreased the effectiveness of emergency planning and that the changes had been reviewed properly and submitted to NRC.

Since the previous inspection, two emergency plan revisions had been implemented (Revisions 15 and 16). These were submitted to NRC for review prior to implementation and were found acceptable by NRC. For each emergency plan revision, the licensee had performed a documented review in accordance with 10 CFR 50.54(q) to determine that the revisions did not decrease the effectiveness of emergency preparedness.

The inspectors also reviewed documentation pertaining to selected portions of the 43 revisions to the emergency plan implementing procedures implemented since the last routine inspection. The inspectors reviewed changes in procedures and noted that the changes were consistent with regulatory requirements and the licensee's commitments. Review, approval, and distribution of the plan and procedure changes were conducted in accordance with licensee Emergency Plan Implementing Procedure 16DP-0EP01, "Review of Emergency Planning Procedures in Accordance with 10 CFR 50.54(q)," Revision 2, effective September 8, 1995.

All but one procedure change had been submitted to the NRC on a timely basis and within the required 30 days. This apparent violation of regulatory requirements had been appropriately identified by the licensee in Nuclear Assurance Evaluation Report (ER 95-0965) and Condition Report/Disposition Request 9-5-Q590 295-0254 was initiated for corrective action. The procedure was promptly forwarded to NRC. The inspector determined that the late submittal did not involve any significant safety issues. Corrective actions were reviewed and appeared appropriate to prevent recurrence.

The licensee maintained an effective relationship with offsite agencies. Changes in emergency action levels were coordinated, in writing, with those agencies annually or as appropriate. This coordination occurred on virtually a weekly basis. The inspectors reviewed letters of agreement established with support agencies and determined that they had been reviewed annually and were updated as required.

2 EMERGENCY FACILITIES, EQUIPMENT, INSTRUMENTATION, AND SUPPLIES (82701-02.02)

The inspectors toured onsite emergency facilities and reviewed the licensee's emergency equipment inventories and maintenance to verify that facilities and equipment had been maintained in a state of operational readiness.

A tour was made of each emergency response facility which included the inspection of various equipment items, instrumentation, and supplies. Facilities inspected were the three control rooms, the technical support center, three operations support centers, and the emergency operations facility. The facilities were observed to be well maintained and ready for emergency use. No substantive changes had occurred at any emergency response facility since the last inspection with one exception. The technical support center had been enlarged by removing some walls. This appeared to be an enhancement of the center. Random inspections were performed of radiation monitoring and respiratory equipment at each emergency response facility. All selected items were verified as being in calibration or had been appropriately inspected on a scheduled basis. Equipment and supplies placed in response facilities and in emergency equipment lockers matched scheduled inventories. Current copies of the implementing procedures and emergency telephone directories were maintained in all facilities. Primary and backup communications in each facility were as described in the emergency plan. The inspectors reviewed documentation pertaining to inventories, testing, and maintenance of emergency response facilities and noted that they had been performed as required.

3 ORGANIZATION AND MANAGEMENT CONTROL (82701-02.03)

The inspectors reviewed the emergency response organization staffing levels to determine whether sufficient personnel resources were available for emergency response. The emergency planning organization was reviewed to ensure that an effective programmatic management system was in place.

The Arizona Public Service Company emergency preparedness staff for the Palo Verde Nuclear Generating Station consists of an emergency planning group. The group is responsible for onsite and offsite emergency planning and reports to the site emergency planning program leader, who reports to the Vice President, Nuclear Support. The group has 12 personnel assigned to support emergency planning. The emergency planning organization was fully staffed with qualified personnel.

