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R	PROC	EIP-ZZ-A0020	020	019	C	1	
R	PROC	EIP-ZZ-00213	020	019	C	1	
R	PROC	EIP-ZZ-00240	029	028	C	1	

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AD45

CALLAWAY PLANT
EMERGENCY PLAN IMPLEMENTING PROCEDURE
EIP-ZZ-A0020
MAINTAINING EMERGENCY PREPAREDNESS

RESPONSIBLE DEPARTMENT Emergency Preparedness

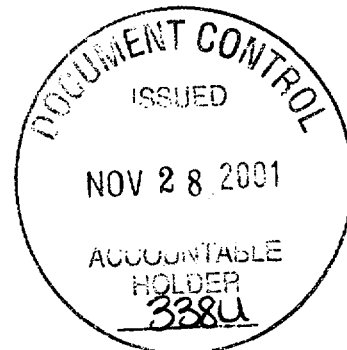
PROCEDURE OWNER G. R. Pendergraff

WRITTEN BY G. R. Pendergraff

PREPARED BY G. R. Pendergraff

APPROVED BY Wanda A. With

DATE ISSUED 11-28-01



This procedure contains the following:

Pages	<u>1</u>	through	<u>11</u>
Attachments	<u>1</u>	through	<u>6</u>
Tables	<u> </u>	through	<u> </u>
Figures	<u> </u>	through	<u> </u>
Appendices	<u> </u>	through	<u> </u>
Checkoff Lists	<u> </u>	through	<u> </u>

This procedure has checkoff list(s) maintained in the mainframe computer.

Conversion of commitments to TRS reference/hidden text completed by Revision Number:

Non-T/S Commitments 018

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MAINTAINING EMERGENCY PREPAREDNESS

1 PURPOSE AND SCOPE

This procedure provides guidance for the review and maintenance of the Emergency Preparedness Program. This should include:

- Annual review of the Radiological Emergency Response Plan (RERP);
- Annual review of the Emergency Implementing Procedures;
- Oversight of the RERP Training Program; and
- An independent annual review of the Emergency Preparedness Program.

2 RESPONSIBILITIES

2.1 NUCLEAR SAFETY REVIEW BOARD (NSRB) (COMN 2681)

The Nuclear Safety Review Board is responsible for providing an independent annual review of the Radiological Emergency Preparedness Program.

2.2 SUPERINTENDENT, PROTECTIVE SERVICES

2.2.1 The Superintendent, Protective Services is responsible for ensuring an effective integrated program is maintained to provide for protection of the health and safety of the public in the event of a radiological emergency at the Callaway Plant. These responsibilities include:

2.2.1.1 Identification of candidates to become Emergency Response Personnel.

2.2.1.2 Notifying the Training Department of changes to the Emergency Response Organization (ERO), procedures, or equipment that effect RERP training activities.

2.2.1.3 Approval of RERP training objectives and review of substantial content changes to RERP training material.

2.2.1.4 Approval of changes to the RERP Training Program.

2.2.1.5 Development and conduct of Drills and Exercises.

2.3 EMERGENCY PREPAREDNESS (EP)

Emergency Preparedness (EP) is responsible for identifying the Emergency Response Organization and for maintaining the Radiological Emergency Response Plan, Emergency Implementing Procedures, and Emergency Response Facilities for use by the Callaway Plant staff in responding to a radiological emergency. EP is also responsible for supporting State and Local government agencies with technical and training assistance to ensure their plans, procedures, facilities and personnel are prepared for response to a radiological emergency at the Callaway Plant.

2.4 TRAINING DEPARTMENT

The Training Department is responsible for preparation and conduct of periodic training as identified in **EIP-ZZ-A0066**, RERP Training Program, including assisting in the development of radiological emergency response drills.

2.4.1 SUPERINTENDENT, TRAINING

The Superintendent, Training is responsible for the overall administration of the RERP Training Program, as delineated in **EIP-ZZ-A0066**.

3 PROCEDURE

3.1 ANNUAL REVIEW (COMN 2681)

3.1.1 An independent review of the Emergency Preparedness Program SHALL be performed at least once every twelve (12) months under the direction and cognizance of the Nuclear Safety Review Board. Each review SHALL include an evaluation for adequacy of interfaces with State and local governments and of plant emergency drills, exercises, capabilities, and procedures.

3.1.2 Open findings identified SHALL be reviewed, investigated, and resolved in accordance with **APA-ZZ-00500**, Corrective Action Program.

3.1.3 Any portion of the review involving an evaluation for the adequacy of interfaces with State and local governments SHALL be made available to the affected governmental agency.

- 3.1.4 The results of the review of the Emergency Preparedness Program, along with recommendations for improvement, SHALL be documented and reported to Plant and company management, and retained for a period of 5 years.

3.2 RADIOLOGICAL EMERGENCY RESPONSE PLAN (RERP)
AND EMERGENCY IMPLEMENTING PROCEDURES (EIP)S
MODIFICATIONS

CAUTION: No actions associated with a change to the RERP will be implemented until after ORC has approved the change notice or revision.
CARS 200105886

- 3.2.1 The RERP and the letters of agreement/purchase orders listed in the RERP SHALL be reviewed annually and periodically updated as needed. (COMN 3924)
- 3.2.1.1 If the RERP is not revised as a result of the annual review, the review should be documented by placing a letter into the EP RERP file stating that the RERP was reviewed and no changes were needed.
- 3.2.1.2 The annual review of the Letters of Agreement/Purchase Orders should be documented by placing a letter in the EP RERP Letters of Agreement file. This letter should describe either how each letter was verified current or that the letter was updated as a result of the review.
- 3.2.1.3 All revisions and change notices to the RERP are prepared, reviewed, and processed in accordance with **KDP-ZZ-00400**, Emergency Preparedness 10CFR50.54(q) Evaluations, and **KDP-ZZ-00410**, Radiological Emergency Response Plan (RERP) Change Notice/Revision Process.
- 3.2.1.4 All changes to the RERP SHALL be made available to the State and appropriate local government emergency response agencies. (COMN 43392)
- 3.2.2 The EIPs SHALL be reviewed annually. (COMN 42346)
- 3.2.2.1 Modification or revisions to EIPs are reflected in the periodic update of the RERP.

- 3.2.2.2 Any changes or revision to the EIPs that affects the interface with State and/or local government emergency response plans should be made available to the affected governmental agency.
- 3.2.2.3 Telephone numbers listed in the EIPs SHALL be reviewed and updated at least quarterly as per the Plant's Surveillance Program. (COMN 3925)
- 3.2.3 The RERP and the EIP distribution lists SHALL be reviewed annually to ensure that the proper personnel, departments, and agencies are included on the lists as per the Plant's Surveillance Program. (COMN 20409)
- 3.3 EMERGENCY RESPONSE FACILITY AND EQUIPMENT MODIFICATION
- 3.3.1 When necessary changes, repairs, or modifications to Emergency Response Facilities are identified, the work should be accomplished by the appropriate Plant department following the procedures outlined in APA-ZZ-00320, Initiating and Processing Work Requests.
- 3.3.2 If the change or modification is of such a degree as to require a design change to the Emergency Response Facility, the change or modification MUST be accomplished following the guidance of APA-ZZ-00600, Design Change Control.
- 3.4 ON-SITE EMERGENCY RESPONSE TRAINING
(COMN 3907)
- On-site emergency response training is conducted in accordance with EIP-ZZ-A0066. It covers the training provided for both Emergency Response Personnel and Non-Emergency Response Personnel.
- 3.4.1 NON-EMERGENCY RESPONSE PERSONNEL
- Non-Emergency Response Personnel are those personnel who are granted unescorted access to the Callaway Plant, but who do not have designated responsibilities in the Emergency Response Organization. Non-Emergency Response Personnel SHALL successfully complete GET training (Callaway Orientation – T8.0030.6/8). This training includes duties and responsibilities of emergency response and non-emergency response personnel, emergency classifications, assembly areas, alarms, emergency response actions and accountability/evacuation. (COMN 3905)

3.4.2 EMERGENCY RESPONSE PERSONNEL (COMN 42658)

Emergency Response Personnel are selected and assigned to a position in the Emergency Response Organization per **EIP-ZZ-A0001**, Emergency Response Organization. Prior to assuming a position in the Emergency Response Organization (ERO), each individual will complete required initial training.

3.4.2.1 RERP INITIAL TRAINING

RERP Initial Training required for each ERO position is identified in **EIP-ZZ-A0066**. (COMN 3905)

3.4.2.2 RERP CONTINUING TRAINING

RERP Continuing Training should be based, as appropriate, on changes to applicable procedures and processes, Plant and industry experiences, and the results of previous drills and Exercises.

3.4.2.2.1 Drills and Exercises may be utilized as training activities where familiarity with specific RERP duties and/or functions can be demonstrated.

3.4.2.2.2 The applicable provisions of **EIP-ZZ-A0066** MUST be met when utilizing drills and Exercises to meet training requirements.

3.5 OFF-SITE EMERGENCY RESPONSE TRAINING

3.5.1 Callaway Plant coordinates with SEMA in emergency planning and emergency response with four (4) counties which partially lie within the Plume Exposure Pathway (10-mile EPZ) and the city of Fulton. The county jurisdictions are Callaway, Gasconade, Montgomery and Osage Counties. (COMN 42673)

3.5.2 Off-site emergency response training is the responsibility of the Missouri State Emergency Management Agency (SEMA) in conjunction with the Missouri Department of Health (DOH), and local county agencies. Callaway Plant provides support to these agencies as requested.

3.5.3 Training for off-site fire fighting personnel includes radiological hazards, which may be encountered while fighting fires in the Plume Exposure Pathway. (COMN 42508)

- 3.5.4 For those local support services who may enter the site, Callaway Plant provides training which also includes site access procedures and the identity (by position title) of the individual who requests the services. (COMN 42722)
- 3.6 DRILLS AND EXERCISES
 - 3.6.1 Emergency Preparedness has overall responsibility for conducting RERP drills and exercises on site. Additional guidance on conducting RERP drills and exercises is contained in **KDP-ZZ-02001**, Drill and Exercise Program. (COMN 3917)
 - 3.6.2 Periodic drills SHALL be conducted in accordance with Attachment 1, Drill and Exercise Descriptions and Frequencies, to evaluate emergency response capabilities and to test specific aspects of emergency response plans, implementing procedures, and equipment. These drills may be incorporated with the RERP Continuing Training when the situation allows. (COMN 3916)
 - 3.6.3 Unannounced drills MUST have prior approval.
 - 3.6.3.1 Approval should be obtained from departments most affected by the drill.
 - 3.6.3.2 Approval MUST be obtained from a Manager or above.
 - 3.6.3.3 Approval from the Shift Supervisor (SS) that is on shift at the time of the drill should be obtained for drills when on-shift personnel in the power block are expected to actively participate. If the on-shift Shift Supervisor is to actively participate, then prior approval should be obtained from a different Shift Supervisor.
 - 3.6.4 To maintain the confidentiality of unannounced drills and exercises, personnel requiring knowledge of the drill or exercise should sign the Unannounced RERP Drill and Exercise Security Agreement (CA-#2553), Attachment 6. This includes controllers and evaluators from outside the EP Department. This also includes pre-staged personnel who have knowledge that could affect the evaluation of the drill or exercise.
 - 3.6.5 Drills are not required to be conducted independently and may be conducted as part of an integrated drill or exercise.
 - 3.6.6 Actual events that may cause the activation of the Radiological Emergency Response Plan (RERP) may not be substituted for a required drill or exercise.

- 3.6.7 Some drills are scheduled while others are unannounced.
(COMN 3916)
- 3.6.8 Periodically arrangements SHALL be made for federal agencies to participate in Exercises. (COMN 3967)
- 3.6.9 Provisions SHALL be made to start an Exercise between 1800 and 0400 once every six (6) years. (COMN 3968)
- 3.7 DRILL AND EXERCISE DEVELOPMENT
- Radiological Emergency Response Drills and Exercises are developed using **KDP-ZZ-02001** and the guidance in Attachment 2, Exercise Development Items, and the following guidelines:
- 3.7.1 Objectives SHALL be selected to include those listed in Attachment 3, Drill and Exercise Objectives, as necessary to meet the stated frequency requirements for each objective.
(COMN 3918)
- 3.7.2 Development of off-site objectives and guidelines should be coordinated with appropriate State and local agencies, if applicable.
- 3.7.3 Exercises should include mobilization of appropriate Callaway Plant, State and local organizations to verify their ability to respond to an accident scenario, which requires implementation of on-site and off-site radiological emergency response plans.
- 3.7.4 Exercise and drill scenarios SHALL be varied to assure that all the major elements of on-site and off-site emergency response plans and organizations are tested within a six-year period.
(COMN 3917)
- 3.7.5 Exercise objectives, extent of play, and scenarios are submitted to the Nuclear Regulatory Commission (NRC) and Federal Emergency Management Agency (FEMA) in accordance with **KDP-ZZ-00510**, Exercise Submittals to NRC/FEMA.
- 3.7.6 A Lead Controller, as designated by the Superintendent, Protective Services, SHALL be responsible for the overall conduct of Radiological Emergency Response Drills and Exercises. Utility provided controllers and evaluators SHALL be trained and briefed prior to the drill/exercise. (COMN 3919)

- 3.7.7 No actions should be performed during a drill or exercise which have the potential for affecting Plant operations.
- 3.7.8 Drill/exercise activities should be placed on hold or suspended, if an actual emergency arises.
- 3.7.9 Upon completion of drills and exercises, critiques SHALL be conducted. The lead facility participant in each Emergency Response Facility (Recovery Manager, Emergency Coordinator, Shift Supervisor, etc.) is normally designated to conduct a critique with the controllers, evaluators, and participants. (COMN 3920, COMN 42978)
- 3.7.10 The NRC and, if applicable, FEMA SHALL be invited to evaluate and critique the exercise. (COMN 3920)
- 3.7.11 The facility lead controller should record or have recorded any programmatic comments or deficiencies identified.
- 3.7.12 Emergency Preparedness collects all facility critiques and dispositions deficiencies and areas for improvement in accordance with Plant procedures. (COMN 3920)
- 3.7.13 Upon completion of a drill or exercise, forward a copy of the Drill Approval Forms (if applicable), Drill/Exercise Objectives, and Critique to Document Control as QA Records.
- 3.8 TESTS AND SURVEILLANCES
- 3.8.1 EMERGENCY EQUIPMENT KITS
- 3.8.1.1 Emergency equipment kits are located in various Emergency Response Facilities and contain supplies, equipment and procedures that may be utilized during an emergency.
- 3.8.1.2 Health Physics supplies and equipment contained in the emergency equipment kits are inventoried and maintained by the Health Physics Department, per **HTP-ZZ-05007**, Maintenance and Inventory of HPOPS Emergency Equipment Kits, and **HTP-ZZ-07003**, Maintenance and Inventory of Health Physics Technical Support Emergency Equipment Kits.
- 3.8.2 EMERGENCY PACKETS
- Emergency packets containing copies of procedures, forms, and clerical supplies are maintained in accordance with **KDP-ZZ-00300**, Emergency Packet Maintenance.

3.8.3 EMERGENCY TELEPHONE DIRECTORY (ETD)

The ETD is part of the Callaway Plant Personnel Data Base System. A document copy of the ETD can be printed upon demand. The ETD is printed and distributed quarterly per the Plant's Surveillance Program.

3.8.4 PUBLIC ALERT SYSTEM

A Public Alert System is maintained to provide prompt notification of the public in the event of an emergency at the Callaway Plant. The system is tested monthly in accordance with the Plant's Surveillance Program.

3.8.5 PUBLIC INFORMATION PROGRAM

A Public Information Program, in cooperation with Corporate Communications, is maintained to ensure that the general public and news media in the Plume Exposure Pathway Emergency Planning Zone are provided with information regarding an emergency at the Callaway Plant on an annual basis. The Public Information Program is maintained in accordance with the Plant's Surveillance Program. (COMN 42507)

3.8.6 COMMUNICATION TESTS

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 is 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.

