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ACRS (16)

Docket Nos.: 50-483
and 50-486

Mr. John K. Bryan
Vice President - Nuclear
Union Electric Company
Post Office Box 149
St. Louis, MO 63166

Dear Mr. Bryan:

Subject: Request for Additional Information for the Review of the Callaway Plant, Unit 1, Regarding the Emergency Response Plan

We have completed our review of your Emergency Plan submittal dated May 15, 1981, for the Callaway Nuclear Power Plant. Your plan was reviewed against the criteria stated in NUREG-0654, the requirements of 10 CFR 50.47(b) and Appendix E.

Our review indicated that additional information and commitments are required before we can conclude that your onsite emergency preparedness program is adequate.

Enclosed are our comments for which resolution is necessary. Please revise you emergency plan in accordance with our comments.

To maintain our licensing review schedule for the Callaway Plant FSAR, we will need responses to the enclosed request by July 15, 1981. If you cannot meet this date, please inform us within seven days after receipt of this letter of the date you plan to submit your responses so that we may review our schedule for any necessary changes.

Please contact Dr. G. E. Edison, Callaway Licensing Project Manager, if you desire any discussion or clarification of the enclosed request.

Sincerely,

/s/

Robert L. Tedesco, Assistant Director
for Licensing
Division of Licensing

Enclosure:
As stated

cc: See next page

OFFICE			DL:LB#1	DL:LB#1	DL:AD/L		
SURNAME			GEdison/ys	BJYoungblood	RLTedesco		
DATE			6/25/81	6/ /81	6/ /81		

NRC FORM 318 (10-80) NRCM 0240 OFFICIAL RECORD COPY USGPO 1980—329-824

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810.0C EMERGENCY PREPAREDNESS LICENSING BRANCH

810.1C Comments on the Callaway Nuclear Plant Emergency Plan

The following staff comments follow the format of NUREG-0654:

A. Assignment of Responsibility (Organizational Control)

- The Plan does not include written agreements with state and local agencies which would provide assistance during an emergency. Specifically agreements are needed with: (1) Missouri Disaster Planning and Operations Office; (2) Callaway, Osage, Gasconade and Montgomery Counties; and (3) Missouri State Highway Patrol Headquarters in Jefferson City.

- Because two major railroads traverse the 10 mile EPZ, we recommend letters of agreement be established with these railroads (Missouri-Kansas-Texas R.R. and Missouri Pacific R.R.) to ensure the railroad dispatcher is informed of major emergencies and thus can control rail traffic.

- The existing letter of agreement with Callaway Memorial Hospital is unacceptable. This agreement does not clearly indicate that the hospital will accept radiological injuries. The agreement must specify the emergency measures to be provided (i.e., special services such as decontamination and medical treatment of radiation exposure and uptake).

B. Onsite Emergency Organization

- The Plan does not provide for the "Minimum Shift Staffing for Plant Emergencies" as per Table B-1 of the criteria. The minimum capabilities available within 30 minutes following the declaration of an emergency are not indicated in the Plan and those capabilities available within 60 minutes do not meet the criteria of Table B-1. Specifically, six additional personnel are needed in the following functional areas: three notification/communication (one within 30 minutes); two Rad/Chem Technicians for radiological accident assessment; and one additional person for repair and corrective actions (i.e., I & C Technician).

- Table 5.1 of the Plan does not clearly indicate position titles or expertise of the plant system engineers. Expertise, as a minimum, in core/thermal hydraulics, electrical engineering and mechanical engineering should be indicated. Further, Table 5.1 does not address the Shift Technical Advisor as a position title.

- The Plan does not adequately define the responsibilities and tasks of the Emergency Control Center Supervisor.

- The Plan does not clearly indicate that the Emergency Plant Operations Manager (EPOM) is a function which is maintained onsite at all times. Can the Operating Supervisor act as the EPOM until relieved by the Emergency Duty Office? This needs to be clarified.

- The Plan does not list the minimum qualifications and selection criteria of EPOMs or Emergency Duty Officers (acting EPOM).

- The Plan does not indicate when the Corporate Headquarters Organization (Recovery Organization) will be activated (i.e., any Site Area or General Emergency).

C. Emergency Response Support and Resources

- The Plan does not specify expected arrival times of the DOE assistance and where they are expected to report.

- The Plan indicates that back-up laboratory facilities will be available in the EOF, however, it is not clear what these capabilities are. The Plan should specify this capability (portable MCA gamma spectroscopy, primary coolant chemistry capability, and other sample counting equipment as necessary for particulate, gas and radioiodine samples).

- The Plan does not identify other nuclear facilities (i.e., Wolf Creek Plant) which can be relied upon in an emergency to provide assistance.

D. Emergency Classification System

- Table 4.1, 4.2, 4.3 and 4.4 of the Plan needs considerable improvement. Several accident conditions do not indicate specific instrument readings or rate of change of readings which would be used to classify an emergency (i.e., status of containment pressure, temperature, radiation levels, hydrogen levels, isolation and cooling capability; status of ECC systems; status of major electrical systems; etc.). When at all possible, actual reliable and observable instrument readings should be listed for each emergency condition, both in the Plan and Implementing Procedures.