The site emergency response organization was made up of about 750 personnel. The primary callout system for activating the emergency response organization was by pager or by auto-dialer during off-duty hours. The auto-dialer was capable of 32 calls at a time, and asks pertinent fitness for duty questions when responded to. A list of personnel trained and experienced to function in emergency response organization positions was being maintained by emergency planning. At the time of the inspection, the organization had a depth of about five qualified personnel per position and more for many positions. All personnel are called in the event of an emergency response organization activation, and a response organization is then staffed by those reporting to emergency response facilities. Unneeded responding personnel are released for subsequent shifts or other duties. Positions are designated for fill by a

cognizant division in coordination with the emergency planning group. Upon transfer or departure of an incumbent, his/her replacement is designated by the cognizant manager. The licensee had trained and qualified an appropriate number of emergency response personnel to ensure a good depth in the organization.

No significant changes in offsite emergency response organizations had occurred since the last routine emergency preparedness inspection.

4 TRAINING (82701-02.04)

The inspectors reviewed the emergency response training program and interviewed selected individuals to determine whether emergency response personnel had received the required training and complied with the requirements of the Palo Verde Nuclear Generating Station administrative procedures and emergency plan, 10 CFR 50.47 (b)(15), and 10 CFR Part 50, Appendix E.IV.F.

4.1 Training

The inspectors reviewed 15 training records of emergency response organization members to verify that they had obtained the required training in accordance with Procedure 15DP-0TR34, "Emergency Plan Training," Revision 7. The records of training were maintained in an electronic database, updated from class attendance records, drill critique records, and other documentation. Three of the individuals had not yet completed their annual required training, which was consistent with the current list of qualified emergency response organization responders. The remaining reviewed records indicated that the individuals had completed the required training and were accurately designated as qualified for their respective positions in the emergency response organization.

Individual participation of emergency response organization members in annual drills and exercises was also tracked accurately and efficiently on a similar, but separate database from the training/qualification database. The inspector noted that members of the emergency response organization were not formally required to participate in an annual drill or exercise at an established frequency, although Procedure 16AC-0EP05, "Emergency Preparedness Drills," Revision 3, Section 5.5, states, in part, that "drills for the emergency response organization are conducted periodically . . . to ensure that each member of the emergency response organization is familiar with and can perform his duties." The inspector questioned the licensee as to the intent of this section of the procedure. The licensee had previously identified this issue during an emergency plan review and had issued a condition report/distribution request (CRDR 9-5-Q432, dated September 15, 1995) to clarify this element in the procedure and the emergency plan. Action was pending on that item.

4.2 Walkthroughs with Operating Crews

The inspectors conducted a series of emergency response walkthroughs with three operating crews to evaluate the adequacy and retention of skills obtained from the emergency response training program. Two walkthrough scenarios were developed by the facility, approved by the NRC, and administered by the NRC to the crews to determine, through demonstrated performance, whether control room personnel were proficient in their duties and responsibilities as emergency responders during a simulated accident scenario. Attachment 2 to this inspection report contains a narrative summary of the walkthrough scenarios.

The inspectors observed three crews using the control room simulator in the dynamic mode. The scenario consisted of a sequence of events requiring an escalation of emergency classifications, culminating in a general emergency. The scenario was developed to run approximately 75 minutes. The inspectors observed the interaction of the response crews to verify that authorities and responsibilities were clearly defined and understood. The walkthroughs also allowed the evaluation of the crews' abilities to assess and classify accident conditions, utilize abnormal and emergency operating procedures, perform dose assessments, develop protective action recommendations, and make corresponding notifications to offsite authorities.

The performance of operating crews during walkthrough evaluations was generally good. The following observations were noted in communications, command and control, and operating procedure usage:

- One crew's emergency coordinator did not inform the control room operators of the escalation of the emergency declaration for 5 minutes in one instance and 7 minutes in another.

