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CALLAWAY PLANT
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FULTON, MO 65251

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A	CNOT	01-005 RERP			C	1			RERP

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DATE:

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RERP CN# 01-005
RERP Rev.# 024

CALLAWAY PLANT
RERP
CHANGE FORM

1. Originator: G. R. Pendergraff Date: 10/17/01

2. Plan section(s): 1.2, 6.5.2.1, 6.5.4, 7.3.1.8, 8.2.4 and Table 5-1

3. References: ULNRC-04371, OL CN 1214, TS Bases CN 00-0033, FSAR CN 00-054, License Amendment No. 144, and NRC Letter to G. L. Randolph dated 4/06/01

4. Is this change evaluated under an existing Licensing Impact Review (LIR) (**APA-ZZ-00140**)? ☒Yes ☐ No
   If "yes" attach a copy of the LIR or provide reference (CMP, RFR, etc.) OL CN 1214
   If "no", a LIR should be performed and attached or provide sufficient information for completion of the LIR by the responsible department (not required for hidden text only change).

5. Description of Change: See RERP CN 01-005 Description (attached)

6. Justification: See RERP CN 01-005 Description (attached)
   (attach extra pages as necessary)

7. Originating Department Head Approval [signature]

8. Concurrence with Need for Change

   Approved X Rejected _____ Revision No. _____

[signature] 11-2-01
Superintendent, Protective Services

Attachment to: CA0667C, RERP Change Form
CA1523, Emergency Preparedness Evaluation of Changes
CA1524, RERP Evaluation Form
CA2484, RERP Revision Notification/Attestation Form

RERP CN 01-005 Description

AmerenUE letter (ULNRC-04371 dated January 18, 2001) transmitted an application for a license amendment concerning Post Accident Sampling System (PASS) elimination to the NRC.

The NRC responded with a letter dated April 6, 2001. Amendment No. 144 was issued to the Operating License. The NRC letter stated "The amendment deletes TS Section 5.5.3, "Post Accident Sampling," for the Callaway Plant and thereby eliminates the requirements to have and maintain the post-accident sampling system (PASS)."

Licensing completed a single Callaway Plant Primary Licensing Document Change Form for OL CN 1214, TS Bases CN 00-033 and FSAR CN 00-054. The purpose was to process these Changes Notices together and maintain fidelity between these documents. This Change Notice (CN 01-005) eliminates the PASS from the RERP to bring it into alignment with the Technical Specifications and FSAR.

RERP Section 7.3.1.8, which describes the PASS, is being eliminated. References to the PASS are also being eliminated from Sections 1.2, 6.5.2.1, 6.5.4, 8.2.4, and Table 5-1.

PASS elimination is not a decrease in emergency preparedness effectiveness based on the following.

All emergency planning decisions and recommendations at Callaway Plant during the first few hours of an event are made without reliance on PASS. The declaration of Emergency Action Levels, the formulation of Protective Action Recommendations, Offsite Dose Projections and Core Damage Assessment are based on established procedures. These procedures consider the loss / potential loss of fission product barriers, measured plant parameters, measured radiation releases, and offsite field monitoring. The input to these activities is from plant instrumentation and field monitoring and not PASS sampling. The methodology used at the Callaway plant is:

- Protective Action Recommendations are evaluated using plant parameters, effluent monitoring, field monitoring teams and dose projections. Plant procedure EIP-ZZ-00212 implements this process and does not require use of the PASS to evaluate these conditions. The source documents used to develop this program at Callaway Plant are: EPA-400-R-92-001, Manual of Protective Action Guides and Protective Actions for Nuclear Incidents and NUREG 0654/FEMA-REP-1, Criteria for Preparation of and Evaluation for Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants.

- Offsite Dose Projections are made using plant procedure EIP-ZZ-01211 and does not require use of the PASS to evaluate offsite dose. Effluent radiation monitors, plant

parameters, field monitoring teams and software calculations are used to make dose projections.

- Emergency Action Levels are evaluated under the following conditions: abnormal radiation events, loss of fission product barriers, hazards affecting plant safety and system malfunctions. Effluent radiation monitors, plant parameters, field monitoring teams and software calculations using plant procedure EIP-ZZ-00101 implements this process and does not require use of the PASS to evaluate these conditions. The source documents used to develop this program at Callaway Plant are: NUREG-0818, Emergency Action Levels for Light Water Reactors, NESP-0007, Methodology for Development of Emergency Action Levels and Reg. Guide 1.101, Emergency Planning and Preparedness for Nuclear Power Reactors.