3.8.7 EMERGENCY RESPONSE DATA SYSTEM (ERDS) TESTING

ERDS testing, involving actual Plant data transmission to the Nuclear Regulatory Commission, is an evolution that is scheduled with the NRC and performed quarterly in accordance with the Plant's Surveillance Program.

3.8.8 EMERGENCY ACTION LEVELS (EALs)

EALs SHALL be reviewed with State and local agencies on an annual basis and documented using Attachment 5, Annual EAL Review. (COMN 43393)

3.8.9 Tool kits are available in the Technical Support Center. They contain various mechanical, electrical, and instrument and control tools that may be used during an emergency. **CARS 200104423**

3.8.9.1 Work Control Electrical, Work Control Mechanical, and Instrument & Control (I&C) Departments maintain the tool kits in accordance with the Preventive Maintenance Program.

4 REFERENCES

4.1 10CFR50.47

4.2 10CFR50.54

4.3 10CFR50, Appendix E

4.4 NUREG 0654, FEMA-REP-1

4.5 **APA-ZZ-00320**, Initiating and Processing Work Requests

4.6 **APA-ZZ-00500**, Corrective Action Program

4.7 **APA-ZZ-00600**, Design Change Control

4.8 **EIP-ZZ-A0001**, Emergency Response Organization

4.9 **EIP-ZZ-A0066**, RERP Training Program

4.10 **FPP-ZZ-00009**, Fire Protection Training Program

4.11 **HTP-ZZ-05007**, Maintenance and Inventory of HPOPS
Emergency Equipment Kits

4.12 **HTP-ZZ-07003**, Maintenance and Inventory of Health Physics
Technical Support Emergency Equipment Kits

4.13 **KDP-ZZ-00300**, Emergency Packet Maintenance

4.14 **KDP-ZZ-00400**, Emergency Preparedness 10CFR50.54(q)
Evaluations

- 4.15 **KDP-ZZ-00410**, Radiological Emergency Response Plan (RERP)
Change/Revision Process
- 4.16 **KDP-ZZ-00510**, Exercise Submittals to NRC/FEMA
- 4.17 **KDP-ZZ-02001**, Drill and Exercise Program

5 RECORDS

5.1 QA RECORDS

- 5.1.1 Annual EP Review Records (File G170.0046)
- 5.1.2 Drills/Annual Exercises (objectives, critiques, and approval forms)
(File K235.0001)
- 5.1.3 Letter documenting annual review of RERP (File A210.0038)
- 5.1.4 Letter documenting annual review of RERP Letters of Agreement
(File K190.0011)
- 5.1.5 Annual EAL Review (File A190.0001)
- 5.1.6 Callout Tests/Drills (File K231.0024)
- 5.1.7 Pre-Exercise Drills (File K233.0000)
- 5.1.8 Medical Emergency Drills (File K234.0001)
- 5.1.9 Remedial Exercises (File K235.0002)
- 5.1.10 Other Drills (File K234.0000)
- 5.1.11 Unannounced RERP Drill Approval Form (K235.0001)
- 5.1.12 Unannounced RERP Drill and Exercise Security Agreement
(File K235.0001/K235.0002)

DRILL AND EXERCISE DESCRIPTIONS AND FREQUENCIES

These are minimum frequencies required. Additional drills may be held as determined by the Superintendent, Protective Services.

COMN	TYPE	DESCRIPTION	FREQUENCY	RESPONSIBLE DEPT.
3917	Exercise	The Exercise tests the integrated capability of the Callaway Plant emergency response organizations to respond to an emergency. (State and local emergency organizations are tested as required by Federal Guidelines.)	Biennial	Emergency Preparedness
3917		The Exercise SHALL provide for periodic participation by Federal Emergency Response agencies.	Periodic	Emergency Preparedness
3968		Provisions SHALL be made to start an exercise between 6:00 p.m. and 4:00 a.m.	At least once every 6 years.	Emergency Preparedness
20602	Call-Out Test	This test verifies the ability of the ERO to be contacted and estimate their arrival at their specific Emergency Response Facility.	Quarterly (Test)	Emergency Preparedness
	Call-Out Drill	This drill verifies the ability to actually augment the emergency response organization as specified in the RERP.	At least once every 6 years (Drill)	Emergency Preparedness
3921	Medical Emergency Drill	This drill involves the response to simulated contaminated injured/ill individuals providing for periodic participation by off-site ambulance services and medical treatment facilities.	Annually	Emergency Preparedness and SEMA
3921	Medical Emergency MERT Drill	This drill involves response to simulated medical emergencies providing participation by the onsite Medical Emergency Response Team (MERT). These drills are conducted in accordance with the Fire Protection Training Program, FPP-ZZ-00009 .	At least annually	Fire Protection
3923	Health Physics Drill	This drill involves the response to, and analyses of, simulated elevated airborne and liquid samples, and direct radiation measurements in the environment.	Semi-Annually	Emergency Preparedness
3922	Radiological Monitoring Drill	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.	Annually	Emergency Preparedness
	Fire Drills	These drills are conducted in accordance with the Fire Protection Program.	Periodically	Fire Protection

EXERCISE DEVELOPMENT ITEMS

Lead Controller Responsibilities

1. Drill Approval Form - Attachment 4 (if applicable)
2. Drill/Exercise Scenario Package Contents (COMN 42506)
 - a. On-site Objectives
 - b. On-site Guidelines and Extent of Play
 - c. Controllers Instructions
 - d. Controller List
 - e. Participant List
 - f. On-site Evaluation Material
 - g. Narrative Summary
 - h. Logs, Watch Turnover Material, Work Packages and RWPs etc.,
 - i. On-site Sequence of Events
 - j. Simulator Actions
 - k. Initial Conditions
 - l. On-site Messages
 - m. On-site Mini-scenarios
 - n. Plant parameters, Rad Monitor Data, Chemistry Data, and other Simulated Plant Data
 - o. Meteorological Data
 - p. In-Plant Survey, Perimeter, and Field Monitoring Rad Data
 - q. Ingestion Pathway Rad Data
3. Identify On-site Participants, Controllers, and Evaluators
4. Complete On-site Controller/Evaluator Briefings/Training
5. Schedule and Prepare Simulator
6. Scenario Printing and Distribution
7. Prepare and Distribute Accountability Exemption Lists
8. Provide for and Coordinate Controller Communications
9. Initial Condition Briefings

<p><u>NOTE:</u> Not every item listed is applicable for each drill or exercise.</p>

EXERCISE DEVELOPMENT ITEMS

Emergency Preparedness Department Off-Site Responsibilities

1. Drill/Exercise Scenario Package Contents
 - a. Off-site Objectives
 - b. Off-site Guidelines and Extent of Play
 - c. Off-site Evaluation Material
 - d. Off-site and Public Information Sequence of Events
 - e. Off-site, Public Information, Media Monitor, and Rumor Control Messages
 - f. Off-site Mini-Scenarios
2. Submittal of Objectives and Guidelines and Scenario to the NRC and FEMA.
3. Identify Off-site Controllers and Evaluators
4. Schedule Off-site Controller and Evaluator Briefing/Training
5. Schedule NRC and FEMA Entrance and Exit Meetings
6. Schedule Facilities (Except Simulator)
7. Place Drill/Exercise Meal Orders
8. Drill/Exercise Critiques

<p><u>NOTE:</u> Not every item is applicable for each drill or exercise.</p>
--

DRILL AND EXERCISE OBJECTIVES

I. Objectives That SHALL Be Met Each Year (COMN 3918)

- A. Demonstrate the ability to perform accident detection and assessment.
- B. Demonstrate the ability to classify an emergency.
- C. Demonstrate the ability to notify on-site and off-site emergency response personnel.
- D. Demonstrate primary communications between the plant, its various facilities, and other emergency response organizations.
- E. Demonstrate emergency radiological controls.
- F. Demonstrate the ability to make Protective Action Recommendations to off-site authorities.
- G. Demonstrate the ability to augment emergency response organizations.
- H. Demonstrate the ability to staff the On-Shift Emergency Response Organization.

II. Objectives That SHALL Be Met Over a 6-Year Period

- A. Demonstrate emergency response capabilities during varied conditions. (Off-hours staffing 6 p.m. to 4 a.m.; various weather conditions; unannounced). (COMN 3968)
- B. Demonstrate the activation of the Joint Public Information Center (JPIC) and dissemination of information to the public.
- C. Demonstrate the ability to use the Fire Brigade.
- D. Demonstrate the use of a Medical Emergency Response Team (MERT) and/or search and rescue teams.
- E. Demonstrate the ability to provide Emergency Medical Services (EMS) for contaminated injured individuals. (COMN 3921)
- F. Demonstrate that security can allow for prompt access of emergency equipment and support.
- G. Demonstrate the availability of backup communication capabilities.
- H. Assist the State of Missouri in performing rumor control.
- I. Demonstrate the use of emergency power (where not a part of plant safety systems, e.g. Technical Support Center (TSC)).
- J. Demonstrate the ability to evacuate Emergency Response Facilities (ERFs) and relocate to backup ERFs where applicable.
- K. Demonstrate the ability to provide support to off-site agencies for environmental sampling and analysis, and protective action recommendations for the Ingestion Pathway.
- L. Demonstrate the ability to perform field monitoring, including soil, vegetation, and water samples.
- M. Demonstrate the ability to determine the magnitude and impact of a radiological release.
- N. Demonstrate the ability to monitor radioactive iodines in off-site environs. (COMN 43477)
- O. Demonstrate the ability to provide for the use of potassium iodide.
- P. Demonstrate the ability to account for site personnel.
- Q. Demonstrate the ability to perform plant recovery and plant re-entry.

UNANNOUNCED RERP DRILL APPROVAL FORM

Drill Type _____ Drill Date _____

Start Time _____

Expected Duration _____

Brief Drill Scenario:

Prepared By:

_____, _____, _____
Name Title Date

Approved by Responsible Department(s) _____, _____
Signature Date

_____, _____
Signature Date

_____, _____
Signature Date

Manager Approval _____, _____
Signature Date

Shift Supervisor Approval* _____, _____
Signature Date

*Should be obtained if personnel on-shift in the power block are expected to participate.

Annual EAL Review

Date

____ EIP-ZZ-00101, Emergency Action Levels (EALs), have been reviewed with me and I understand this fulfills the annual review requirement.
(COMN 43393)

Callaway County

County Commissioner/EMD

Gasconade County

County Commissioner/EMD

Montgomery County

County Commissioner/EMD

Osage County

County Commissioner/EMD

State Emergency Management Agency

SEMA Director/State Representative

Unannounced RERP Drill and Exercise Security Agreement

I acknowledge that I have acquired specialized knowledge about the scheduled drill or Exercise indicated below. I agree that I will not knowingly divulge any information about this drill or Exercise scenario to any unauthorized person.

An unauthorized person is anyone that may be called upon to participate as a responder in the scheduled drill or Exercise. (Unannounced drills are considered scheduled drills or Exercises.)

I understand that as a controller, evaluator, pre-designated participant required to be staged, I will keep and control any scenario-related materials, including the dates for unannounced drills or Exercises, in a secured manner. Additionally, I acknowledge that if I allow disclosure of information or material of this nature to unauthorized persons, it could result in the failure of the drill or Exercise.

Scheduled drill/Exercise Date: _____

Printed Name	Signature	Date
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
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CALLAWAY PLANT
EMERGENCY PLAN IMPLEMENTING PROCEDURE
EIP-ZZ-00213
TECHNICAL ASSESSMENT

RESPONSIBLE DEPARTMENT Emergency Preparedness

PROCEDURE OWNER W. R. Bevard

WRITTEN BY W. R. Bevard

PREPARED BY W. R. Bevard

APPROVED BY Warren A. Witt

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This procedure contains the following:

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Checkoff Lists	<u> </u>	through	<u> </u>

This procedure has checkoff list(s) maintained in the mainframe computer.

Conversion of commitments to TRS reference/hidden text completed by Revision Number:

Non-T/S Commitments 016

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TECHNICAL ASSESSMENT

1 PURPOSE AND SCOPE

- 1.1 To provide guidance to the Technical Support Center (TSC) engineering staff in performing technical assessment and maintaining plant status boards during an emergency. Also provides guidance for actions necessitated in the event of Plant Computer System (PCS) failure.

2 RESPONSIBILITIES

2.1 TECHNICAL ASSESSMENT COORDINATOR

- 2.1.1 The Technical Assessment Coordinator (TAC):

2.1.1.1 The TAC reports to the Emergency Coordinator (EC). The TAC is responsible for technical assessment of Plant conditions to identify EALs and emergency mitigating recommendations to the EC. The TAC is also responsible for coordinating Protective Action Recommendations (PARs) consistent with Plant Conditions with the Recovery Manager and Dose Assessment Coordinator in the EOF prior to the arrival of the Protective Measures Coordinator (PMC) or Plant Assessment Coordinator (PAC). (COMN 3333)

2.1.1.2 Provides the TSC Engineering Staff with direction and control.

2.1.1.3 Ensures coordination with other groups and sources of information.

2.1.1.4 Provides oversight and direction of the TSC until the EC arrives.

2.2 TSC LEAD ENGINEER (TLE)

- 2.2.1 The TLE reports to the Technical Assessment Coordinator in the TSC. The TLE is responsible for assisting the TAC in directing and controlling the Engineering staff. (COMN 3351)

2.3 TSC ENGINEERING STAFF

The TSC Engineering Staff reports to the Technical Assessment Coordinator in the TSC. They are responsible for diagnosing and analyzing potential and actual Plant problems, and providing recommended courses of action to the Technical Assessment Coordinator. These responsibilities include; assessment of core physics, thermal hydraulics, and general plant conditions. They may be dispatched to Plant areas for surveillance purposes as directed by the Technical Assessment Coordinator.

2.4 ENGINEERING STATUS BOARD LOGKEEPERS (ESL)

2.4.1 The ESLs report to the TAC and are responsible for maintaining the logs and status boards for the Technical Assessment Group.

3 PROCEDURE

3.1.1 Place the TSC HVAC system in recirculation per **OOA-UB-00005**.

3.1.2 Use **EIP-ZZ-00217** to activate the Emergency Response Data System (ERDS) as soon as possible, but NOT later than one hour after a declared plant Alert or higher emergency, The ERDS can be activated from the Control Room or from the Technical Support Center Plant Computer terminals. (**COMN 42625**)

3.1.3 Develop strategies, using Severe Accident Management Guidelines (SAMGs), for severe accident conditions.

3.1.4 Evaluate the condition of the Reactor Core using: (**COMN 42534**)

- a. Radiation Monitoring System.
- b. Plant instrumentation and Plant Computer System.
- c. Post accident sampling results.

- 3.1.5 Assess essential safety-related systems using:
 - a. Appropriate Callaway Plant drawings.
 - b. Plant Operating/Emergency, Engineering, I & C, and Maintenance procedures, and Severe Accident Management Guidelines.
 - c. The Plant Computer System or parameters as given through communications.
 - d. The Callaway Plant Final Safety Analysis Report and Callaway Technical Specifications.
 - e. Equipment technical manuals.
 - f. Information obtained from other sources.
- 3.1.6 Assist the Control Room staff by relieving the reactor operators of peripheral duties such as:
 - a. Plotting key parameters to backup or assist in trend analysis, as requested.
 - b. Evaluating the adequacy of natural circulation flow or heat sink efficiency.
- 3.1.7 Coordinate the design and installation of temporary modifications.
- 3.1.8 Recommend any changes to plant operations to mitigate damage or to place the plant in a safe mode of operation.
- 3.1.9 Dispatch engineers to plant areas for surveillance purposes or to assist repair teams as required. **(COMN 3351)**
- 3.1.10 Assist in the preparation of emergency repairs including material suitability and/or procedure preparation.
- 3.1.11 Monitor Emergency Action levels per **EIP-ZZ-00101**, Classification of Emergencies.
- 3.1.12 Prior to the arrival of the Protective Measures Coordinator (PMC) and the Plant Assessment Coordinator (PAC) to the EOF, monitor criteria for protective action recommendations per **EIP-ZZ-00212**, Protective Action Recommendations.