- One control room supervisor misinterpreted Step 2.2 of 41AO-1ZZ08, "Steam Generator Tube Leakage." This step called for a reactor trip if steam generator tube leakage was greater than 80 gallons-per-minute or pressurizer level could not be maintained. The control room supervisor interpreted the step to require both loss of pressurizer level control and leakage greater than 80 gallons-per-minute prior to requiring a reactor trip. Actual leakage rates established by the facility simulator operators were less than 80 gallons-per-minute and did not require a reactor trip, however, the control room supervisor should have directed a reactor trip based on the direction of Step 2.2 in 41AO-1ZZ08, and reports of estimated leakage rates of greater than 80 gallons-per-minute.

- Control of auxiliary feedwater flow post-reactor trip was weak. In one crew, the control room supervisor's direction was non-specific, in that he directed the control board operator to "reduce flow a bit" from the greater than 1000 gallons-per-minute that was being fed, and gave a minimum flow of 500 gallons-per-minute. The control room supervisor did not follow up on his order to reduce flow, and the secondary operator

only reduced feed to the intact steam generator, but maintained total feed flow at approximately 1000 gallons-per-minute. In a second crew, the secondary operator established post-trip feed rate of 1826 and 521 gallons-per-minute to the ruptured and intact steam generators, respectively. Standard post-trip actions direct a minimum of only 500 gallons-per-minute total and cautions to not cause an excessive cooldown rate with feed flow. However, facility management stated in a debriefing with the inspector that this was considered an excessive feed rate for standard post-trip actions. An excessive feed rate could establish an excessive cooldown rate of the reactor coolant system, potentially masking indications of other failures and needlessly complicating mitigation actions for the casualty.

- The shift technical advisor from two crews mistakenly identified that harsh containment conditions existed when the radiation monitoring system units were mistakenly read as rem/hour instead of millirem/hour. This unit inconsistency between the radiation monitoring system and the emergency response facility data acquisition and display system caused some delay with the dose assessment.

The inspectors' observations were discussed with licensee training personnel. The licensee stated that the observations would be evaluated and improvements would be made to the training program as appropriate.

The training organization had maintained an effective emergency response training program with minor challenges noted. All members of the emergency response organization designated as qualified had been trained in accordance with applicable station procedures. The performance of operating crews in implementing emergency response actions during walkthrough evaluations was generally good.

5 INDEPENDENT AND INTERNAL REVIEWS AND AUDITS (82701-02.05)

The inspectors met with quality assurance personnel and reviewed independent and internal audits of the emergency preparedness program performed since the last inspection to determine compliance with the requirements of 10 CFR 50.54(t).

The inspectors reviewed and discussed with the nuclear assurance plant support department leader and the principle emergency preparedness auditor the most recent annual audit (Audit Report 95-002) of the emergency preparedness program, which had been performed from February 21 through March 3, 1995. The audit team members appeared to be well qualified. All team members were certified auditors with current recertification as set forth in the licensee's Procedure 60AC-0TR01, "Training, Qualification and Certification of Nuclear Assurance Personnel," Revision 3, dated August 18, 1995, which incorporates

certification criteria to perform audits in accordance with ANSI Standard N45.2.12. The team included personnel familiar with and experienced in emergency planning. The inspectors reviewed the audit plan, scope of the audit, and the audit check list. The audit appeared to be thorough and complete.

The audit report was issued to appropriate levels of management at the plant and to the corporate level. Nuclear assurance maintained a tracking system which established suspense dates for response by cognizant managers for items identified in a report that required correction or improvement. Condition reports/disposition requests were issued for tracking each audit finding and enhancement item.

Since the last routine NRC inspection, the nuclear assurance organization had conducted about 21 surveillances related to emergency preparedness. A sample surveillance was reviewed by the inspectors and was verified as being appropriate to observed activities and findings.

6 EFFECTIVENESS OF LICENSEE CONTROLS (82701-02.06)

The inspectors reviewed the adequacy of the licensee's controls systems pertaining to safety issues, events, or problems. The review included discussions with nuclear assurance and emergency preparedness staff personnel and review of procedures and documentation of problem identification, root cause analysis, management review of problem identification and solution, and corrective actions.