- Core Damage Assessment is calculated using plant procedure EDP-ZZ-00005 based on Topical Report WCAP-14696, "Westinghouse Owners Group Core Damage Assessment Guidance". This revised methodology uses a calculational technique for estimating core damage using real-time plant indications rather then samples of plant fluids by the PASS.

The PASS does not play a role in formulating emergency planning decisions based on the following:

- PASS samples may not be available in a timely manner.

- PASS samples may divert resources from other important emergency response activities, especially early in an event.

- PASS samples, although designed to minimize radiation exposures to plant personnel, could result in significant radiation exposures compared to monitoring plant instrumentation in the Control Room.

- After the initial PASS sample is taken, personnel access to certain portions of the plant auxiliary building may be limited or restricted, potentially hampering the implementation of certain recovery / mitigation activities.

The elimination of PASS has been discussed with the State and local emergency response organizations that interface with the Callaway Plant. As a result of those discussions, we have not identified any situations where the elimination of PASS would degrade the effectiveness of the Callaway Plant emergency response.

Procedures have been developed for obtaining and analyzing highly radioactive samples of reactor coolant, containment sump and containment atmosphere during the plant recovery phase, classifying fuel damage events at the Alert level and monitoring

radioactive iodines that have been released to offsite environs. These capabilities are provided without the use of PASS.

The three regulatory commitments discussed in the AmerenUE letter (ULNRC-04371) and NRC Amendment 144 dated April 6, 2001 are being implemented in conjunction with this Change Notice.

OSC	-	Operations Support Coordinator
PAC	-	Plant Assessment Coordinator
PAG	-	Protective Action Guide
~~PASS~~	-	~~Post-Accident Sampling System~~
PCS	-	Plant Computer System
PMC	-	Protective Measures Coordinator
PMCL	-	Protective Measures Counterpoint Link
QA	-	Quality Assurance
RCA	-	Radiological Controlled Area
RCP	-	Reactor Coolant Pump
RCS	-	Reactor Coolant System
RERP	-	Radiological Emergency Response Plan
RSCL	-	Reactor Safety Counterpoint Link
RWP	-	Radiation Work Permit
SAMG	-	Severe Accident Management Guidelines
SEMA	-	State Emergency Management Agency (Missouri)
SPDS	-	Safety Parameter Display System
SMD	-	Secondary Monitoring Device
STA	-	Shift Technical Advisor
TAC	-	Technical Assessment Coordinator
TEDE	-	Total Effective Dose Equivalent
TLD	-	Thermoluminescent Dosimeter
TSC	-	Technical Support Center
USCG	-	United States Coast Guard

CN 01-005

The atmospheric stability class is based upon the present weather conditions and inputs from the Meteorological Instrumentation System (RD). Using the stability class, the correct atmospheric dispersion factors can be used to approximate air concentrations at various off-site locations. USNRC Regulatory Guide 1.145 has been used as guidance.

CN 01-005

The amount of radioactivity being released, or having the potential to be released, can generally be determined utilizing the Radiation Monitoring System ~~or the Post Accident Sampling System (PASS)~~. The Radiation Monitoring System has the capability of determining the amount of radioactivity in the effluent and in various systems or areas of the plant, including inside of containment. In addition, isotopic analysis can be performed ~~using the PASS~~ to determine the specific isotopic makeup of the RCS, containment atmosphere, and sump. Dose projections can be performed using Effluent or Process Radiation Monitor readings or isotopic analysis data. Emphasis can be placed on specific isotopes of concern. These isotopes include the isotopes specified in NUREG-0654, Rev 1.

Using the above information, Health Physics personnel can perform dose projections for situations involving an actual release of radioactive materials.

Field Monitoring Teams are utilized to track and quantify plume dose rates. Field Monitoring Teams are equipped with radios, cellular phones, and Geographical Positioning Units. Field Monitoring Teams are also equipped with radiation monitoring instruments to evaluate actual off-site dose rates and airborne radioactivity concentrations. **(COMN 42536)**

Data is reported by Field Monitoring Teams via radio to the EOF. Samples collected are returned to the EOF, or other locations designated by the Dose Assessment Coordinator, for further analysis as necessary.