3.1.13 Provide an estimation of radiological release duration and core damage assessment to the Health Physics Coordinator, Dose Assessment Coordinator and Emergency Coordinator.

3.1.14 Upon entry into the recirculation phase of RHR:

3.1.14.1 Direct the Chemistry Coordinator to obtain samples from the RWST once every 12 hours, using **CSP-ZZ-07540**.

NOTE:

Local samples should be taken from BN-V-0023 and BN-V-0029. Increased activity indicates valve leakage back to the RWST.

3.1.14.2 Inform the Health Physics Coordinator of probable increase in Auxiliary Building radiation levels and have him inform any Teams in the field.

3.1.14.3 Inform the Health Physics Coordinator of possible valve leakage to the RWST so that Health Physics support for sampling, sample counting, and possible release calculations can be arranged.

3.2 MAINTAINING THE PLANT STATUS BOARDS

3.2.1 Maintain the plant status boards using the Plant Computer.

3.2.1.1 Call up the plant status boards displays on the Plant Computer to obtain plant status. The information needed to maintain the plant status boards is contained on these displays.

3.2.1.1.1 On the Plant Computer command line enter PSB (Plant Status Board). This brings up the first screen and from that you can move to the next screen.

3.2.1.1.2 Either print each display or, if the printer is inoperable, transfer the data to Attachment 1, Plant Status Board.

3.2.1.2 If data points are not available on the PSB displays, they can be obtained from the Plant Computer using Attachment 3.

NOTE:

A cross reference of the information required for the status board with Plant Computer data points is available by using Attachment 2, Plant Status Board Key and Attachment 3, Plant Status Board / Plant Computer Cross Reference.

- 3.2.1.3 If the PSB data is questionable Attachment 4 may be used to compare redundant but sometimes less desirable data. If data remains questionable the data should be annotated with a question mark to indicate the data is questionable. (SOS 97-0904)
- 3.2.2 If the Plant Computer is inoperable.
- 3.2.2.1 The Technical Assessment Coordinator should designate and direct the necessary individuals to report to the Control Room and provide regular plant status board updates. (SOS 97-0904)
- 3.2.2.1.1 The individuals reporting to the Control Room should establish communication with the TSC upon arrival.
- 3.2.2.2 Using Attachment 4, Plant Status Board / Main Control Board Cross Reference to assist in collecting the data and Attachment 2, Plant Status Board Key, complete Attachment 1 in as close to 15 minute intervals as practical.

<p><u>NOTE:</u> Relay of Attachment 1 information from the Control Room can be done using the fax machine.</p>
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- 3.2.2.3 Relay the information on the completed Attachment 1 to the TSC Engineering Staff to update the plant status boards.
- 3.2.3 As much as possible and appropriate, arrows should be placed next to specified values on the PSB to indicate upward {↑} or downward {↓} trends.
- 3.3 EMERGENCY RESPONSE DATA SYSTEM DEACTIVATION
- 3.3.1 The ERDS is deactivated on the Plant Computer terminal by going to the ERDS display and pressing <F3>. Pressing <F3> terminates the modem program and returns the Plant Computer terminal to the user.

4 FINAL CONDITIONS

- 4.1 The Emergency Coordinator or the designee has determined that technical assessment is no longer required.

5 REFERENCES

- 5.1 Callaway Plant Radiological Emergency Response Plan (RERP)
- 5.2 NRC Information Notice 91-56
- 5.3 NUREG-1394, Rev. 1 - Emergency Response Data System (ERDS) Implementation
- 5.4 **ETP-ZZ-02000 - TECHNICAL ASSESSMENT**
- 5.5 10 CFR 50, Appendix E, part V
- 5.6 **EIP-ZZ-00217 - Emergency Response Data System Activation**
- 5.7 **CSP-ZZ-07540 - Water Storage Tank Activity**
- 5.8 Severe Accident Management Guidelines

6 RECORDS

<p><u>NOTE:</u> Position logs, screen prints, forms, memos, notes, etc. should be attached to each Coordinator's checklist and turned in to the Admin Coordinator and/or Emergency Preparedness (EP).</p>
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6.1 QA RECORDS

- 6.1.1 Plant Status Report, Attachment 1 (K171.0010)

6.2 COMMERCIAL RECORDS

None

PLANT STATUS BOARD

UPDATE TIME:		EMERGENCY PROCEDURE:				DESCRIPTION												
RCS CONDITIONS					STEAM GENERATORS				ECCS STATUS				CONTAINMENT CONDITIONS					
Rx TRIP date time	Rx PWR _____%	RCS WR PRESS. _____ psig	RVLIS DYNAMIC _____% STATIC _____%	SUB-COOLING (NEG. IF SUPER-HEAT) _____ °F		A	B	C	D	ON/OFF	TRAIN 'A'	TRAIN 'B'	FLOW (GPM)	PRESS. _____ psig	TEMP _____ °F	HUMIDITY _____ %	RAD LVL _____ R/HR	H2 CONC _____ %
HIGHEST CORE EXIT T/C _____ °F	PZR LVL _____%	RCS ACTIVITY _____ mCi/cc	PRT TEMP _____ °F PRESS _____ PSIG LEVEL _____ %	LVL _____ % NR						CCP _____ NCP _____				CTMT SPRAY PUMP 'A'; ON / OFF CTMT SPRAY PUMP 'B'; ON / OFF				
PZR PORV 'A' OP / CL	'A' PORV BLOCK VLV OP / CL	PZR PORV 'B' OP / CL	'B' PORV BLOCK VLV OP / CL	LVL _____ % WR						SI _____ RHR _____				CTMT RECIRC SUMP 'A'; ____ IN. CTMT RECIRC SUMP 'B'; ____ IN.				
RCS LOOP	A	B	C	D	PRESS _____ PSIG													
Thot (wr/nr)					MAIN FEED FLOW _____ Klbm/Hr					SI ACC 'A' _____ % psig	SI ACC 'B' _____ % psig	SI ACC 'C' _____ % psig	SI ACC 'D' _____ % psig	ESFAS ACTUATIONS _____ SIS	CSF STATUS _____ CIS-A	COLOR _____ SUBCRIT	REASON (if not green)	
Tcold (wr/nr)					AUX FEED FLOW _____ Klbm/Hr								RWST LVL _____ %	SIS	CIS-A			
LOOP FLOW (%)					STEAM FLOW _____ Klbm/Hr					ELECTRICAL SYSTEMS STATUS				CIS-B	CSAS	CORE COOLING		
RCP (ON/OFF/UNAVAIL)					MSIV _____ OP/CL					SWYD BUS A _____ (KV)	SWYD BUS B _____ (KV)	NK01 _____ VDC	CPIS	MSLIS	HEAT SINK			
CONTROL ROD POSITIONS					FWIV _____ OP/CL					D/G 'A' ON/OFF/UNAVAIL.	D/G 'B' ON/OFF/UNAVAIL.	NK02 _____ VDC	FWIS	AFAS	RCS INTEGRITY			
CTRL BANK A	CTRL BANK B	CTRL BANK C	CTRL BANK D		S/G ATM PORV _____ OP/CL					NB01 ENERGIZED _____ YES/NO	NB02 ENERGIZED _____ YES/NO	NK03 _____ VDC	CRVIS	FBIS	CTMT			
S/D BANK A	S/D BANK B	S/D BANK C	S/D BANK D	S/D BANK E	MDAFP 'A' ON / OFF / UNAVAIL MDAFP 'B' ON / OFF / UNAVAIL TDAFP ON / OFF / UNAVAIL	CST LVL _____ %				PA01 ENERGIZED _____ YES/NO	PA02 ENERGIZED _____ YES/NO	NK04 _____ VDC			RCS INVENTORY			

NOTES AND MISC ITEMS

Tank Volumes
 Pressurizer: 120 gal/% Cold 62 gal/% Hot
 PRT: 132.6 gal/% 64-88%
 Accumulators: 7.291 gal/%

VCT: 20.4 gal/%
 RWST: 4007.23 gal/%
 CST: 4608.85 gal/%

CTMT Normal Sumps: 15.6 gal/% or 10 gal/in
 CTMT Emergency Sumps: 40 gal/% <96 in
 Instrument Tunnel Sump: 15 gal/%

Notify Chemistry and HP Coordinator when entering recirc phase

PLANT STATUS BOARD KEY

UPDATE TIME:					EMERGENCY PROCEDURE:					DESCRIPTION								
RCS CONDITIONS					STEAM GENERATORS				ECCS STATUS				CONTAINMENT CONDITIONS					
Rx TRIP ____(1)____ date ____(1)____ time	Rx PWR ____(2)____ %	RCS WR PRESS. ____(3)____ psig	RVLIS DYNAMIC ____(4)____ % STATIC (4) %	SUB-COOLING (NEG. IF SUPER-HEAT) ____(5)____ °F		A	B	C	D	ON/OFF	TRAIN 'A'	TRAIN 'B'	FLOW (GPM)	PRESS. ____(51)____ psig	TEMP ____(52)____ °F	HUMIDITY ____(53)____ %	RAD LVL ____(54)____ R/H	H2 CONC ____(55)____ %
HIGHEST CORE EXIT T/C ____(6)____ °F	PZR LVL ____(7)____ %	RCS ACTIVITY ____(8)____ mCi/cc	PRT TEMP ____(9)____ °F PRESS ____(9)____ PSIG LEVEL (9) %		LVL % NR	(18)	(18)	(18)	(18)	CCP	(29)	(29)		CTMT SPRAY PUMP 'A'; ON / OFF (56) CTMT SPRAY PUMP 'B'; ON / OFF				
									NCP	(30)	N/A							
PZR PORV 'A' (10) OP / CL	'A' PORV BLOCK VLV (10) OP / CL	PZR PORV 'B' (11) OP / CL	'B' PORV BLOCK VLV (11) OP / CL		LVL % WR	(19)	(19)	(19)	(19)	SI	(31)	(31)		CTMT RECIRC SUMP 'A'; ____ IN. (57) CTMT RECIRC SUMP 'B'; ____ IN.				
RCS LOOP	A	B	C	D	PRESS PSIG	(20)	(20)	(20)	(20)	RHR	(32)	(32)						
Thot (wr/nr)	(12)	(12)	(12)	(12)	MAIN FEED FLOW Klbm/Hr	(21)	(21)	(21)	(21)	SI ACC 'A' ____(33)____ % (33) psig	SI ACC 'B' ____(34)____ % (34) psig	SI ACC 'C' ____(35)____ % (35) psig	SI ACC 'D' ____(36)____ % (36) psig	ESFAS ACTUATION NS	CSF STATUS	COLOR	REASON (if not green)	
Tcold (wr/nr)	(13)	(13)	(13)	(13)	AUX FEED FLOW Klbm/Hr	(22)	(22)	(22)	(22)	RWST LVL ____(38)____ %				SIS (59)	CIS-A (60)	SUBCRIT	(69)	(69)
LOOP FLOW (%)	(14)	(14)	(14)	(14)	STEAM FLOW Klbm/Hr	(23)	(23)	(23)	(23)	ELECTRICAL SYSTEMS STATUS				CIS-B (61)	CSAS (62)	CORE COOLING	(69)	(69)
RCP (ON/OFF/UNAVAIL)	(15)	(15)	(15)	(15)	MSIV OP/CL	(24)	(24)	(24)	(24)	SWYD BUS A ____(39)____ (KV)	SWYD BUS B ____(40)____ (KV)	NK01 ____(47)____ VDC	CPIS (63)	MSLIS (64)	HEAT SINK	(69)	(69)	
CONTROL ROD POSITIONS					FWIV OP/CL	(25)	(25)	(25)	(25)	D/G 'A' (41) ON/OFF/UNAVAIL.	D/G 'B' (42) ON/OFF/UNAVAIL.	NK02 ____(48)____ VDC	FWIS (65)	AFAS (66)	RCS INTEGRITY	(69)	(69)	
CTRL BANK A ____(16)____ S/D BANK A ____(17)____	CTRL BANK B ____(16)____ S/D BANK B ____(17)____	CTRL BANK C ____(16)____ S/D BANK C ____(17)____	CTRL BANK D ____(16)____ S/D BANK D ____(17)____		S/G ATM PORV OP/CL	(26)	(26)	(26)	(26)	NB01 ENERGIZED (43) YES/NO	NB02 ENERGIZED (44) YES/NO	NK03 ____(49)____ VDC	CRVIS (67)	FBIS (68)	CTMT	(69)	(69)	
					MDAFP 'A' ON / OFF / UNAVAIL (27) MDAFP 'B' ON / OFF / UNAVAIL (27) TDAFP ON / OFF / UNAVAIL	CST LVL ____(28)____ %				PA01 ENERGIZED (45) YES/NO	PA02 ENERGIZED (46) YES/NO	NK04 ____(50)____ VDC			RCS INVENTURY	(69)	(69)	

NOTES AND MISC ITEMS

Tank Volumes

Pressurizer: 120 gal/% Cold 62 gal/% Hot
PRT: 132.6 gal/% 64-88%
Accumulators: 7.291 gal/%

VCT: 20.4 gal/%
RWST: 4007.23 gal/%
CST: 4608.85 gal/%

CTMT Normal Sumps: 15.6 gal/% or 10 gal/in
CTMT Emergency Sumps: 40 gal/% <96 in
Instrument Tunnel Sump: 15 gal/%

Notify Chemistry and HP Coordinator when entering recirc phase

PLANT STATUS BOARD / PLANT COMPUTER CROSS REFERENCE

This Attachment is designed to match up information on the Plant Status Board with the appropriate computer points on the Plant Computer. The key number is the matching number from Attachment 2. If there is no associated computer point for an item number, additional information is provided as to where this information can be obtained. When there is more than one computer point that provides the information for an item number the preferred computer point is provided first separated from the secondary computer points by semi colons.