The licensee's controls systems were effective in identifying, resolving, and preventing problems by providing for review of such areas as corrective action systems, root cause analyses, safety committees, and self assessment in the area of emergency preparedness. The principle tool in managing corrective actions was the condition reports/disposition requests. All personnel were trained in use of the condition report/disposition request system in their site general employee training. They were encouraged to initiate the appropriate documentation through their supervisors but are also instructed in how to submit the reports without going through supervisors. This system was managed by a condition reports/disposition request committee, which meets daily to perform review, assignment, tracking, and closure of reports/ requests.

For focusing on items of interest to the Executive Vice President, Nuclear, a Level 1 nuclear project list was established. At the time of this inspection, three items pertaining to emergency planning/preparedness were on the Level 1 list. Status of these items must be briefed on a scheduled basis to senior management along with projected completion actions and dates.

Additionally, a tracking system used by emergency planning for tracking problems, issues, etc., was the emergency planning action items list, which contained items for followup by emergency planning.

The inspectors reviewed sample condition report/disposition requests and emergency planning action items list items and determined that the corrective action program was properly implemented. The licensee had maintained an effective system of controls pertaining to safety issues, events, or problems which emphasized early detection and elevation by an appropriate management level, and effective implementation of corrective actions.

7 FOLLOWUP ON PREVIOUS INSPECTION FINDINGS (92904)

7.1 (Closed) Exercise Weakness 528/9504-01; 529/9504-01 and 530/9504-01: Late Notification

During the 1995 annual emergency exercise, offsite agency notifications via the notification alert network at the general emergency were not conducted within 15 minutes of event declaration as required by Section 6.3 of the emergency plan. The failure to make required offsite agency notifications within 15 minutes was identified as an exercise weakness. By letter dated June 1, 1995, File: 102-03378, the Arizona Public Service Company responded to the NRC setting forth immediate corrective actions and corrective actions to prevent recurrence for this weakness. Corrective actions indicated in the Arizona Public Service Company letter had been completed and appeared appropriate to prevent recurrence. Notifications to the offsite agencies were specifically observed during the simulator walkthrough sessions with three control room crews and support personnel regarding this weakness. All notifications were timely and in accordance with procedures.

7.2 (Closed) Exercise Weakness 528/9504-02; 529/9504-02 and 530/9504-02: Confusing Information Sent to Offsite Agencies

During the 1995 annual emergency exercise, conflicting and potentially confusing information regarding protective action recommendations was provided to the offsite agencies at the site area emergency. Providing conflicting and confusing information to offsite agencies was identified as an exercise weakness. By letter dated June 1, 1995, File: 102-03378, the Arizona Public Service Company responded to the NRC setting forth immediate corrective actions and corrective actions to prevent recurrence for this weakness. Corrective actions indicated in the Arizona Public Service Company letter had been completed and appeared appropriate to prevent recurrence. Notifications to the offsite agencies were specifically observed during the simulator walkthrough sessions with three control room crews and support personnel regarding this weakness. No confusion was indicated in notifications to offsite agencies.

8 ONSITE FOLLOWUP OF EVENTS AT OPERATING POWER REACTORS (93702)

No emergency event had been declared at the site since the last routine emergency preparedness inspection.

ATTACHMENT 1

1 PERSONS CONTACTED

1.1 Licensee Personnel

*T. Barsuk, Senior Coordinator, Emergency Planning
*H. Bieling, Manager, Emergency Planning
G. Cerkus, Emergency Planner, Drills/Exercises
R. Duncan, Coordinator, Emergency Planning
*R. Fullmer, Department Leader, Plant Support, Nuclear Assurance
*F. Gower, Site Representative, El Paso Electric
*R. Henry, Site Representative, Salt River Project
*D. Larkin, Engineer, Nuclear Regulatory Affairs
B. Lee, Operations/Engineering Advisor, Emergency Planning
*J. Levine, Vice President, Nuclear Production
*J. Nielson, Evaluator, Nuclear Assurance
*R. Nunez, Department Leader, Operations Training
M. Pioggia, Emergency Planner, Program Support
*J. Velotta, Director, Training

The inspectors also held discussions with and observed the actions of other station and corporate personnel.