- Specific areas which need improvement for an Unusual Event, Alert, Site Area and General Emergency are as follows:

  UNUSUAL EVENT

  - For a fuel degradation emergency, indicate the reading on the failed fuel monitor which corresponds to a .1% failure.

- List indicator readings or alarms showing a toxic release (smoke, chlorine, ammonia, etc.) has occurred within the exclusion area.

- List the Emergency Action Levels (EALs) for a rapid depressurization of the PWR secondary side and include this event in Table 4.1.

ALERT EMERGENCIES

- For a severe failure of fuel cladding, indicate primary coolant sample results and reading on the failed fuel monitor.

- List steam generator (S/G) blowdown monitor reading for a S/G tube failure and list air ejector vent readings corresponding to a S/G tube failure.

- List the EALs for a 10 GPM primary to secondary leak with a major steam line break (secondary side). Include MSIV failure as an EAL.

- List containment activity (air or gas sample result) for a 50 GPM primary coolant leak in containment and list means for determining how the operator knows he has a leak rate greater than 50 GPM (i.e., charging/letdown mismatch, sump level alarms, etc.).

- List those Area Radiation Monitors (ARMs) and their readings which would indicate a severe degradation in the control of radioactive materials (1000 times normal ARM reading).

- List EALs which the operator would use to identify a loss of vital onsite DC power (indicate these EALs for a Site Area Emergency also).

- List primary coolant sample result indicating fuel failure from a loss of flow accident.

- List EALs for a spent fuel handling accident (i.e. ARM reading, CAM reading and effluent monitor reading).

- List effluent monitor reading(s) indicating effluents exceeding 10 times T/S.

- List EAL reading indicating the plant has experienced an Operating Basis Earthquake.

- List EAL used to determine when the Control Room should be evacuated.

SITE AREA EMERGENCIES

- List EALs indicating to the operator that he has a LOCA greater than charging pump capacity.

- List subcooling meter reading indicating abnormal primary coolant temperature leading to failed fuel.

- List core thermocouple reading indicating a possible degraded core cooling capability and list primary coolant sample results for massive fuel failure.

- List EALs for gross failure of S/G tubes with loss of offsite power.

- List S/G level activity for a 50 GPM primary to secondary leak with significant fuel damage in conjunction with a major steam line break accident.

- List radiation EALs indicating major damage to spent fuel in containment or fuel building (i.e., ARM reading, spent fuel pool sample results, station vent effluent reading, etc.).

- List effluent monitor readings corresponding to dose rates specified in Appendix 1 of NUREG-0654 for a Site Area Emergency.

- List EAL reading indicating the plant has experienced an earthquake greater than SSE and list EALs for winds in excess of design winds.

GENERAL EMERGENCIES

- List effluent monitor readings corresponding to dose rates of 1 rem/hr W.B. or 5 rems/hr thyroid at site boundary.

- List EALs indicating to the operator a loss of 2 of 3 fission product barriers with a potential loss of 3rd barrier (i.e., high containment radiation level, pressure, temperature, hydrogen and loss of containment cooling and pressure suppression systems or likely failure of containment isolation systems.)

E. Notification Methods and Procedures

- The Plan does not clearly indicate that the contents of the initial emergency message to offsite authorities will include: classification of the emergency; whether a release is taking place; potentially affected population; and whether protective measures may be necessary.

- The Plan does not indicate that a prompt Alerting and Notification System meeting the design objectives of Appendix 3 of the criteria will be developed. The Plan should address the administrative and physical means, and the time required to promptly notify the public of an emergency. The Plan should commit to the establishment of such a system and indicate when the system will be operational. It is the licensee's responsibility to ensure that such means exist, regardless of who implements this requirement.

F. Emergency Communications

- The Plan does not clearly indicate the primary and backup means of communication to continguous local governments.

- When the NRC Emergency Notification System and Health Physics Network telephones are installed at Callaway, the Plan should be revised to reflect this.

- The backup microwave radio system should also be provided to the TSC and EOF.

- The Plan does not indicate what communication provisions there are for alerting or activating shift augmentative personnel, both site and corporate (i.e., duty officer system, pager system, phone trees).

G. Public Education and Information

- The public education and information program described in the Plan does not include the complete range of protective actions nor does it contain provisions for the handicapped. In addition, there are no apparent indications of how dissemination of information will occur for the permanent or transient populations.

- Provide a sample copy of the public education and information pamphlet to the NRC and FEMA for review prior to dissemination.

- The Plan does not clearly designate the points of contact and physical locations for use by news media during an emergency.

- The Plan does not indicate that space will be provided for a limited number of news media personnel at the EOF.

H. Emergency Facilities and Equipment

- General descriptions of the TSC, OSC and EOF are provided in the Plan, however, please provide floor diagrams (as built) of these facilities in the plan.

- Section 7.3.1.1.4 of the Plan does not clearly describe offsite meteorological capability. Locations of these capabilities should be listed in the Plan.

- The Plan does not list critical radiological monitors (e.g., process, area and effluent) which would be used to initiate emergency measures.