<u>KEY</u>	<u>PLANT COMPUTER POINT</u>
1	Reactor Trip Date = SPDS4033-35, Reactor Trip time SPDS4036-38; ALARM Review
2	Rx PWR ; Post Accident Wide Range = SEN0701; SEN0060B, 61B Power Range SPDS00059; REU1169; REN0049A-52A
3	RCS WR PRESSURE ; SPDS0001; REP0498A , 499A
4	RVLIS DYNAMIC = REU0523; REL0503A , 523A RVLIS STATIC = SPDS0042; REL0501A, 521A
5	SUBCOOLING ; SPDS0006; REU1734-37
6	HIGHEST CORE EXIT T/C ; REU0090; LOCATION = REU0092; RET0001A - RET0050A
7	PZR LVL ; REU0483; REL0480A - 482A
8	RCS ACTIVITY ; SJR0001 OR CHEMISTRY COORDINATOR
9	PRT TEMP = RET0485A PRT PRESS = REP0485A PRT LEV = REL0485A
10	PZR PORV A = BBZ455AA BLOCK VALVE A = BBZ8000A
11	PZR PORV B = BBZ455AB BLOCK VALVE B = BBZ8000B
12	RCS LOOPS Thot ; A = WIDE RET0419A; NARROW REU411A B = WIDE RET0439A; NARROW REU421A C = WIDE RET0459A; NARROW REU431A D = WIDE RET0479A; NARROW REU441A
13	RCS LOOPS Tcold ; A = NARROW RET0402A; WIDE RET0406A B = NARROW RET0422A; WIDE RET0426A C = NARROW RET0442A; WIDE RET0446A D = NARROW RET0462A; WIDE RET0466A
14	RCS LOOP FLOWS ; A = REU0400 ; REF0400A - 402A B = REU0420 ; REF0420A - 422A C = REU0440 ; REF0440A - 442A D = REU0460 ; REF0460A - 462A

KEY	PLANT COMPUTER POINT
15	RCP STATUS; A = BBQ0001 B = BBQ0002 C = BBQ0003 D = BBQ0004
16	CONTROL BANK POSITIONS ; A = REU0001 ; REU0049 ; REC0041 , 42 ,45 ,46 B = REU0002 ; REU0050 ; REC0050 - 57 C = REU0003 ; REU0051 ; REC0059-66 D = REU0004 ; REU0052 ; REC0068 , 69, 72 ,73, 74
17	S/D POSITIONS ; A = REU0010 ; REU0053 ; REC0009 - 12 , REC0014 - 17 B = REU0011 ; REU0054 ; REC0019 - 22 , REC0024 - 27 C = REU0012 ; REU0055 ; REC0029 - 32 D = REU0013 ; REU0056 ; REC0033 - 36 E = REU0014 ; REU0060 ; REC0037 - 40
18	S/G NARROW RANGE LEVELS ; A = REU0415 ; REL0400A - 403A B = REU0435 ; REL0420A - 423A C = REU0455 ; REL0440A - 443A D = REU0475 ; REL0460A - 463A
19	S/G WIDE RANGE LEVELS ; A = REL0404A B = REL0424A C = REL0444A D = REL0464A
20	S/G PRESSURES; A = REU0414 ; REP0400A - 402A B = REU0434 ; REP0420A - 422A C = REU0454 ; REP0440A - 442A D = REU0474 ; REP0460A - 462A
21	MAIN FEED FLOW ; A = REU0410A ; REF0403A , 4A B = REU0430A ; REF0423A , 24A C = REU0450A ; REF0443A , 44A D = REU0470A ; REF0463A , 64A
22	AUX FEED FLOW ; A = ALF0702 B = ALF0703 C = ALF0704 D = ALF0701
23	STEAM FLOW ; A = REU0412A ; REF0405A , 6A B = REU0432A ; REF0425A , 26A C = REU0452A ; REF0445A , 46A D = REU0472A ; REF0465A , 66A
24	MSIV POSITION ; A = ABZ0014 B = ABZ0017 C = ABZ0020 D = ABZ0011

KEY	PLANT COMPUTER POINT
25	FWIV POSITION ; A = AEZ0039 B = AEZ0040 C = AEZ0041 D = AEZ0042
26	S/G ATM PORV ; A = ABZ0001 B = ABZ0002 C = ABZ0003 D = ABZ0004
27	AFP STATUS ; MDAFP A = ALQ0023 MDAFP B = ALQ0022 TDAFP = ALQ0600
28	CST LEVEL; APL0004
29	CCP STATUS AND FLOW ; CCP A = BGQ0001 CCP B = BGQ0002 BIH FLOW = REU0503 ; REF0927A + REF0928A
30	NCP STATUS AND FLOW; NCP = BGQ0003 NPC FLOW = REF0128A
31	SI PUMP STATUS AND FLOW; SIP A = EMQ0004 SIP B = EMQ0005 COLD LEG FLOW = REU0502 ; REF0921A + REF0922A
32	RHR PUMP STATUS: RHR PUMP A = EJQ0001 AND FLOW RHR PUMP B = EJQ0002 COLD LEG FLOW = REU0501 ; REF0626A + REF0627A HOT LEG RECIRC FLOW = REF0948A
33	SI ACC A LEVEL ; REU0512 ; REL0940A , 941A SI ACC A PRESS ; REP0940A , 941 A
34	SI ACC B LEVEL ; REU0513 ; REL0942A , 943A SI ACC B PRESS ; REP0942A , 943 A
35	SI ACC C LEVEL ; REU0514 ; REL0944A , 945A SI ACC C PRESS ; REP0944A , 945 A
36	SI ACC D LEVEL ; REU0515 ; REL0946A , 947A SI ACC D PRESS ; REP0946A , 947 A
37	INJECTION/RECIRC ALIGNMENT; CONTROL ROOM (OR SYSTEM VALVE LINEUP COMPUTER POINTS/ SYSTEM DISPLAYS)
38	RWST LEVEL ; REU0511 ; REL0930A - 933A
39	SWYD BUS A VOLTAGE ; MSE0345A
40	SWYD BUS B VOLTAGE ; MSE0345B
41	D/G A STATUS ; NEE0601
42	D/G B STATUS ; NEE0602
43	NB01 STATUS ; NBQ0701; NEQ0017 , NBQ0013 , NBQ0015
44	NB02 STATUS ; NBQ0702; NEQ0018 , NBQ0017 , NBQ0019
45	PA01 STATUS ; PAE0003

<u>KEY</u>	<u>PLANT COMPUTER POINT</u>
46	PA02 STATUS ; PAE0004
47	NK01 VOLTAGE: NKE0001
48	NK02 VOLTAGE: NKE0002
49	NK03 VOLTAGE: NKE0003
50	NK04 VOLTAGE: NKE0004
51	CONTAINMENT PRESSURE ; REU1000 ; REP1000A - 1002A , REP1038A , 39A
52	CONTAINMENT TEMP ; SPDS0007 ; GNT0060 - 0063
53	CONTAINMENT HUMIDITY ; SPDS0010 ; GNA0027 , 28
54	CONTAINMENT RADIATION ; SPDS0011 ; GTR0059 , 60
55	CONTAINMENT H ₂ CONC. ; SPDS0053 ; GSA0019 , 10
56	CONTAINMENT SPRAY PUMP STATUS ; CSP 'A' ; ENQ0003 CSP 'B' ; ENQ0009
57	CONTAINMENT RECIRC SUMP A LEVEL ; EJL0007 CONTAINMENT RECIRC SUMP B LEVEL ; EJL0008
58	H ₂ RECOMBINER STATUS; OBTAIN FROM CONTROL ROOM IF THERE IS INDICATION OF H ₂ IN CONTAINMENT.
59	SIS ACTUATION ; SAQ0605; SAQ0010A, 10B
60	CIS - A ACTUATION ; SAQ0601, SAQ0005A, 5B
61	CIS - B ACTUATION ; SBQ0012
62	CSAS ACTUATION ; SBQ0013
63	CPIS ACTUATION ; SAQ0603, SAQ0007A, 7B
64	MSLIS ACTUATION; ABZ0602
65	FWIS ACTUATION ; AEZ0600
66	AFAS ACTUATION ;SAQ0606; SAQ011A/B/C
67	CRVIS ACTUATION ; SAQ0602, SAQ0006A, 6B
68	FBIS ACTUATION ; SAQ0604, SAQ0014A, 14B
69	CSF STATUS ; SUBCRIT ; (SPDS) CORE COOLING ; HEAT SINK ; RCS INTEGRITY; CONTAINMENT; RCS INVENTORY;

**PLANT STATUS BOARD / MAIN CONTROL BOARD
CROSS REFERENCE**

This reference is set up to match information on the Plant Status Board with the location and identification number of where that information is found, i.e. the Control Room instrument(s) etc.

Key # = Corresponds to the numbers on Attachment 2, Plant Status Board Key.

PANEL = Designates the panel of the main control board or elsewhere on which the desired instrument or indication is located.

LOC = General location on the panel where the instrument is located:

1st Letter	2nd Letter
U = Upper	R = Right
L = Lower	L = Left
	C = Center

Instrument = Identification number of desired instrument. This number is normally on a label under, over, or on the instrument.

When two or more instruments measure the same parameter, all instruments are listed, one under another, with the same margin. Any, or ideally a rough average of all, of these readings can be used.

In the case where it is preferable to obtain a reading from one instrument rather than another, the less favorable one will be indented. Even less favorable ones will be further indented.

INSTRUMENT EXAMPLE	
XX-XX-XXX	Three desirable instruments. Rough average the valid readings.
XX-XX-XXX	
XX-XX-XXX	
XX-XX-XXX	Less desirable instrument reading for use if desirable not valid.
XX-XX-XXX	Least desirable instrument

ATTACHMENT 4

<u>KEY</u>	<u>PSB ITEM</u>	<u>PANEL</u>	<u>INSTRUMENT ID</u>	<u>CONTROL BOARD LABEL/INFORMATION</u>
12	RCS LOOP Thot A	RL022 - LC RL021 - UR	BB TR-413 BB TI-413A	LOOP 1 H/C LEGS WR TEMP LOOP 1 HOT LEG WR TEMP
	B	RL022 - LC RL021 - UR	BB TR-423 BB TI-423A	LOOP 2 H/C LEGS WR TEMP LOOP 2 HOT LEG WR TEMP
	C	RL022 - LC	BB TR-433	LOOP 3 H/C LEGS WR TEMP
	D	RL022 - LC	BB TR-443	LOOP 4 H/C LEGS WR TEMP
13	RCS LOOP Tcold A	RL022 - LL RL021 - UR	BB TR-413 BB TI-413B	LOOP 1 H/C LEGS WR TEMP LOOP 1 COLD LEG WR TEMP
	B	RL022 - LL RL021 - UR	BB TR-423 BB TI-423B	LOOP 2 H/C LEGS WR TEMP LOOP 2 COLD LEG WR TEMP
	C	RL022 - LC	BB TR-433	LOOP 3 H/C LEGS WR TEMP
	D	RL022 - LC	BB TR-443	LOOP 4 H/C LEGS WR TEMP
14	RCS LOOP FLOW A	RL022 - LL RL022 - LL RL022 - LL	BB FI-414 BB FI-415 BB FI-416	LOOP 1 REACTOR COOLANT FLOW
	B	RL022 - LL RL022 - LL RL022 - LL	BB FI-424 BB FI-425 BB FI-426	LOOP 2 REACTOR COOLANT FLOW
	C	RL022 - LL RL022 - LL RL022 - LL	BB FI-434 BB FI-435 BB FI-436	LOOP 3 REACTOR COOLANT FLOW
	D	RL022 - LC RL022 - LC RL022 - LC	BB FI-444 BB FI-445 BB FI-446	LOOP 4 REACTOR COOLANT FLOW
15	RCP A	RL021 - UL	BB HIS-37	RCP A
	B	RL021 - UL	BB HIS-38	RCP B
	C	RL021 - UL	BB HIS-39	RCP C
	D	RL021 - UL	BB HIS-40	RCP D
16	CTRL BANK POSITION A	RL022 - UR RL003 - UC RL003 - UC	SF074 SC CB-A1 SC CB-A2	PNL CONT RPI DISPLAY CTRL BANK A1 STEP COUNTER CTRL BANK A2 STEP COUNTER

<u>KEY</u>	<u>PSB ITEM</u>	<u>PANEL</u>	<u>INSTRUMENT ID</u>	<u>CONTROL BOARD LABEL/INFORMATION</u>
16	B	RL022 - UR RL003 - UC RL003 - UC	SF074 SC CB-B1 SC CB-B2	PNL CONT RPI DISPLAY CTRL BANK B1 STEP COUNTER CTRL BANK B2 STEP COUNTER
	C	RL022 - UR RL003 - UC RL003 - UC	SF074 SC CB-C1 SC CB-C2	PNL CONT RPI DISPLAY CTRL BANK C1 STEP COUNTER CTRL BANK C2 STEP COUNTER
	D	RL022 - UR RL003 - UC RL003 - UC	SF074 SC CB-D1 SC CB-D2	PNL CONT RPI DISPLAY CTRL BANK D1 STEP COUNTER CTRL BANK D2 STEP COUNTER
17	S/D BANK POSITION			
	A	RL022 - UR RL003 - LC RL003 - LC	SF074 SC SB-A1 SC SB-A2	PNL CONT RPI DISPLAY S/D BANK A1 STEP COUNTER S/D BANK A2 STEP COUNTER
	B	RL022 - UR RL003 - LC RL003 - LC	SF074 SC SB-B1 SC SB-B2	PNL CONT RPI DISPLAY S/D BANK B1 STEP COUNTER S/D BANK B2 STEP COUNTER
	C	RL022 - UR RL003 - LC	SF074 SC SB-C1	PNL CONT RPI DISPLAY S/D BANK C1 STEP COUNTER
	D	RL022 - UR RL003 - LC	SF074 SC SB-D1	PNL CONT RPI DISPLAY S/D BANK D1 STEP COUNTER
	E	RL022 - UR RL003 - LC	SF074 SC SB-D1	PNL CONT RPI DISPLAY S/D BANK E STEP COUNTER
18	S/G NR LEVEL			
	A	RL026 - LL RL026 - LL RL026 - LL RL025 - UL RL006 - UL	AE LI-517 AE LI-518 AE LI-519 AE LI-551 AE FR-510	SG A LEV SG A LEV SG A LEV STEAM GENERATOR A LEV SG A STEAM/FW FLOW/LEV
	B	RL026 - LL RL026 - LL RL026 - LC RL025 - UL RL006 - UL	AE LI-527 AE LI-528 AE LI-529 AE LI-552 AE FR-520	SG B LEV SG B LEV SG B LEV STEAM GENERATOR B LEV SG B STEAM/FW FLOW/LEV
	C	RL026 - LC RL026 - LC RL026 - LC RL025 - UC RL006 - UC	AE LI-537 AE LI-538 AE LI-539 AE LI-553 AE FR-530	SG C LEV SG C LEV SG C LEV STEAM GENERATOR C LEV SG C STEAM/FW FLOW/LEV
	D	RL026 - LC RL026 - LC RL026 - LC RL025 - UC RL006 - UC	AE LI-547 AE LI-548 AE LI-549 AE LI-554 AE FR-540	SG D LEV SG D LEV SG D LEV STEAM GENERATOR D LEV SG D STEAM/FW FLOW/LEV

<u>KEY</u>	<u>PSB ITEM</u>	<u>PANEL</u>	<u>INSTRUMENT ID</u>	<u>CONTROL BOARD LABEL/INFORMATION</u>
19	S/G WR LEVEL			
	A	RL025 - UL RL026 - UL	AE LI-501 AE LR-501	SG A WR LEV SG A & B WR LEV
	B	RL025 - UL RL026 - UL	AE LI-502 AE LR-501	SG B WR LEV SG A & B WR LEV
	C	RL025 - UC RL026 - UL	AE LI-503 AE LR-503	SG C WR LEV SG A & B WR LEV
	D	RL025 - UC RL026 - UL	AE LI0504 AE LR-503	SG D WR LEV SG A & B WR LEV
20	S/G PRESS			
	A	RL026 - LL RL026 - LL RL026 - LL RL026 - UC	AB PI-514A AB PI-515A AB PI-516A AB PR-514	SG A PRESS SG A PRESS SG A PRESS SG A & B PRESS
	B	RL026 - LL RL026 - LL RL026 - LL RL026 - UC	AB PI-524A AB PI-525A AB PI-526A AB PR-514	SG B PRESS SG B PRESS SG B PRESS SG A & B PRESS
	C	RL026 - LL RL026 - LL RL026 - LL RL026 - UC	AB PI-534A AB PI-535A AB PI-536A AB PR-535	SG C PRESS SG C PRESS SG C PRESS SG C & D PRESS
	D	RL026 - LL RL026 - LL RL026 - LL RL026 - UC	AB PI-544A AB PI-545A AB PI-546A AB PR-535	SG D PRESS SG D PRESS SG D PRESS SG C & D PRESS
21	MAIN FEED FLOW			
	A	RL026 - UL RL026 - UL RL006 - UL	AE FI-510A AE FI-511A AE FR-510	STEAM GENERATOR A FW FLOW STEAM GENERATOR A FW FLOW SG A STEAM/FW FLOW/LEV
	B	RL026 - UL RL026 - UL RL006 - UL	AE FI-520A AE FI-521A AE FR-520	STEAM GENERATOR B FW FLOW STEAM GENERATOR B FW FLOW SG B STEAM/FW FLOW/LEV
	C	RL026 - UC RL026 - UC RL006 - UC	AE FI-530A AE FI-531A AE FR-530	STEAM GENERATOR C FW FLOW STEAM GENERATOR C FW FLOW SG C STEAM/FW FLOW/LEV
	D	RL026 - UC RL026 - UC RL006 - UC	AE FI-540A AE FI-541A AE FR-540	STEAM GENERATOR D FW FLOW STEAM GENERATOR D FW FLOW SG D STEAM/FW FLOW/LEV
22	AUX FEED FLOW			
	A	RL006 - UL	AL FI-2A	AFW TO SG A FLOW
	B	RL006 - UL	AL FI-3A	AFW TO SG B FLOW
	C	RL006 - UC	AL FI-4A	AFW TO SG C FLOW
	D	RL006 - UC	AL FI-1A	AFW TO SG D FLOW