*Denotes those present at the exit interview.

2 EXIT MEETING

An exit meeting was conducted on December 1, 1995. During this meeting, the inspectors reviewed the scope and findings of the inspection as presented in this report. The licensee did not identify as proprietary any of the materials provided to, or reviewed by, the inspection team during the inspection.

ATTACHMENT 2

SCENARIO OVERVIEW

SCENARIO OVERVIEW

The unit is at 100% power with AFA-P01 out of service, when a RCS Loose Parts /Vibration alarm is received. After the loose parts alarm, a Steam Generator Tube Leak occurs in #1S/G. The Crew responds to alarms and enters 41AO-1ZZ08, Steam Generator Tube Leak. After classification, (ALERT) the leak degrades to a rupture. Pressurizer level and pressure decreases. The Crew should manually trip the reactor or respond to an automatic trip and perform the Standard Post-Trip Actions (SPTA's). Failure of the SBCS System results in MSSVs lifting and one MSSV sticks in the open position. The event should be upgraded from an ALERT to a SITE AREA EMERGENCY. After the STPA's are completed, the crew enters 40EP-9EO08, Functional Recovery Procedure, due to a dual event in progress. A Failed Fuel element occurs requiring upgrading the event classification to a GENERAL EMERGENCY. The session continues until the ruptured Steam Generator is isolated and primary pressure is approximately equal to the ruptured Steam Generator Pressure.

SCENARIO

Allow Operators time to assume responsibility for their assigned positions.

I. EVENT ONE -- Loose Parts/ Vibration Annunciator on 7C14B, Loose Parts Vibration Monitoring Cabinet Alarm.

A. Annunciator Response

1. Crew verifies channels in alarm

   Channels 11 and 12 Core Internals (vibration) are in alarm

   Vibration group contacted to perform analysis within 72 hours.

II. EVENT TWO- STEAM GENERATOR #1 TUBE LEAK OCCURS

A. Crew responds to RMS alarms per 74RM-9EF41

B. Crew recognizes indications of a Steam Generator #1 Tube Leak and enters 41AO-1ZZ08.

1. The SS may notify the Site Shift Manager at this time.
2. The SS addresses applicable tech. specs. for primary to secondary leakage limits, and may direct the crew to a plant shutdown.

C. SS/SSM Classifies the Event as an ALERT per EPIP-02 and implements EPIP-03 for notifications , etc.

- Minimum Classification is an Alert due to indicated SGTL of greater than 44 GPM(Potential Loss of the RCS Barrier.). This classification may not occur until the crew has completed the 15 minute leak rate calculation, However, the SS may have classified an NUE based on preliminary leak rate data.

D. The STA verifies the Emergency Plan Classification, determines reportability and communicates the results to the SS.

E. SS notifies SSM of Emergency situation and conducts transfer of EC responsibilities to the SSM upon SSM arrival in the Control Room.

F. EC directs STSC Communicator to complete The NAN EMERGENCY Message Form and notificatons to State and County commence within 15 minutes of Classification.

G. NRC will be contacted immediately following notification of State/County Agencies and within 60 minutes of the Classification

H. The NRC phone will be manned by an STA, RO, or an SRO.

I. The EC will determine if Assembly/Accountability is needed.

J. CRS tailboards event including trip criteria

III. EVENT THREE--- STEAM GENERATOR TUBE RUPTURE / STUCK OPEN MSSV/ REACTOR TRIP.

A. Crew manually trips the reactor or an automatic trip occurs on low Pressurizer pressure.

B. STANDARD POST TRIP ACTIONS

1. RCS Inventory Control acceptance criteria is NOT met due to Pressurizer level not recovering.
2. RCS Pressure Control acceptance criteria is NOT met due to Pressurizer pressure remaining below SIAS setpoint.