- Section 7.3.2 (Facilities and Equipment for Off-Site Monitoring) of the Plan does not adequately describe types of emergency equipment. Further, it is not clear how and where environmental samples will be taken and analyzed.

- The Plan does not describe offsite radiological monitors including sampling devices and locations of fixed environmental monitoring stations. Offsite dosimetry shall be provided and shall meet, as a minimum, the NRC Radiological Assessment Branch Technical Position for the Environmental Radiological Monitoring Program.

- The Plan does not provide meteorological instrumentation and procedures which satisfy the criteria in Appendix 2 of NUREG-0654.

- Appendix E (Equipment list) of the plan is too general. This section should be expanded to include; range and type of portable radiological instrumentation use in kits, quantity of instrument should be listed, and types of portable communications equipment should be listed.

I. Accident Assessment

- The Plan does not describe the capability and resources of the post-accident sampling and analysis systems including: primary coolant sampling; containment air sampling; station effluent sampling; and in-plant radioiodine sampling under accident conditions. FSAR reference of these systems is not acceptable.

- The Plan does not provide a plot or graph of the relationship between the containment radiation monitor reading and radioactive material available in containment. This relationship should also include the percent core inventory.

- The Plan does not adequately describe field monitoring team composition equipment or estimated deployment times. The teams must be capable of assessing any radiological hazard through liquid or gaseous release pathways.

- The Plan, when revised to meet the criteria of Appendix 2, should indicate what meteorological data will be available to the Technical Support Center, Control Room, near-site Emergency Operations Facility and the NRC.

- The Plan needs clarification as to the means to be used to assess the 50 mile Emergency Planning Zone. The Plan should indicate what parameters for this pathway will be monitored. Further, the Plan should establish the HHS/FDA "Protective Action Guides" for converting measured parameters to integrated doses. Procedures should be developed to assess this pathway.

- The Plan does not clearly establish methods and techniques to be used to determine the magnitude of a release of radioactive materials based on plant effluent monitors. And the Plan does not establish the relationship between effluent monitor readings and onsite and offsite exposures and contamination for various meteorological conditions.

- The Plan does not adequately describe the equipment use to detect radioiodine concentration as low as 1×10^{-7} uCi/cc under field conditions.

J. Protective Response

- The Plan does not describe how individuals within the Exclusion Area but outside the site boundary will be notified of an emergency (i.e., Reform Wildlife Management Area).

- Section 6.4.1.1 states that a site assemble/evacuation may be implemented in the event of a Site Area or General Emergency. In our view, this shall be implemented for any Site Area or General Emergency.

- Section 6.4.2.3 (Radioprotective Drugs) should specify action levels (NCRP #55 recommendations) for administring KI drugs to licensee emergency workers.

- Appendix I of the Plan does not provide maps indicating evacuation routes and alternates from the site to the EOF. Further, maps of radiological sampling and monitoring points are not included in the Plan.

. The Plan does not include local protection factors afforded in residential units for direct and inhalation exposure.

K. Radiological Exposure Control

. The Plan does not identify by title or position who can authorize emergency workers to receive doses in excess of 10 CFR Part 20 limits.

. The Plan does not indicate specific action levels for determining the need for decontamination.

L. Medical and Public Health Support

This section of the Plan is adequate.

M. Recovery and Reentry Planning and Post-Accident Operations

This section of the Plan is adequate.

N. Exercises and Drills

. The Plan does not indicate communications tests with Federal emergency response organizations shall be tested quarterly.

. The Plan does not meet the requirements of 10 CFR 50, Appendix E, Section F, relevant to full-scale and small-scale exercises.

O. Radiological Emergency Response Training

. The training program described in Section 8.1.1.1 for the following functions is weak in the following areas:

- personnel responsible for transmission of emergency information and instructions.

- personnel responsible for accident assessment.

- RCT training regarding post-accident sampling and analysis and inplant radiological surveys.

- personnel responsible for the planning effort.

P. Responsibility for the Planning Effort: Development, Periodic Review, and Distribution of Emergency Plans

- It is not clear in the Plan that approved changes to the Plans will be forwarded to all organizations and appropriate individuals with responsibility for implementation. Revised pages shall be dated and marked to show where changes have been made.

- The Plan does not meet the requirements of 10 CFR 50.54(t) regarding annual independent audits of the emergency preparedness program.

- The following procedures should be added to Appendix F of the Plan as part of implementation:

  - Collection of Post Accident Samples

  - Analysis of Post Accident Samples (including chemistry procedures)

  - On Site Radiation Surveys During Emergencies

  - Plant Staff Augmentation (activating TSC and EOF)

  - Emergency Equipment Inventory (decon facility, hospital, monitoring kits, etc.)

  - Determination of Potential Offsite Doses Based on Activity in Containment

  - "Class A Meteorology/Dose Calculation" Operations

  - Procedures #5 and #12 of Appendix F should be combined into one procedure (Onsite Protective Actions)

  - Procedure #23 of Appendix F (Emergency Training) should include verification of adequate training, such as walk-throughs