<u>KEY</u>	<u>PSB ITEM</u>	<u>PANEL</u>	<u>INSTRUMENT ID</u>	<u>CONTROL BOARD LABEL/INFORMATION</u>
23	STEAM FLOW A B C D	RL026 - UL RL026 - UL RL006 - UL RL026 - UL RL026 - UL RL006 - UL RL026 - UC RL026 - UC RL006 - UC RL026 - UC RL026 - UC RL006 - UC	AB FI-512A AB FI-513A AE FR-510 AB FI-522A AB FI-523A AE FR-520 AB FI-532A AB FI-533A AE FR-530 AB FI-542A AB FI-543A AE FR-540	STEAM GENERATOR A STEAM FLOW STEAM GENERATOR A STEAM FLOW SG A STEAM/FW FLOW/LEV STEAM GENERATOR B STEAM FLOW STEAM GENERATOR B STEAM FLOW SG B STEAM/FW FLOW/LEV STEAM GENERATOR C STEAM FLOW STEAM GENERATOR C STEAM FLOW SG C STEAM/FW FLOW/LEV STEAM GENERATOR D STEAM FLOW STEAM GENERATOR D STEAM FLOW SG D STEAM/FW FLOW/LEV
24	MSIV POSITION A B C D	RL025 - LL RL025 - LL RL025 - LC RL025 - LC	AB HIS-14 AB HIS-17 AB HIS-20 AB HIS-11	SG A MS ISO VLV SG B MS ISO VLV SG C MS ISO VLV SG D MS ISO VLV
25	FWIV POSITION A B C D	RL025 RL025 RL025 RL025	AE HIS-39 AE HIS-40 AE HIS-41 AE HIS-42	SG A FW ISO VLV SG B FW ISO VLV SG C FW ISO VLV SG D FW ISO VLV
26	S/G PORV POSITION A B C D	RL006 - LL RL006 - LL RL006 - LC RL006 - LC	AB ZL-1A AB ZL-2A AB ZL-3A AB ZL-4A	SG A STEAM DUMP TO ATM SG B STEAM DUMP TO ATM SG C STEAM DUMP TO ATM SG D STEAM DUMP TO ATM
27	AFP MDAFP A MDAFP B TDAFP	RL005 RL005 RL005	AL HIS-23A AL HIS-22A AL PI-21A > AL PI-26A	MD AFP A MD AFP B TD AFP DISCH PRESS > TD AFP SUCT PRESS
28	CST LEVEL	RL005 - UC	AP LI-4A	CST LEV
29	CCP A B	RL001 - LR RL018 - ML RL001 - LR RL018 - MR	BG HIS-1A EM-FI-917A BG HIS-2A EM-FI-917B	CCP A Run/Stop CCP A Flow CCP B Run/Stop CCP B Flow
30	NCP	RL001 RL002	BG HIS-3 BG-FI-121A	Normal Charging Pump NCP Flow
31	SI Pump A B	RL017 - UR RL017 - UR RL017 - UL RL017 - UL	EM HIS-4 EM-FI-918 EM HIS-5 EM-FI-922	SI Pump A SI Pump A Flow SI Pump B SI Pump B Flow
32	RHR Pump A B	RL017 - LR RL017 RL017 - LL RL017	EJ HIS-1 EJ-FI-618 EJ HIS-2 EJ-FI-619	RHR Pump A RHR Pump A Flow RHR Pump B RHR Pump B Flow

<u>KEY</u>	<u>PSB ITEM</u>	<u>PANEL</u>	<u>INSTRUMENT ID</u>	<u>CONTROL BOARD LABEL/INFORMATION</u>
33	SI ACC 'A' LEVEL/PRESS	RL018 - UR RL018 - UR RL018 - UR RL018 - UR	EP LI-950 EP LI-951 EP PI-960 EP PI-961	ACCUMULATOR TANK A LEVEL ACCUMULATOR TANK A LEVEL ACCUMULATOR TANK A PRESSURE ACCUMULATOR TANK A PRESSURE
34	SI ACC 'B' LEVEL/PRESS	RL018 - UL RL018 - UL RL018 - UL RL018 - UL	EP LI-952 EP LI-953 EP PI-962 EP PI-963	ACCUMULATOR TANK B LEVEL ACCUMULATOR TANK B LEVEL ACCUMULATOR TANK B PRESSURE ACCUMULATOR TANK B PRESSURE
35	SI ACC 'C' LEVEL/PRESS	RL018 - UR RL018 - UR RL018 - UR RL018 - UR	EP LI-954 EP LI-955 EP PI-964 EP PI-965	ACCUMULATOR TANK C LEVEL ACCUMULATOR TANK C LEVEL ACCUMULATOR TANK C PRESSURE ACCUMULATOR TANK C PRESSURE
36	SI ACC 'D' LEVEL/PRESS	RL018 - UL RL018 - UL RL018 - UL RL018 - UL	EP LI-956 EP LI-957 EP PI-966 EP PI-967	ACCUMULATOR TANK D LEVEL ACCUMULATOR TANK D LEVEL ACCUMULATOR TANK D PRESSURE ACCUMULATOR TANK D PRESSURE
37	ECCS INJECTION OR RECIRC MODE (in the recirc mode if not in the injection mode and ECCS is activated)			<i>ECCS IS IN THE INJECTION MODE IF ANY OF THE FOLLOWING ARE OPEN AND THE PUMP IS RUNNING:</i> RL001 - UC ; BN HIS-112D (CCP A) RL001 - UC ; BN HIS- 112E (CCP B) RL017 - UR ; BN HIS-8806A (SIP A) RL017 - UL ; BN HIS-8806B (SIP B) RL017 - LR ; BN HIS-8812A (RHR PUMP A) RL017 - LL ; BN HIS-8812B (RHR PUMP B)
38	RWST LEVEL	RL018 - UR RL018 - UR RL018 - UL RL018 - UL	BN LI-930 BN LI-932 BN LI-931 BN LI-933	RWST LEV RWST LEV RWST LEV RWST LEV
39	SWYD BUS A VOLTAGE	RL014 - LC		VOLT BUS A
40	SWYD BUS B VOLTAGE	RL014 - LC		VOLT BUS B
41	D/G A	RL015 - UC	NE ZL-28/ NE ZL-29	DG NE01 AT VOLT/ AT FREQ
42	D/G B	RL015 - UC	NE ZL-30/ NE ZL-31	DG NE02 AT VOLT/ AT FREQ
43	NB01	RL015 - LL RL015 - UL	NB EI-1 NB ZL-5	4.16 KV BUS NB01 VOLT 4.16 KV BUS NB01
44	NB02	RL015 - LR RL015 - UR	NB EI-2 NB ZL-6	4.16 KV BUS NB02 VOLT 4.16 KV BUS NB02
45	PA01	RL016 - UL RL016 - UL	PA EI-1 PA ZL-1	13.8 KV BUS PA01 VOLT 13.8 KV BUS PA01
46	PA02	RL016 - UR RL016 - UR	PA EI-2 PA ZL-2	13.8 KV BUS PA02 VOLT 13.8 KV BUS PA02
47	NK01	RL016 - UL	NK EI-1	125 V DC BUS NK01 VOLT
48	NK02	RL016 - UL	NK EI-2	125 V DC BUS NK02 VOLT
49	NK03	RL016 - UR	NK EI-3	125 V DC BUS NK03 VOLT
50	NK04	RL016 - UR	NK EI-4	125 V DC BUS NK04 VOLT

<u>KEY</u>	<u>PSB ITEM</u>	<u>PANEL</u>	<u>INSTRUMENT ID</u>	<u>CONTROL BOARD LABEL/INFORMATION</u>
51	CTMT PRESS	RL018 - UL RL018 - UL RL018 - UC RL018 - UC RL018 - UL RL020 - UL RL020 - UL RL020 - UL	GN PI-934 GN PI-936 GN PI-935 GN PI-937 GN PR-934 GN PI-938 GN PI-939 GN PR-938	CTMT ATMS PRESS CTMT ATMS PRESS CTMT ATMS PRESS CTMT ATMS PRESS CTMT ATMS PRESS CTMT ATMS PRESS CTMT ATMS PRESS CTMT PRESS RECORDER
52	CTMT TEMP	RL020 - UL	GN TR-63	CTMT TEMP RECORDER
53	CTMT HUMIDITY	RL020 - UL RL020 - UL	GN AI-27 GN AI-28	CTMT HUMIDITY CTMT HUMIDITY
54	CTMT RAD	RL020 - UL	GT RR-60	CTMT RAD RECORDER
55	CTMT H ₂ CONC	RL020 - UL RL020 - UL RL020 - UL	GS AI-10 GS AI-19 GS AR-10	CTMT H2 CONCENTRATION CTMT H2 CONCENTRATION CTMT H2 CONCENTRATION
56	CTMT SPRAY PUMP	RL017 RL017	EN HIS-3 EN HIS-9	CTMT SPRAY PUMP A CTMT SPRAY PUMP B
57	CTMT RECIRC SUMP	RL018 - UL RL018 - UR RL020 - UL	EJ LI- 8 EJ LI- 7 EJ LR- 6	CTMT RECIRC SUMP LEV CTMT RECIRC SUMP LEV CTMT RECIRC SUMP LEV RECORDER
58	H ₂ RECOMB.	RL020 - LR RL020 - LC	GS HS-1A GS HS-29A	H2 RECOMBINER A H2 RECOMBINER B
59	SIS	RL018	SA 066-Y SA 066-X	ESF SYS STATUS INDICATION ESF SYS STATUS INDICATION
60	CIS-A	RL018	SA 066-Y SA 066-X	ESF SYS STATUS INDICATION ESF SYS STATUS INDICATION
61	CIS-B	RL018	SA 066-Y SA 066-X	ESF SYS STATUS INDICATION ESF SYS STATUS INDICATION
62	CSAS	RL018	SA 066-Y SA 066-X	ESF SYS STATUS INDICATION ESF SYS STATUS INDICATION
63	CPIS	RL018	SA 066-Y SA 066-X	ESF SYS STATUS INDICATION ESF SYS STATUS INDICATION
64	MSLIS	RL018	SA 066-Y SA 066-X	ESF SYS STATUS INDICATION ESF SYS STATUS INDICATION
65	FWIS	RL018	SA 066-Y SA 066-X	ESF SYS STATUS INDICATION ESF SYS STATUS INDICATION
66	AFAS	RL018	SA 066-Y SA 066-X	ESF SYS STATUS INDICATION ESF SYS STATUS INDICATION
67	CRVIS	RL018	SA 066-Y SA 066-X	ESF SYS STATUS INDICATION ESF SYS STATUS INDICATION
68	FBIS	RL018	SA 066-Y SA 066-X	ESF SYS STATUS INDICATION ESF SYS STATUS INDICATION
69	CSF STATUS		CSF STATUS TREES CSF PROCEDURES	

CALLAWAY PLANT
EMERGENCY PLAN IMPLEMENTING PROCEDURE
EIP-ZZ-00240
TECHNICAL SUPPORT CENTER OPERATIONS

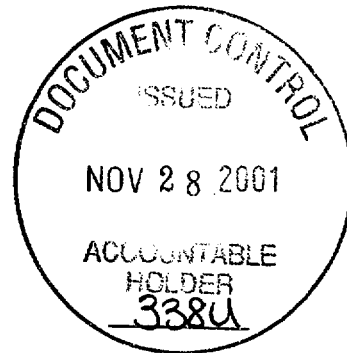
RESPONSIBLE DEPARTMENT EMERGENCY PREPAREDNESS

PROCEDURE OWNER T. W. PARKER

WRITTEN BY T. W. PARKER

PREPARED BY T. W. PARKER

APPROVED BY Warren A. Witt



DATE ISSUED 11-28-01

This procedure contains the following:

Pages	<u>1</u>	through	<u>7</u>
Attachments	<u>1</u>	through	<u>9</u>
Tables	<u> </u>	through	<u> </u>
Figures	<u> </u>	through	<u> </u>
Appendices	<u> </u>	through	<u> </u>
Checkoff Lists	<u> </u>	through	<u> </u>

This procedure has checkoff list(s) maintained in the mainframe computer.

Conversion of commitments to TRS reference/hidden text completed by Revision Number:

Non-T/S Commitments 022

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TECHNICAL SUPPORT CENTER OPERATIONS

1 PURPOSE AND SCOPE

- 1.1 Establishes responsibilities for the Emergency Response Organization, provides guidance and checklists for each coordinator in the Technical Support Center (TSC) during emergency operation of the TSC, including the Operations Support Area (SA).

2 RESPONSIBILITIES

2.1 EMERGENCY COORDINATOR (EC)

- 2.1.1 The Emergency Coordinator has overall responsibility for TSC operations.

2.2 TECHNICAL ASSESSMENT COORDINATOR (TAC)

- 2.2.1 The TAC reports to the EC. The TAC is responsible for directing technical analysis of plant conditions to formulate EAL'S and emergency mitigating recommendations to the EC. Responsible for coordinating Protective Action Recommendations (PAR'S) consistent with plant conditions with the Recovery Manager and Dose Assessment Coordinator in the EOF prior to the arrival of the Protective Measures Coordinator (PMC) and Plant Assessment Coordinator (PAC). The TAC also evaluates Severe Accident Management Guidelines (SAMG's). (COMN 3333)

2.3 ADMINISTRATIVE COORDINATOR (AC)

- 2.3.1 The AC reports to the Emergency Coordinator in the TSC. The AC is responsible for ensuring the completion of the Admin Coordinator checklists. The AC is also responsible for ensuring that technical documents are available, providing food and beverage needs, and ensuring continuity of resources for the On-Site Emergency Response Organization. (COMN 3341)

2.4 TSC (ENS) COMMUNICATOR (TC)

- 2.4.1 The TSC Communicator reports to the EC. He is responsible for manning the ENS Communication Line and relaying technical information to the NRC.

- 2.5 HEALTH PHYSICS COORDINATOR (HPC)
 - 2.5.1 The HPC reports to the Emergency Coordinator in the TSC. The HPC is responsible for assessing on-site radiological conditions, reviewing radiological EAL's, and directing in-plant radiation protection activities. (COMN 3331)
- 2.6 OPERATIONS SUPPORT COORDINATOR (OSC)
 - 2.6.1 The OSC reports to the Emergency Coordinator in the TSC. The OSC assesses plant information from the control room and technical support staff to establish emergency team priorities and direct operation support activities. (COMN 3336)
- 2.7 SECURITY COORDINATOR (SC)
 - 2.7.1 The SC reports to the Emergency Coordinator in the TSC. The SC establishes communications with the Shift Security Supervisor (SSS), assumes overall plant security responsibility, and directs the security force through the SSS. These responsibilities include access control, personnel evacuation and accountability, coordination of any off-site law enforcement agency involvement, and normal and emergency security activities in accordance with the security plan. (COMN 3347)
- 2.8 CHEMISTRY COORDINATOR (CC)
 - 2.8.1 The CC reports to the Technical Assessment Coordinator, and assumes responsibility for plant chemistry operations from the shift supervisor. The Chemistry Coordinator directs primary and secondary chemistry operations, (including post-accident chemistry) and non-radiological environmental monitoring. The CC ensures that the TAC is aware of chemistry activities and provides input to the TSC engineering staff in assessing plant chemistry problems. The CC directs the Rad/Chem Technicians - Chemistry. (COMN 3349)
- 2.9 EMERGENCY TEAM COORDINATOR (ETC)
 - 2.9.1 The ETCs report to the OSC and assist in formation, briefing, direction, and tracking of emergency teams. The Fire Brigade and MERT continue to report to the Shift Supervisor in the Control Room.