- Crew Ensures one RCP is stopped in each loop.

3. Containment Isolation acceptance criteria is NOT met due to RU-139/142 alarms
4. CRS diagnoses events (SGTR with an ESD). The STA verifies SPTA, verifies the diagnosis and communicates the results to the CRS.
5. Crew enters Functional Recovery Procedure (40EP-9EO08),

C. EC reclassifies the event as a Site Area Emergency due to SG tube leakage with release of contaminated steam to atmosphere

1. The STA verifies the Emergency Plan Classification, determines reportability and communicates the results to the SS.
2. EC directs completion of the NAN Emergency Message form and notificaton of reclassifications commence
3. EC implements EPIP-03 for Assembly and Accountability and Protective Action Recommendations of SHELTER within a 2 mile radius.

D. Crew verifies Th of less than 550°F using ADV's

1. The crew isolates SG#1

E. Verifies SG #1 pressure less than 1135 psia

F. Crew Depressurizes the RCS while maintaining :

1. Within the P/T curve
2. Less than 1135 psia
3. Approx. equal to pressure of affected S/G.

G. When HPSI throttle criteria is met the crew will throttle HPSI flow.

IV. EVENT FOUR-- FUEL ELEMENT FAILURE

A. Crew responds to RMS indications of RU- 148 >1.2 E+6 Mr/Hr and performs alarm responses.

B. EC/SS reclassifies event as a General Emergncy due to Loss of the Fuel Clad, RCS, and Containment Barriers.

1. The STA verifies the Emergency Plan Classification, determines reportability and communicates the results to the SS.
2. EC directs completion of the NAN Emergency Message form and notificaton of reclassifications commence
3. EC calls for SITE EVACUATION.
4. EC implements EPIP-03 and makes Protective Action Recommendations of EVACUATION for a 5 mile radius and 10 miles in potentially affected sectors.
5. Direct Chemistry to sample the RCS every 30 minutes for BOTH of the following:
   a) Activity.
   b) Boron concentration.
6. Maintain isolated steam generator level 40 - 80% NR.

V. The scenario may be terminated when the crew has control over the affected SG level and Primary and Secondary pressures are approximately equal and notifications of General Emergency have been completed.

APPENDIX B

EVENT	TIME	SYNTAX	DESCRIPTION	MISC.
1	T=1	IOR AN:7C14B1 ALARM_ON IOR ZLRCECH11VI ON IOR ZLRCECH12VI ON (Link these commands to an available trigger, and activate trigger)	Reactor Coolant Core Internals vibration alarm., and will turn LED's 11 and 12 on at the LPVM Cabinet.	When STA responds to alarm response, inform him that LED 11 and 12 are lit and in alarm status and the alarm does not clear. Should not have to prompt the STA
2	T= 5	IMF THO6A 7.25 2:00	#1 SG tube leak (approx 60gpm)	If requested to do Aux. Steam lineup, use P&ID, MS11 to position ASNV015
3	T=35 (Approx. time) After crew completes a leak rate calculation, the Alert Classification is made, and the NAN Notifications are made.	MMF TH06A 50	SGTR (1 Tube) on S/G #1	
4	Enter Approx. 10 sec. after trip.	IMF RV02:SGEPSV572 100	Main Steam Safety Valve Stuck Open (S/G#1) at 100% (auto. operation of the SBCS has been disabled in the setup)	If asked to investigate, steam is seen coming from the roof of the MSSS, possibly from a S/G safety. Also, if RP or EFF. is asked to monitor, there will be increased activity in the area of the #1 S/G safety that is lifting.
5	T=50 (Approx.time) After Site Area Emerg. is declared and notifications. are made	IMF TH05 10 2:00. After this malfuntion has been entered, Activate CAE ! NUU07fuelfail	10 % Fuel Failure over a 2 min. period The CAE ramps RU-148, up to values for a GE classification.	