Field monitoring activities continue throughout the duration of the incident (as required) so that the need for protective measures can be quickly assessed.

6.5.2.2 Long Term Assessment

Long term assessment of contaminated soil, vegetation, milk, and water is accomplished in accordance with EPA-400, Manual of Protective Action Guides and Protective Actions for Nuclear Incidents.

6.5.3 IN-PLANT RADIOLOGICAL CONTROLS

During the course of an emergency, normal Health Physics procedures shall be followed with the understanding that higher than normal radiation and/or contamination levels may be experienced. Deployment of Search and Rescue Teams, Emergency Repair Teams, Fire Brigade Teams, and Medical Emergency Response Teams under emergency conditions may require continued monitoring of in-plant radiation levels for the protection of on-site personnel.

In an emergency, priority is given to supporting efficient accident mitigation.

The Rad/Chem Technician, Health Physics has the initial responsibility for in-plant radiological controls. Upon activation of the TSC, the Health Physics Coordinator has responsibility for in-plant radiological controls and provides direction to Health Physics personnel. Initial in-plant radiological controls may be based on Control Room instrumentation readings, Radiation Monitoring System (RMS) readings, and system status reports. Additional information concerning in-plant radiological conditions may be gained during the debriefing of emergency teams.

6.5.4 REACTOR AND CORE DAMAGE ASSESSMENT (COMN 42534)

Assessment concerning the status of the reactor core is performed by the Shift Supervisor with the assistance of a Shift Technical Advisor (STA) qualified Operating Supervisor or Engineer. Initial assessment of core conditions is based on readings from Control Room instrumentation and assessment of SPDS data. Data which is assessed to determine core damage include:

- o Radiation Monitoring System readings;
- o Nuclear plant instrumentation readings;
- o ~~Post-Accident Sampling System results.~~ CN 01-005

Continued assessment of core conditions is performed under the direction of the TAC when engineers arrive at the TSC.

6.6 CORRECTIVE ACTIONS

Plant procedures contain steps for preventive and/or corrective actions to avoid or mitigate serious consequences of an emergency. Instrumentation and control systems provide indications, recordings, and control of systems necessary for the safe operation of the Plant.

7.3.1.5 Personnel Survey Instrumentation

Personnel survey instrumentation consists of G-M count rate meters (contamination friskers), portal monitors, and a whole body counting system. Portable count rate meters (friskers) are available at checkpoints and other areas that can be used to determine the presence and location of contamination. Portal monitors are available at the normal exits from the RCA. The whole body counting system is readily available to quickly supply information concerning internal contamination levels.

7.3.1.6 Control Room Instrumentation

Information necessary to monitor the nuclear steam supply system (NSSS), the containment system, and the Balance of Plant (BOP)is displayed on the operator's console and the various vertical boards located within the Control Room. Hot shutdown information is also displayed on the auxiliary shutdown control panel outside the Control Room. These indications include the information to control and operate the unit through all operating conditions, including anticipated operating occurrences, and accident and post-accident conditions.

7.3.1.7 Analysis Capabilities

Laboratory facilities include the Hot Chemistry Laboratory and Counting Room adjacent to the HP Office, the Radwaste Lab, and a Cold Chemistry Laboratory in the Turbine Building. These facilities are designed to handle all chemical and radiological sampling and analysis during all normal modes of operation.

External laboratory services have also been retained for analysis of high activity and environmental samples. If utilized, the EOF would operate as a central collection point for the receipt and analysis of field monitoring data and environmental sampling media.

7.3.1.8 *DELETED per Rev. 024 CN 01-005.* ~~Post-Accident Sampling System (PASS)~~

CN 01-005

~~The post-accident sampling system is an in-line system designed to analyze the reactor coolant, containment sump, and containment atmosphere under both normal and post-accident conditions.~~

~~The analyses performed are described in the FSAR.~~

~~As necessary, manual diluted and undiluted grab samples are taken. The undiluted grab sample will be transported in a shielded cask to a backup lab for analysis.~~

~~The PASS is powered by a non-1E service bus. In case of loss of power during emergencies the system can be manually transferred to a safeguard (1E) bus, if necessary.~~

Drill and exercise scenarios are written to allow a certain amount of free play and decision making. Controllers are instructed at pre-drill or exercise briefings as to which portions of the scenario permit free play and which portions require control. One person is assigned as the Lead Controller and is responsible for overall drill or exercise control. The drill or exercise controllers should possess the necessary technical expertise to adequately control their respective functional areas. All drills and exercises are conducted and documented in accordance with the implementing procedure for drills and exercises.