2.10 STORES PERSONNEL

- 2.10.1 A member of the Materials Department reports to the OSC and is responsible for obtaining parts, supplies, and materials when needed.

2.11 OTHER TSC STAFF MEMBERS

- 2.11.1 Each TSC coordinator that arrives at the TSC is responsible for starting their Checklist. If the TSC is without power, they should start the TSC diesel per **OOA-UB-EPG70** if it is within their capability.

- 2.11.2 All personnel are responsible for walking through the portal monitor and carding in on the accountability reader as they enter the TSC during a radiological emergency or drill.

<p><u>NOTE:</u> The portal monitor should be response checked as soon as possible by the Health Physics group</p>
--

- 2.11.3 Personnel that leave the Facility should check out with the Security Officer and card out on the accountability reader. If a release has occurred or is likely to occur a HP brief is required.

CARS 199701061

- 2.11.4 The following TSC coordinators are responsible for their attachment to this procedure.

- a) Emergency Coordinator (EC)
- b) Technical Assessment Coordinator (TAC)
- c) Operations Support Coordinator (OSC)
- d) Administrative (Admin) Coordinator (AC)
- e) Health Physics (HP) Coordinator (HPC)
- f) TSC (ENS) Communicator (TC)
- g) Chemistry Coordinator (CC)
- h) Security Coordinator (SC)
- i) Emergency Team Coordinator (ETC)

3 PROCEDURE

3.1 TSC STARTUP

- 3.1.1 Each TSC staff member that arrives at the TSC is responsible for carding in on the accountability card reader, assisting in the facility startup and initiating their checklist.

3.2 TSC OPERATION

- 3.2.1 The Emergency Coordinator ensures that Attachment 1, Emergency Coordinators Checklist, is used as a guide.
- 3.2.1.1 The EC should periodically discuss priorities, habitability of the facility and Site radiological conditions with the HPC. If evacuation of the TSC becomes necessary refer to Section 3.3.
- 3.2.1.2 The EC should ensure TSC personnel receive a periodic plant status update, including priorities, any change to facility habitability or Site radiological conditions.
- 3.2.2 Each TSC coordinator is responsible for completing their Checklist.

3.3 TSC EVACUATION

- 3.3.1 Evacuation of the facility should be considered:
- a) When direct dose rates reach or exceed 5,000 mrem/hour, or
 - b) When cumulative dose reaches or exceeds 4,400 mrem, or
 - c) When iodine concentration reaches or exceeds 1.9 E-5 $\mu\text{Ci/ml}$.
- 3.3.2 Evacuation may be required if power is unavailable or the ventilation system fails.

- 3.3.3 Coordinators should go to the facilities as indicated depending on their availability.
- a) Emergency Coordinator (EC) – to Control Room.
 - b) Technical Assessment Coordinator (TAC) – to Field Office if habitable then Control Room.
 - c) Operations Support Coordinator (OSC) – to Field Office if habitable then Control Room.
 - d) Administrative (Admin) Coordinator (AC) – to EOF.
 - e) Health Physics (HP) Coordinator (HPC) – to Field Office if habitable then Control Room.
 - f) TSC (ENS) Communicator (TC) – to Control Room.
 - g) Chemistry Coordinator (CC) – to EOF.
 - h) Security Coordinator (SC) – to EOF.
- 3.3.4 Coordinators reporting to the Control Room should evaluate minimum staff required to go with them and assign others to the EOF.
- 3.3.4.1 The OSC should take the Emergency Team Coordinators and minimum number of team members.
- 3.4 EVENT CLOSEOUT
- 3.4.1 If the emergency conditions allow the initiation of recovery operations or the closeout of the event, the Emergency Coordinator should contact the Recovery Manager (RM) and discuss implementation of **EIP-ZZ-00260**, Event Closeout/Recovery.
- 3.4.2 TSC personnel continue activities in accordance with this procedure until turned over to the Recovery Organization or closeout is declared.
- 3.5 TSC SHUTDOWN
- 3.5.1 If the TSC is to be shut down, direct the Coordinators to initiate Termination and Shutdown section of their Checklist.
- 3.5.2 The Emergency Coordinator should make preparations with the Shift Supervisor to transfer remaining responsibilities to the Control Room.

- 3.5.3 The Administrative Coordinator assesses the status of the TSC and ensures the following actions have been completed:
 - 3.5.3.1 All functional equipment/supplies have been restored to startup conditions.
 - 3.5.3.2 The entire TSC staff has been relieved of all duties associated with the operation of the TSC.
 - 3.5.3.3 All records generated during the operation of the TSC have been collected.
- 3.5.4 After shifting responsibilities, inform the Shift Supervisor and Recovery Manager that the TSC is shut down.

4 REFERENCES

- 4.1 Callaway Plant Radiological Emergency Response Plan (RERP)
- 4.2 **EIP-ZZ-00101**, Classification of Emergencies
- 4.3 **EIP-ZZ-00102**, Emergency Implementing Actions
- 4.4 **EIP-ZZ-00212**, Protective Action Recommendation
- 4.5 **EIP-ZZ-00213**, Technical Assessment
- 4.6 **EIP-ZZ-00217**, Emergency Response Data System Activation
- 4.7 **EIP-ZZ-00220**, Emergency Team Formation
- 4.8 **EIP-ZZ-00230**, Accountability
- 4.9 **EIP-ZZ-00260**, Event Closeout/Recovery
- 4.10 **OTN-ZZ-00001**, TSC Building HVAC System.
- 4.11 HPCI 96-007, Emergency Response Facility Habitability Guidelines
- 4.12 Severe Accident Management Guidelines

5 RECORDS

<p><u>NOTE:</u> All Facility Logs, SENTRY or MAGNEM screen prints, office memos, notes, etc. should be attached to the Coordinator Checklist and turned in to the Admin Coordinator and/or Emergency Preparedness (EP).</p>

5.1 QA RECORDS

- 5.1.1 Attachment 1, Emergency Coordinator Checklist (File K171.0010)
- 5.1.2 Attachment 2, Technical Assessment Coordinator (TAC) Checklist (File K171.0010)
- 5.1.3 Attachment 3, Operations Support Coordinator (OSC) Checklist (File K171.0010)
- 5.1.4 Attachment 4, Administrative (Admin) Coordinator Checklist (File K171.0010)
- 5.1.5 Attachment 5, Health Physics (HP) Coordinator Checklist (File K171.0010)
- 5.1.6 Attachment 6, TSC (ENS) Communicator Checklist (File K171.0010)
- 5.1.7 Attachment 7, Chemistry Coordinator Checklist (File K171.0010)
- 5.1.8 Attachment 8, Security Coordinator (SC) Checklist (File K171.0010)
- 5.1.9 Attachment 9, Emergency Team Coordinator (ETC) Checklist (File K171.0010)

EMERGENCY COORDINATOR CHECKLIST

Date _____ Time: _____

INITIATION	
<input type="checkbox"/> 1.	<input type="checkbox"/> Card in on the accountability card reader. <input type="checkbox"/> Sign in on Facility Sign-in board. <input type="checkbox"/> Obtain the EC package. <input type="checkbox"/> Clip on Emergency Coordinator badge. <input type="checkbox"/> Review KOA-ZZ- A0002 "COMMAND AND CONTROL GUIDELINES"
<input type="checkbox"/> 2.	Initiate Log Sheet.
<input type="checkbox"/> 3.	Receive briefing by: <input type="checkbox"/> Technical Assessment Coordinator. (EAL Monitoring). <input type="checkbox"/> Shift Supervisor and relieve him as Emergency Coordinator.
<input type="checkbox"/> 4.	Announce assumption of duties to TSC staff.
<input type="checkbox"/> 5.	Review plant/group status with TSC Coordinators: <input type="checkbox"/> Administrative. <input type="checkbox"/> TSC (ENS) Communicator. <input type="checkbox"/> Health Physics. <input type="checkbox"/> Operations Support/Support Area. <input type="checkbox"/> Technical Assessment. <input type="checkbox"/> Chemistry. <input type="checkbox"/> Security.
<input type="checkbox"/> 6.	Ensure the following responsibilities have been transferred from Control Room. <input type="checkbox"/> <u>EAL MONITORING.</u> <input type="checkbox"/> <u>ENS COMMUNICATION.</u> <input type="checkbox"/> <u>PAR MONITORING</u> (if the RM position in the EOF is not manned). <input type="checkbox"/> <u>SAMG Implementation</u> (if applicable).
<input type="checkbox"/> 7.	Make a site-wide announcement that, "The TSC has accepted emergency responsibilities from the Control Room."
<input type="checkbox"/> 8.	Announce the following: "TSC Coordinators assess your manpower needs and request additional personnel from the Admin Coordinator as needed. All excess personnel should assemble in the Operations Support Area and await further instructions."
<input type="checkbox"/> 9.	After assessing manpower needs, instruct all excess personnel to return home or return to work (ALERT) and remain near their phones. Personnel sent home should remain fit for duty and will be contacted concerning shift relief and turnover.

OPERATIONS	
<i>(*) Steps are items that MUST be frequently reviewed</i>	
<input type="checkbox"/> *1.	Periodically update TSC personnel including priorities, habitability status and Site radiological conditions. Note: Priorities should be listed on the Priority Status Board
<input type="checkbox"/> *2.	Continue activities per EIP-ZZ-00102, Emergency Implementing Actions.
<input type="checkbox"/> *3.	Perform periodic briefs with the below individuals concerning on-site activities: <input type="checkbox"/> TSC Coordinators. <input type="checkbox"/> RM. <input type="checkbox"/> SS. <input type="checkbox"/> On site NRC personnel.

EMERGENCY COORDINATOR CHECKLIST

<u>TURNOVER</u>	
<input type="checkbox"/> 1.	Incoming Emergency Coordinator briefed on TSC status and log reviewed.
<input type="checkbox"/> 2.	Recovery Manager and Shift Supervisor informed.
<input type="checkbox"/> 3.	Turnover announced to TSC staff.
<input type="checkbox"/> 4.	Turnover complete _____ Time.
<input type="checkbox"/> 5.	Turnover logged.
<input type="checkbox"/> 6.	Initiate a new checklist CA# 259.

<u>RECOVERY</u>	
<input type="checkbox"/> 1.	Declare Recovery per EIP-ZZ-00260 , Event Closeout/Recovery (if applicable). <ul style="list-style-type: none"> <input type="checkbox"/> Recovery Manager contacted. <input type="checkbox"/> Shift Supervisor contacted. <input type="checkbox"/> Recovery organization established. <input type="checkbox"/> Make site wide announcement.

<u>TERMINATION and SHUTDOWN</u>	
<input type="checkbox"/> 1.	Shutdown TSC (if required). <ul style="list-style-type: none"> <input type="checkbox"/> Coordinators directed to shutdown TSC _____ Time. <input type="checkbox"/> Make site wide announcement.

 Emergency Coordinator Signature

TECHNICAL ASSESSMENT COORDINATOR (TAC) CHECKLIST

Date _____ Time: _____

INITIATION	
<input type="checkbox"/> 1.	<input type="checkbox"/> Card in on the accountability card reader. <input type="checkbox"/> Sign in on Facility Sign-in board. <input type="checkbox"/> Obtain the TAC package <input type="checkbox"/> Clip on the Tech. Assessment Coordinators badge.
<input type="checkbox"/> 2.	Ensure the TSC has power. <input type="checkbox"/> Normal power, (i.e. lights on, power available to computers, etc.). <input type="checkbox"/> No Power. Start the TSC diesel per OOA-UB-EPG70. (An EO may be used if available.)
<input type="checkbox"/> 3.	Shift the following to UPS power: <input type="checkbox"/> Computer link located in the closet near the kitchen. <input type="checkbox"/> PC power supplies CARS 200105972
<input type="checkbox"/> 4.	If outside temperature is approximately 40°F or above, locate panel FIKUB7001 TSC Air Handling Unit Control Panel, just inside the TSC Equipment Room Door and to the left. Place the TSC Air Handling Unit Control Switch CSUB7005 in the <u>COOL</u> position. CARS 200002783
<input type="checkbox"/> 5.	Initiate Log Sheet.
<input type="checkbox"/> 6.	Activate Plant Status Boards from the Plant Computer (Cancel , type PSB , Return) or use keyboard commands on the PC. NOTE: In the event of Plant Computer System failure, refer to EIP-ZZ-00213 , Technical Assessment, for further guidance.
<input type="checkbox"/> 7.	Turn on the Projected Status Boards using the remote control. They are connected to the PCs. Keyboard controls MUST be used for the PCs.
<input type="checkbox"/> 8.	Obtain brief from the SS, STA or other CR personnel. Contact CR via phone as little as possible until the Control Room TSC Liaison is staffed then use the Tech Assessment Line (dial 211), always provide your name and title.
<input type="checkbox"/> 9.	The following should be logged: <input type="checkbox"/> Plant Status/Event Status <input type="checkbox"/> Current EAL(s) <input type="checkbox"/> Equipment Status (equipment out of service?) <input type="checkbox"/> Protective Action Recommendations (PAR) Issued per EIP-ZZ-00212 . <input type="checkbox"/> Dose Assessment contact _____ (name) Inform Control Room when accepting _____ EAL(s) PAR(s) SAMG(s) responsibilities Additional instructions? _____
<input type="checkbox"/> 10.	Activate Emergency Response Data System ERDS per EIP-ZZ-00217 (if not already activated) from the Plant Computer. (Cancel , type ERDS , return type in password NRCERDS , return , select F2 to activate) When ERDS is activated the system displays "Data Transmission in Progress". To return to PSB's , select Cancel , type PSB , Return ; ERDS continues to run unaffected in the background. Inform the ENS Communicator if ERDS cannot be activated (i.e., loss of Plant Computer). CARS 199903613
<input type="checkbox"/> 11.	Assign the Reactor Engineer to perform core damage assessment using EDP-ZZ-00005 .
<input type="checkbox"/> 12.	Begin monitoring Emergency Action Levels (EAL) per EIP-ZZ-00101 .
<input type="checkbox"/> 13.	Brief the Emergency Coordinator, upon his arrival, on the TSC activities.
<input type="checkbox"/> 14.	Place TSC Ventilation System in the Filter Mode per OOA-UB-00005 . (An EO may be used if available.)

<input type="checkbox"/> 15.	Personnel Assessment <div style="margin-left: 40px;"> <input type="checkbox"/> Chemistry Coordinator _____(Name)(1 required) <input type="checkbox"/> Technical Assessment Status Board Keepers _____(Name) (3 required) <div style="margin-left: 400px;"> _____(Name) _____(Name) </div> </div> Engineers Mechanical (1 required)_____ Electrical (1 required)_____ Reactor (1 required)_____ I&C (1 required)_____ Other _____ Other _____
<input type="checkbox"/> 16.	Ensure the Facility clock is synchronized to the plant computer or control room clock
<input type="checkbox"/> 17.	Technical Assessment Group ready to accept responsibilities. Log and inform the Emergency Coordinator.
<input type="checkbox"/> 18.	Discuss any additional support or supplies required with the Admin Coordinator.