SCENARIO OVERVIEW

This scenario starts with an RCS leak at >44 GPM. The crew will address 41AO-1ZZ14, Excessive RCS Leakage The leakrate will require the EC to declare an ALERT. The crew determines the need to start a plant shutdown. The leak degrades to a LOCA . The reactor will trip on low pressurizer pressure or the crew will manually trip the reactor based on plant trends. The crew will perform the SPTA's and enter the LOCA procedure. Shortly after the SIAS , fuel failure develops. The event now will be upgraded in Classification to a SITE AREA EMERGENCYdue to high radiation levels in containment and a loss of RCS subcooling. On CSAS actuation, Containment Spray Valve 672 (A Train) fails to open. A loss of vital bus PBB-S04 ocurrs, which eliminates the only source of Containment Spray Flow. The crew will transition from the LOCA procedure to the Functional Recovery Procedure (FRP). The EC will now upgrade the event to a GENERAL EMERGENCY. The scenario will terminate when the plant is stabilized and all E-Plan notifications are made or started.

SCENARIO

Allow operators time to assume responsibility for their assigned positions

I. EVENT ONE - RCS LEAK AT > 44 GPM

Crew performs leakrate calculation IAW 41AO-1ZZ14

- The crew addresses Tech. Specs. and determines a plant shutdown is needed.
- The SS/EC declares an ALERT per EPIP-02, based on RCS Leakage >44 GPM (Potential Loss of the RCS Barrier). However the SS may have classified an NUE based on preliminary data.
- The SS/EC implements EPIP-03 for notifications etc.
- The STA verifies the Emergency Plan Classification, determines reportability and communicates the results to the SS.
- SS notifies SSM of Emergency situation and conducts transfer of EC responsibilities to the SSM upon SSM arrival to the Control Room.
- EC directs STSC Communicator to complete The NAN EMERGENCY Message Form and notificatons to State and County commence within 15 minutes of Classification.
- NRC will be contacted immediately following notification of State/County Agencies and within 60 minutes of the Classification
- The NRC phone will be manned by an STA, RO, or an SRO.
- The EC will determine if Assembly/Accountability is needed.
- CRS tailboards event including trip criteria

II. EVENT TWO -LOCA, REACTOR TRIP

A. Crew performs the SPTAs with applicable contingency actions taken:

1. CRS performs diagnostic and refers to Break I.D. chart and determines a LOCA is in progress in Containment.

B. CRS tailboards the event and transitions to the LOCA Procedure.

1. Crew determines that RCS subcooling has been lost and stops all RCP's.
2. The crew should recognize that SIA-UV-672, the 'A' Train Containment Spray Valve did not open on a Containment Spray actuation.
3. The EC determines that the RCS Barrier has been LOST.
4. STA Performs the following:
   - The STA verifies the Emergency Plan Classification, determines reportability,verifies mitigation strategies, and communicates the results to the SS/EC.
   - The STA performs the event specific safety function status check.
   - The STA checks indications for unacceptable parameters and trends. If any are noted the STA communicates this to the crew.

III. EVENT THREE -- FUEL FAILURE

A. Crew responds to Radiation alarms

B. The EC declares a SITE AREA EMERGENCY based on high radiation levels in containment as seen on RU-148 and RU-149. This represents a Loss of the fuel clad barrier.