Evaluators from the NRC and FEMA will be invited to evaluate and critique the exercises. A critique is scheduled at the conclusion of the exercise to evaluate the ability of organizations to respond as called for in the RERP. Formal evaluations are based on these critiques, including incorporation of participants' comments. Weak areas are noted, and corrective actions, including RERP and procedural changes and/or remedials, are initiated by the Superintendent, Protective Services, or his designee.

8.2.1 COMMUNICATIONS DRILLS

Communications with Federal, State and local governments will be tested monthly. Once a quarter, this will be done transmitting a simulated emergency notification to ensure the content of the message is understood. Field monitoring team communications are tested annually from the EOF and Backup EOF. These tests are done from different sectors in the field in accordance with the Plant's surveillance program and also include the aspect of understanding message content.

8.2.2 MEDICAL EMERGENCY DRILL

A medical emergency drill involving a simulated contaminated individual, and providing for periodic participation by the local support service agencies (i.e., ambulance and off-site medical treatment facility) is conducted annually. The medical drill may be performed as part of the biennial exercise.

8.2.3 RADIOLOGICAL MONITORING DRILLS

Plant environs and radiological monitoring drills (on and off-site) are conducted annually. These drills include collection and analysis of all sample media (e.g., water, vegetation, soil, and air) and provisions for communications and record keeping. Guidance is provided in the Plant's surveillance program.

CN 01-005

8.2.4 HEALTH PHYSICS DRILLS

Health Physics related drills which involve response to, and analysis of simulated elevated airborne and liquid samples and direct radiation measurements in the environment are conducted semi-annually. ~~Analysis of inplant liquid samples with actual elevated radiation levels including use of the Post Accident Sampling System shall be included annually.~~

8.2.5 FIRE DRILLS

Fire drills are conducted in accordance with the Fire Protection Program.

TABLE 5-1
EMERGENCY STAFFING REQUIREMENTS
ON-SHIFT EMERGENCY RESPONSE +

EMERGENCY POSITION	MIN. #	FUNCTION	MAJOR TASKS	RESPONSE LEVEL	RESPONSE GOAL	LOCATION
Shift Supervisor (*Acting Emergency Coordinator*)	1	Initial Emergency Management	Initial Direction and Control of Plant Operations, Accident Assessment, Protective Action Decision Making, and Requesting Support	UNUSUAL EVENT	Immediate (on-shift)	CR
Operating Supervisor	2	Supervision, Assessment	Supervises Control Room Operators, Technical Support and Assessment, Fire Brigade Leader, and Monitors SPDS	UNUSUAL EVENT	Immediate (on-shift)	CR
Reactor Operators	2	Plant Operations	Plant Operations and Accident Assessment	UNUSUAL EVENT	Immediate (on-shift)	CR
Equipment Operators (EO) and Assistant Equipment Operators (AEO)	4	Plant Operations	Auxiliary Plant Operations, Off-site Notification/Communications coordination, and Emergency Team Members As Required	UNUSUAL EVENT	Immediate (on-shift)	Plant Areas
Rad/Chem Technician	1	Health Physics Operations	Perform Surveys, Sampling, Monitoring, Analysis, Job Coverage, Emergency Team Support	UNUSUAL EVENT	Immediate (on-shift)	Plant Areas
Rad/Chem Technician	1	Health Physics Tech Support	Evaluate effluent monitors and perform off-site dose projections	UNUSUAL EVENT	Immediate (on-shift)	CR or Plant Areas
Rad/Chem Technician	1	Chemistry	Chemistry Sampling, *and* Radiochemical Analysis~~, and PASS Operations~~	UNUSUAL EVENT	Immediate (on-shift)	Plant Areas
I&C Technician	2	Repair & Corrective Actions	Emergency Repair, Off-site Notification/Communications Coordination, and Emergency Teams As Required	UNUSUAL EVENT	Immediate (on-shift)	Plant Areas

CN 01-005