<u>OPERATIONS</u>	
<input type="checkbox"/> *1.	Engineering Personnel that leave the Facility should check out with the Security Officer. If a release has occurred or is likely to occur a HP brief is required. CARS 199701061
<input type="checkbox"/> *2.	If personnel are dispatched to another facility a follow up call should be initiated in 15-20 minutes to ensure they arrive safely. CARS 199901904
<input type="checkbox"/> *3.	To obtain Plant Status Boards printout from the Plant Computer terminals (not PCs), Cancel , enter FF ; select the TSC printer, then F1 . To use the color printer depress Ctrl & PF20 simultaneously.
<input type="checkbox"/> *4.	Toggle between PSB1 and PSB2 using the Blue TOUCH areas on the Plant Computer terminals or keyboard commands on the PCs. To obtain area radiation monitors type ARM or PCD – Return .
<input type="checkbox"/> *5.	Inform the EC of any changes in EAL's or of any conditions or trends, that could cause a change in EAL's (i.e. radiation levels, releases, etc.).
<input type="checkbox"/> *6.	Plant Computer turn on codes <ul style="list-style-type: none"> <input type="checkbox"/> ARM Area Radiation Monitors <input type="checkbox"/> PCD Dose Assessment general overview including MET data, Rad data and flow status. <input type="checkbox"/> PCDU Dose Assessment for the Unit Vent, Containment and Aux Building releases. <input type="checkbox"/> PCDRS Dose Assessment for Radwaste and Steam releases.
<input type="checkbox"/> *7.	Upon entry into the Recirculation Phase of RHR perform the following: <ul style="list-style-type: none"> <input type="checkbox"/> Direct the Chemistry Coordinator to obtain 12 hour RWST samples per CSP-ZZ-07540. <input type="checkbox"/> Inform HPC of probable increase in Auxiliary Building dose rates. <input type="checkbox"/> Inform HPC of possible valve leakage back to RWST, which could change dose rates.

<u>TURNOVER</u>	
<input type="checkbox"/> 1.	Incoming Technical Assessment Coordinator briefed on TSC status and review log.
<input type="checkbox"/> 2.	Emergency Coordinator informed.
<input type="checkbox"/> 3.	Turnover announced to Technical Assessment staff.
<input type="checkbox"/> 5.	Turnover complete _____ Time.
<input type="checkbox"/> 6.	Turnover logged.
<input type="checkbox"/> 7.	Initiate a new checklist CA# 261.

TECHNICAL ASSESSMENT COORDINATOR (TAC) CHECKLIST

<u>RECOVERY</u>	
<input type="checkbox"/> 1.	Assess the following: <input type="checkbox"/> a. Plant equipment status <input type="checkbox"/> b. Accident assessment <input type="checkbox"/> c. Control of radiological releases <input type="checkbox"/> d. Ability to resume normal operations
<input type="checkbox"/> 2.	Continue Technical Assessment activities until directed otherwise by the Emergency Coordinator or RM.

<u>TERMINATION and SHUTDOWN</u>	
<input type="checkbox"/> 1.	When directed by the Emergency Coordinator, inform Tech Assessment staff of deactivation.
<input type="checkbox"/> 2.	Ensure equipment and supplies are deactivated and/or stored.
<input type="checkbox"/> 3.	Ensure documents are collected and given to the Admin Coordinator.
<input type="checkbox"/> 4.	Restore PC UPS power supply to LINE.
<input type="checkbox"/> 5.	Restore TSC Air Handling Unit Control Switch to AUTO position.

Technical Assessment Coordinator Signature

TECHNICAL ASSESSMENT COORDINATOR (TAC) CHECKLIST**PLANT COMPUTER GUIDE****COLOR AND DESCRIPTION OF COMPUTER POINT QUALITY CODES**

The Plant Computer System (PCS) assigns a "Data Quality Code" to each field input and calculated variable at the time the point is processed. These quality codes are determined by a series of checks/tests performed during both input-data validation and point processing. A list of the quality codes follows, which is ordered by severity:

1. **UNK** (Blue) – Unknown; point not yet processed. If a point is deleted from processing when SAIPMS is first activated, "UNK" quality code is assigned. This quality code is also displayed for calculated or derived points which have not yet cycled through their first processing period.
2. **DEL** (Blue) – Point has been deleted from processing. If a point was active when the SAIPMS software was activated, and was subsequently disabled from processing, the quality code "DEL" is assigned and no further engineering unit conversion is attempted.
3. **NCAL** (Blue) – Derived point not calculable. This quality code is assigned when it has been determined that insufficient inputs exist to accurately perform the associated equation or calculation.
4. **INVL** (Blue) – Invalid code is generated when a point's defined hardware channel address has not been selected, does not exist, or cannot be accessed. This usually indicates either an invalid hardware channel address, or a failed hardware component. For example, if a defined card slot address does not contain a card, all points assigned to that card are tagged as INVL. Also, if a multiplexer has either failed or been taken offline, all points assigned to that multiplexer are tagged as INVL.
5. **RDER** (Blue) – Sensor Read Error code is generated when no test return/input is received for a point in response to a scan command/output to a valid hardware channel address. This usually indicates a faulty sensor or a multiplexer communication problem. Whenever a quality code of RDER is observed, a hardware error condition exists.
6. **OTC** (Blue) – Open thermocouple.
7. **BAD** (Blue) – The BAD (Bad Scanned Value) code is generated when the "corrected" scanned value (i.e. adjusted for A/D gain and zero-drift error) exceeds the sensor range as defined by a point's "SENSOR LIMIT LOW" and "SENSOR LIMIT HIGH" values in the database.
8. **HRL** (Blue) – Point exceeds high reasonable limits. This condition is tested after engineering unit conversion and if the value exceeds the defined High Reasonable limit, a quality code of "HRL" is assigned.
9. **LRL** (Blue) – Point exceeds low reasonable limits. This condition is tested after engineering unit conversion and if the value exceeds the defined Low Reasonable limit, a quality code of "LRL" is assigned.
10. **REDU** (Cyan) – Point fails redundant point check. If a point has a defined Redundant Point and its current value does not match the defined point within the specified tolerance, it is assigned a quality code of "REDU".

TECHNICAL ASSESSMENT COORDINATOR (TAC) CHECKLIST**PLANT COMPUTER GUIDE**

11. **HIHI**(Red) – Point above high alarm limit. This condition is met when a point's current value has exceeded the defined High Alarm limit, and is assigned a quality code of "HIHI".
12. **LOLO** (Red) – Point below low alarm limit. This condition is met when a point's current value is less than the defined LOW Alarm limit, and is assigned a quality code of "LOLO".
13. **HALM** (Yellow) – Point above high warning limit. This condition is met when a point's current value has exceeded the defined High Operating limit, and is assigned a quality code of "HALM".
14. **LALM** (Yellow) – Point below low warning limit. This condition is met when a point's current value is below the defined Low Operating limit, and is assigned a quality code of "LALM".
15. **ALM** (Red) – State/Change-of-State alarm. Any logical-value point may be alarm monitored against either a defined logical state (i.e., "TRUE", or "FALSE"), or a defined change-of-state condition (i.e., "TRUE" to "FALSE", "FALSE" to "TRUE", or either state change). A quality code of "ALM" is assigned if the point meets any of the above conditions.
16. **SUB** (Cyan) – Substitute value inserted for point. If a substitute value has been entered for a point, the point is assigned a quality code of "SUB", and no further alarm checks or engineering unit conversions are made.
17. **DALM** (Cyan) – Point is deleted from alarm checks. If a point is currently disabled from alarm processing, it is assigned a quality code of "DALM", and no further alarm checks are made.
18. **INHB** (Green) – Point is inhibited from alarm by cut-out point. If a point has an assigned cut-out point, and the current state of the cut-out point matches the specified alarm inhibit state, the point is assigned a quality code of "INHB", and no alarm transaction is generated. While inhibited, the point value WILL continue to update, only the alarm condition is inhibited.
19. **GOOD** (Green) – Point passed all the above checks. The quality code "GOOD" indicates that all defined alarm conditions, states, or values have not been exceeded or met.

Date _____ Time: _____

<u>INITIATION</u>	
<input type="checkbox"/> 1.	<input type="checkbox"/> Card in on the accountability card reader. <input type="checkbox"/> Sign in on Facility Sign-in board. <input type="checkbox"/> Obtain the OSC package. <input type="checkbox"/> Clip on the Operations Support Coordinator badge.
<input type="checkbox"/> 2.	Ensure the TSC has power. <input type="checkbox"/> Normal power <input type="checkbox"/> No Power. Start the TSC diesel per OOA-UB-EPG70 or call for Equipment operator if available
<input type="checkbox"/> 3.	Inform Emergency Coordinator and Admin. Coordinator of your arrival.
<input type="checkbox"/> 4.	Initiate Log Sheet.
<input type="checkbox"/> 5.	Control Room/TSC Liaison contacted and status brief obtained.
<input type="checkbox"/> 6.	Contact Emergency Team Coordinator(s) (ETC) and obtain the Support Area (SA) status.
<input type="checkbox"/> 7.	Personnel Assessment a. Emergency Team Coordinator (s) Mechanical: _____ (name) (1 required) Electrical: _____ (name) (1 required) b. Personnel: Mechanics _____ (number) (2 required) Electricians _____ (number) (2 required) I&C Techs. _____ (number)(This should include the shift Techs) (2 required) Storekeeper _____ (name) (1 required)
<input type="checkbox"/> 8.	OSC Group ready for responsibilities _____ Time. (Also make log entry).
<input type="checkbox"/> 9.	Emergency Coordinator and Admin. Coordinator informed OSC ready.
<input type="checkbox"/> 10.	Discuss any additional support or supplies required with the Admin Coordinator. OSA Support Request may be made utilizing page 3 of 3 of this attachment.

<p align="center"><u>OPERATIONS</u></p> <p align="center"><i>(*) Steps are items that MUST be frequently reviewed</i></p>	
<input type="checkbox"/> *1.	Maintain contact with Control Room/TSC Liaison and keep Emergency Coordinator informed of significant activities/events.
<input type="checkbox"/> *2.	Inform the ETC that Support Area Personnel that leave the Facility should check out with the Security Officer. If a release has occurred or is likely to occur a HP brief is required. CARS 199701061
<input type="checkbox"/> *3.	If personnel are dispatched to another facility a follow up call should be initiated in 15-20 minutes to ensure they arrive safely. CARS 199901904
<input type="checkbox"/> *4.	Ensure Emergency Teams are formed and briefed as needed per EIP-ZZ-00220 Emergency Team Formation.
<input type="checkbox"/> *5.	Ensure Emergency Team Coordinators track Teams as to location and progress of their assignment.
<input type="checkbox"/> *6.	Interface with the Technical Assessment and Health Physics Groups to ensure coordination of activities.
<input type="checkbox"/> 7.	If accountability is declared, provide Security Coordinator with badge numbers of personnel that have been assigned to an emergency team that has left the TSC.

OPERATIONS SUPPORT COORDINATOR (OSC) CHECKLIST

<input type="checkbox"/> *8.	Monitor TSC operating equipment periodically: <input type="checkbox"/> TSC Emergency Diesel. <input type="checkbox"/> TSC Emergency Ventilation Filter System. (NOTE: Be aware of rapidly changing radiation levels during periods of releases.)
<input type="checkbox"/> *9.	Periodically brief the Emergency Coordinator on the priorities that have been established for Emergency Teams. CARS 199903669

<u>TURNOVER</u>	
<input type="checkbox"/> 1.	Incoming OSC Coordinator briefed on OSC status and review log.
<input type="checkbox"/> 2.	Notify the Emergency Team Coordinators of the turnover.
<input type="checkbox"/> 3.	Notify the Control Room/TSC Liaison of the turnover.
<input type="checkbox"/> 4.	Emergency Coordinator informed.
<input type="checkbox"/> 5.	Turnover complete _____ Time.
<input type="checkbox"/> 6.	Turnover logged.
<input type="checkbox"/> 7.	Initiate a new checklist CA# 262.

<u>RECOVERY</u>	
<input type="checkbox"/> 1.	Assess the following: <input type="checkbox"/> Plant equipment status. <input type="checkbox"/> Emergency team status. All Emergency Team work needs to be completed, turned over to Recovery or normal maintenance. <input type="checkbox"/> Ability to resume normal operations
<input type="checkbox"/> 2.	Continue Operations Support activities until directed otherwise by the Emergency Coordinator or RM.

<u>TERMINATION and SHUTDOWN</u>	
<input type="checkbox"/> 1.	Upon direction of the Emergency Coordinator/Administrative Coordinator, contact the Emergency Team Coordinator and inform of deactivation
<input type="checkbox"/> 2.	Ensure OSC/SA equipment and supplies are deactivated and/or stored.
<input type="checkbox"/> 3.	Ensure documents are collected and given to the Admin Coordinator.

 Operations Support Coordinator Signature

OPERATIONS SUPPORT COORDINATOR (OSC) CHECKLIST**OSA SUPPORT REQUEST**

Administrative (Admin.) Coordinator,

The Operations Support Area (OSA) requires the following support. This support is needed (circle one)

Immediately

At next Shift, at _____ (enter time)

POSITION**NUMBER NEEDED**

Operations Support Coordinator

Electrical Emergency Team Coordinator

Mechanical Emergency Team Coordinator

Storekeeper

Mechanical Supervisor

Electrical Supervisor

I&C Supervisor

Mechanical Planner

Electrical Planner

I&C Planner

Electrician

Machinist

Welder

I & C Technician

Electrical Apprentice

Machinist Apprentice

Welder Apprentice

I&C Apprentice

Insulator

Plant Helper

Nuclear Utility Worker

Tool Room Mechanic

Operating Supervisor (Shift Supervisor concurrence obtained)

Equipment Operator (Shift Supervisor concurrence obtained)

ADMINISTRATIVE (ADMIN) COORDINATOR CHECKLIST

Date _____ Time: _____

INITIATION	
<input type="checkbox"/> 1.	<input type="checkbox"/> Card in on the accountability card reader. <input type="checkbox"/> Sign in on Facility Sign-in board. <input type="checkbox"/> Obtain the Admin Coordinators package. <input type="checkbox"/> Clip on the Admin Coordinators badge.
<input type="checkbox"/> 2.	Inform Emergency Coordinator and Technical Assessment Coordinator of your presence.
<input type="checkbox"/> 3.	Initiate Log Sheet.

OPERATIONS CARS 199903558 (*) Steps or items that must be frequently reviewed	
<input type="checkbox"/> 1.	Equipment availability and operation. Check on: <ul style="list-style-type: none"> <input type="checkbox"/> Personal Computers (PC) <input type="checkbox"/> SENTRY Computer (NOTE: Ensure SENTRY is operational) CARS 200105707 <input type="checkbox"/> Telephones <input type="checkbox"/> Copier <input type="checkbox"/> Fax <input type="checkbox"/> Reader/Printer <input type="checkbox"/> Print Plotter
<input type="checkbox"/> 2.	Status TSC Coordinators and keep the EC informed periodically until all positions are filled. <ul style="list-style-type: none"> <input type="checkbox"/> Technical Assessment Coordinator <input type="checkbox"/> Health Physics Coordinator <input type="checkbox"/> Operations Support Coordinator <input type="checkbox"/> TSC (ENS) Communicator <input type="checkbox"/> Chemistry Coordinator <input type="checkbox"/> Security Coordinator
<input type="checkbox"/> *3.	Check status of TSC emergency responders per EIP-ZZ-00200 Attachment 2. DO NOT delete messages until all positions are filled. Distribute copies of Attachment 2 to the coordinators periodically until all positions are filled. Paging or calling using the Emergency phone directory may be required. <ul style="list-style-type: none"> <input type="checkbox"/> Call 64777 to obtain Audix. <input type="checkbox"/> Enter 68400 and the # sign. <input type="checkbox"/> Enter the password which is only the # sign. <input type="checkbox"/> Follow the instructions to listen to the new messages and complete attachment 2.
<input type="checkbox"/> 4.	Personnel Assessment Admin/Clerical Support Personnel (call in as necessary) CARS 199903558 <ul style="list-style-type: none"> <input type="checkbox"/> _____ (name) <u>One NIS Support person should be considered.</u> <input type="checkbox"/> _____ (name) <u>One person to callout/canvass additional support.</u> <input type="checkbox"/> _____ (name) <u>One person for the RM in the EOF.</u> <input type="checkbox"/> _____ (name) <u>One person for the LSC in the EOF.</u> <input type="checkbox"/> _____ (name) <u>One person for the EC in the TSC.</u> <input type="checkbox"/> _____ (name) <input type="checkbox"/> _____ (name) <input type="checkbox"/> _____ (name)
<input type="checkbox"/> *5.	<ul style="list-style-type: none"> <input type="checkbox"/> Monitor the Declaration Status Boards. <input type="checkbox"/> Ensure the Declaration Status Boards are current with the Emergency Classification announcements. CARS 199903558 <input type="checkbox"/> Monitor the receipt of SENTRY Notifications at LAN printer and /or Fax machine and deliver to ENS Communicator.