1. The STA verifies the Emergency Plan Classification, determines reportability and communicates the results to the SS.
2. EC directs completion of the NAN Emergency Message form and notificaton of reclassifications commence
3. EC implements EPIP-03 for Assembly and Accountability and Protective Action Recommendations of SHELTER within a 2 mile radius

IV. EVENT FOUR -- LOSS OF VITAL 4160V. BUS (PBB-S04), LOSS OF CONTAINMENT SPRAY

A. Crew recognizes loss of a safety function .

B. CRS transitions to the Functional Recovery Procedure .

1. CRS Performs FRP Entry Procedure Steps 1-7
   - Safety Function Tracking (Section 4.0), Enters the EOP Entry Time
   - Selects a success path to satisfy each safety function for which Success Path 1 acceptance criteria are not met.
   - Determines whether the selected success paths are in jeopardy.
2. CRS direct the STA to perform the Safety Function Status Check
3. The CRS Directs the performance of the Success Paths needed to regain Safety Functions.
4. STA Performs the following:
   - The STA, verifies the diagnosis and communicates the results to the CRS.
   - The STA verifies mitigation of the event by monitoring trends and indications and comparing them to expected results. If the event is not being mitigated, a modification to the plan of action is developed and communicated to the CRS.
   - The STA checks indications for unacceptable parameters and trends. If any are noted the STA communicates this to the crew.

C. EC recognizes a potential Loss of Containment Barrier

1. EC upgrades event classification to a GENERAL EMERGENCY due to Loses of RCS and FUEL CLAD Barriers AND a Potential Loss of the Containment Barrier.
2. The STA verifies the Emergency Plan Classification, determines reportability and communicates the results to the SS/EC.
3. EC/SS directs completion of the NAN Emergency Message form and notificaton of reclassifications commence
4. EC calls for SITE EVACUATION.
5. EC/SS implements EPIP-03 and makes Protective Action Recommendations (PARS) of EVACUATION for a 5 mile radius and 10 miles in potentially affected sectors.

The scenario will terminate when the plant is in a stable condition and all notifications for the Emergency Plan have been made or have been initiated.

EVENT	TIME	SYNTAX	DESCRIPTION	MISC.
1	T = 1	IMF TH01C ..009	RCS Leak at .approx. 65 GPM	
2	T=25 (Approx. time) when leak rate is determined, ALERT is classified, and NAN notifications are completed.	MMF TH01C 10 5:00	Large LOCA causing a loss of subcooling. Ramped in over 5 minutes. The Reactor trips, a SIAS/CIAS ,and possible CSAS are acuated.	When CSAS actuates, the crew may request that an AO try to manually open valve 672. The intent is to give the crew back valve 672, but only after RP has given the OK to enter the AUX. Bldg. AND after PBB-S04 has been lost. See event #4. and the next page for instructions to manually open the valve.
3	After Alert Notifications are completed.	activate: CAE ! RMSAFUELFAIL	The CAE will make RU-148,149,150, and 151 trend appropriately	
	When Requested	mrf ED72 override_CLS mrf ED74 override_CLS mrf ED76 override_CLS	Re-Energizes SIAS Load Shed MCCs on the 'A' Train	
	When Requested	mrf ch05 acknowledge mrf ch06 acknowledge	Reset H_2 Analyzer "A" Alarm Reset H_2 Analyzer "B" Alarm	

4.	T=50(Approx. time) After SAE notifications are made. (containment press. has to be >8.5psig when this malfunction is put in.)	IMF ED11C	Normal Supply breaker to PBB- S04 trips on a 86 L/O	If asked to investigate or to try to reset the 86 L/O,report that the relay will not reset If Elec. Maint. is asked to investigate, advise the control room that there is a faulty 86 L/O relay and that it will take about 45 minutes to replace.
	When requested to manually open CS valve 672, wait about 10 min., THEN	DMF MV06:SIAUV672 (malfunction was entered in Sim. setup) mrf mv09:siauv672	When this malfunction is deleted, the valve can be manually opened, OR, opened from the control room. Call up RFS to report when valve is full open. When this remote function is entered, the valve is manually opened.	Wait until the Aux. Operator is at the valve, locally, to delete this malfunction. (if the control room H.S. is taken to open after this malfunction is deleted, the valve will open.)