ADMINISTRATIVE (ADMIN) COORDINATOR CHECKLIST

<input type="checkbox"/> *6.	Personnel that leave the Facility should check out with the Security Officer. If a release has occurred or is likely to occur a HP brief is required. CARS 199701061
<input type="checkbox"/> *7.	If personnel are dispatched to another facility a follow up call should be initiated in 15-20 minutes to ensure they arrive safely. CARS 199901904
<input type="checkbox"/> *8.	<p>Ensure the availability of the following administrative services:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Typing, Word Processing <input type="checkbox"/> Copying, Reproduction <input type="checkbox"/> Fax <input type="checkbox"/> Document control <input type="checkbox"/> Drawings <input type="checkbox"/> Message and mail Delivery <input type="checkbox"/> Telephone Repair and Installation <input type="checkbox"/> Radio Repair (Ameren Telecom.) <input type="checkbox"/> _____ <input type="checkbox"/> _____
<input type="checkbox"/> *9.	<p>If operations become or have the potential to become long term, coordinate with the Logistics Support Coordinator (LSC) in the EOF to address the following items for site personnel.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Contact Security for number of personnel inside the protected area. CARS 199903558 <input type="checkbox"/> Meals ordered and scheduled for the entire organization; personnel informed of meal times and locations. <input type="checkbox"/> Sleeping space arranged for emergency personnel: personnel informed as to location. <input type="checkbox"/> Shift schedule prepared for emergency personnel: appropriate personnel notified. (Use the sign in board and Emergency Telephone Directory to make up roster.) <input type="checkbox"/> Janitorial/waste disposal services arrangements made.
<input type="checkbox"/> *10.	<p>Requests for additional vendor support personnel are to be coordinated with the Logistics Support Coordinator in the EOF.</p> <p>Obtain the following information from the Logistics Support Coordinator:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Name(s) of personnel <input type="checkbox"/> Social Security Number <input type="checkbox"/> Work space requirements <input type="checkbox"/> Estimated time of arrival <p>Contact:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Supervisor Admin, Access Control and arrange for plant access as required. <input type="checkbox"/> Plant helper group to set up desk etc., as required.
<input type="checkbox"/> *11.	<p>Coordinate requests for additional equipment with the Logistics Support Coordinator in the EOF.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Obtain the information from the requesting organization and supply it to the Logistics Support Coordinator: <input type="checkbox"/> Explicit equipment requirements in writing <input type="checkbox"/> Amount needed <input type="checkbox"/> Delivery location <input type="checkbox"/> Person on site to contact
<input type="checkbox"/> *12.	Contact the Logistical Support Coordinator in the EOF and coordinate to provide Administrative Support to the entire organization.
<input type="checkbox"/> *13.	<p>In the event of an accident or illness perform the following: (<i>Note: DO NOT release the individual's name.</i>) Call the control room (CR/TSC Liaison via OSC) and obtain the following. CARS 199903558</p> <ul style="list-style-type: none"> <input type="checkbox"/> Nature of injury or illness. <input type="checkbox"/> Contaminated? <input type="checkbox"/> Transported offsite to doctor, hospital etc. <input type="checkbox"/> If the incident may attract media attention call the JPIC Administrator or Coordinator and supply them with the information.

ADMINISTRATIVE (ADMIN) COORDINATOR CHECKLIST

<u>TURNOVER</u>	
<input type="checkbox"/> 1.	Brief the incoming Admin. Coordinator of the status of administrative activities and review log.
<input type="checkbox"/> 2.	Notify the Admin. and clerical staff of the turnover.
<input type="checkbox"/> 3.	Notify the Emergency Coordinator turnover complete.
<input type="checkbox"/> 4.	Turnover complete _____ Time.
<input type="checkbox"/> 5.	Turnover logged.
<input type="checkbox"/> 6.	Initiate a new Checklist CA# 263.

<u>RECOVERY</u>	
<input type="checkbox"/> 1.	Continue Administrative activities until directed otherwise by the Emergency Coordinator or RM.

<u>TERMINATION and SHUTDOWN</u>	
<input type="checkbox"/> 1.	Upon direction of the Emergency Coordinator, begin terminating operation as follows <ul style="list-style-type: none"> <input type="checkbox"/> Responsibilities transferred to the Control Room. <input type="checkbox"/> All functional equipment/supplies have been restored to startup conditions. <input type="checkbox"/> Records collected, and forwarded to Emergency Preparedness Department. <input type="checkbox"/> Staff relieved of TSC duties.
<input type="checkbox"/> 2.	Control Room informed of TSC shutdown.
<input type="checkbox"/> 3.	TSC shut down Time _____.

 Administrative Coordinator Signature

HEALTH PHYSICS (HP) COORDINATOR CHECKLIST

Date _____ Time: _____

INITIATION		
<input type="checkbox"/> 1.	<input type="checkbox"/> Card in on the accountability card reader. <input type="checkbox"/> Close front door to vestibule and back hallway door from support area. <input type="checkbox"/> Direct incoming traffic to enter through portal monitor <input type="checkbox"/> Sign in on Facility Sign-in board. <input type="checkbox"/> Obtain the Health Physics Coordinators package. <input type="checkbox"/> Clip on the Health Physics Coordinators badge.	
<input type="checkbox"/> 2.	Inform Emergency Coordinator and Admin. Coordinator of your presence.	
<input type="checkbox"/> 3.	Initiate Log Sheet.	
<input type="checkbox"/> 4.	Shift the HPC Plant Computer power supply to the UPS position.	
<input type="checkbox"/> 5.	Personnel Assessment On Shift: <input type="checkbox"/> _____ (name) HP Ops Shift Technician (HPOPS) . Obtain Plant status and radiological concerns. Status setup of Control Room / Field Office in accordance with EIP-ZZ-00102 , Attachment 2. HPOPS Tech to provide HP coverage for On Shift personnel as directed by Shift Supervisor. <input type="checkbox"/> _____ (name) HP Tech Support Technician (HPTS) . Obtain Plant, radiological release, meteorological, and Protective Action Recommendation status from the HPTS Tech performing dose assessment <input type="checkbox"/> _____ (name) Chemistry Technician . The Chemistry Technician is responsible for sampling and analysis as needed to identify the source and magnitude of the emergency. Chemistry Technicians are qualified as Support Area Personnel in the Health Physics group.	
<input type="checkbox"/> 6.	OSA Responders NOTE: Minimum 14 R/C Support Personnel required, (one MUST be a Chemistry Tech.) Assign personnel as they arrive to the TSC based on priorities, <u>not</u> as listed, using the below guidance.	
	1. _____	<input type="checkbox"/> Contact the DAC and discuss the need to Assign R/C Support Personnel to the Rapid Plume Assessment Tech, (RPAT) position if not already dispatched.
	2. _____	<input type="checkbox"/> Assign 2 R/C Support Personnel to FMTs. Request Drivers from the OSC. Brief the teams and drivers in accordance with EIP-ZZ-00211 .
	3. _____	
	4. _____	
	5. _____	<input type="checkbox"/> Assign 2 R/C Support Personnel to the EOF for Dose Assessment Staff and FMT Communicator. Brief with FMTs if personnel are available, but do not delay dispatching.
	6. _____	<input type="checkbox"/> Assign R/C Support Personnel to perform Onsite survey of plume if a release is suspected or in progress, monitor habitability of MAF, Field Office, HPAC, and Control Room as needed.
	7. _____	<input type="checkbox"/> Assign R/C Support Personnel to monitor Plant Computer Screens, maintain Facility Log, and answer phones / radio. Initiate FF Logs and update HPC on any changes approx. every 15 minutes. Wind speed and wind direction should be closely monitored along with In Plant radiological conditions.

HEALTH PHYSICS (HP) COORDINATOR CHECKLIST

8. _____	<input type="checkbox"/> Assign R/C Support Personnel to the report directly to the OSC to support Radiological Briefing and Emergency Teams. Have R/C Techs response check portable instruments, prepare equipment and supplies, and activate the Automated Access Control Station. All prepared radiological briefings should be reviewed with HPC prior to conducting brief of Emergency Team.
9. _____	
10. _____	
11. _____	
12. _____	<input type="checkbox"/> Assign Chemistry Support Personnel to the Chemistry Coordinator (if needed).
13. _____	<input type="checkbox"/> Assign R/C Support Personnel to communicate with the NRC via the HPN line (if requested from NRC).
14. _____	<input type="checkbox"/> Assign R/C Support Personnel to maintain Habitability of TSC per Initiation Step 8 and Operation Step 10 of HPC Checklist. Direct R/C Tech to conduct HP briefs and provide dosimetry for personnel leaving the facility that are not assigned to Emergency Teams (as needed).
<input type="checkbox"/> 7.	Contact Dose Assessment Coordinator (DAC) at EOF (ext. 64999): — Inform DAC of RPAT, FMT, Dose Assessment Staff, and FMT Communicator deployment status.
<input type="checkbox"/> 8.	Establish Radiological Habitability Controls in the TSC: <input type="checkbox"/> Portal Monitor energized and response checked. <input type="checkbox"/> Set up a frisking station using a model 177 Rate Meter, as needed, to backup the portal monitor. <input type="checkbox"/> AMS 3 energized and source checked. <input type="checkbox"/> Control Dosimetry placed at HPC Desk.
<input type="checkbox"/> 9.	Notify Emergency Coordinator that HP is ready for operation and habitability in the TSC is established.
<input type="checkbox"/> 10.	HP Group ready for responsibilities at _____ Time. (Also make log entry)..

OPERATIONS

(*) Steps are items that must be frequently reviewed.

<input type="checkbox"/> *1.	Make Facility Announcement that "All personnel leaving the TSC should check out with the Security Officer prior to leaving the facility." If a release is in progress or anticipated announce "an HP brief will also be required." NOTE: If a release is in progress or anticipated, ensure all personnel dispatched from the TSC are issued Electronic Dosimeters and dose is tracked. The Security Officer will verify HP briefs prior to exit.
<input type="checkbox"/> *2.	If personnel are dispatched to another facility a follow up call should be initiated in 15-20 minutes to ensure they arrive safely. CARS 199901904 .
<input type="checkbox"/> *3.	Review needed protective actions for On Site personnel: <input type="checkbox"/> Ensure dosimetry issued to Security personnel and Security Coordinator briefed on radiological conditions, wind speed and direction. <input type="checkbox"/> Coordinate Assembly and Evacuation actions per EIP-ZZ-00230 with the Security Coordinator. (Assembly and Evacuation are required at a SITE and GENERAL EMERGENCY. When discussing Evacuation routes utilizing MAGNEM, use the 10 Mile projected map.) <input type="checkbox"/> Determine which Care and Reception Center is preferred based on plume direction (if needed). <input type="checkbox"/> Determine need for R/C Support Personnel to monitor Assembly and Evacuation. <input type="checkbox"/> Evaluate restricting access to areas due to release or potential release based on wind direction. <input type="checkbox"/> Evaluate need for Respiratory Protection per HTP-ZZ-01201. <input type="checkbox"/> Evaluate Potassium Iodide (KI) distribution to Emergency Teams, Ops Department and Security personnel per HDP-ZZ-01300.

HEALTH PHYSICS (HP) COORDINATOR CHECKLIST

<input type="checkbox"/> 4.	Obtain Respirator Issue Log and Daily Dose Report from HPACA if LAN and Mainframe Computer are unavailable in the TSC.
<input type="checkbox"/> *5.	Monitor Area Radiation Monitors and appropriate Group 1 & 2 EAL's from EIP-ZZ-00101 , Classification of Emergencies. Report any Area Radiation Monitor that is approaching or has exceeded EAL values to the Technical Assessment Coordinator and EC.
<input type="checkbox"/> *6.	Personnel requiring decontamination should be sent to HPACA. If needed, the back entrance of the TSC can be staged to receive contaminated personnel.

<input type="checkbox"/> *7.	Verify sufficient inventory of the following (additional quantities are available from HPAC or Cal Facility): <ul style="list-style-type: none"> <input type="checkbox"/> Electronic Dosimeters (ED) <input type="checkbox"/> Portable Instruments <input type="checkbox"/> Respirators <input type="checkbox"/> Protective Clothing (PC) <input type="checkbox"/> Consumables (rope, postings, bags, etc.)
<input type="checkbox"/> *8.	Consider preparation of Emergency Dose Extensions for selected Operations Support Area personnel in the event Plant radiological conditions change in accordance with HDP-ZZ-01450 .
<input type="checkbox"/> *9.	Monitor Plant conditions and emergency activities to ensure personnel dose is maintained ALARA. <ul style="list-style-type: none"> <input type="checkbox"/> Monitor and trend Plant Area Radiation monitors, including Control Room and HPACA. <input type="checkbox"/> Radiation levels are expected to increase when Safety Injection recirculation is lined up to Containment. <input type="checkbox"/> Monitor the RWST radiation levels when in the recirculation mode. <input type="checkbox"/> Notify the EC and make announcements to the TSC as Radiological Conditions change. <input type="checkbox"/> Establish radiological postings in the Plant as time and resources allow (MUST be performed prior to Re-entry).
<input type="checkbox"/> *10.	Monitor facility habitability radiological conditions and recommended appropriate protective actions: <ul style="list-style-type: none"> <input type="checkbox"/> Direct dose rate ≥ 600 mrem/hr, inform the EC, and commence monitoring cumulative dose. <input type="checkbox"/> Cumulative dose of $\geq 4,400$ mrem, recommend evacuation of the facility. <input type="checkbox"/> Direct dose rate of $\geq 5,000$ mrem/hr, recommend evacuation. <input type="checkbox"/> Iodine concentrations of $\geq 2.4E^{-6}$ $\mu\text{Ci/ml}$, inform the EC, and commence air sampling to ensure total intake does not exceed 25 rem CDE. <input type="checkbox"/> Iodine concentrations of $\geq 1.9E^{-5}$ $\mu\text{Ci/ml}$, recommend evacuation.
<input type="checkbox"/> *11.	Periodically update the Emergency Coordinator on radiological conditions in the Plant and the status of TSC habitability.
<input type="checkbox"/> *12.	If additional HP support or supplies are needed, coordinate requests through the Admin. Coordinator or Stores person.

TURNOVER

<input type="checkbox"/> 1.	Brief the oncoming HP Coordinator on radiological information, and any protective actions, both recommended and implemented.
<input type="checkbox"/> 2.	Brief the oncoming HP Coordinator on the status of deployed Emergency Teams.
<input type="checkbox"/> 3.	Review HPC Checklist and Log.
<input type="checkbox"/> 4.	Contact Dose Assessment Coordinator in EOF <ul style="list-style-type: none"> — Arrange for FMT turnover. — Obtain weather forecast. — Inform DAC of oncoming relief.

HEALTH PHYSICS (HP) COORDINATOR CHECKLIST

<input type="checkbox"/> 5.	Notify the Emergency Coordinator of the Turnover
<input type="checkbox"/> 6.	Turnover complete _____ Time.
<input type="checkbox"/> 7.	Turnover logged.
<input type="checkbox"/> 8.	Initiate a new Checklist CA# 264.

RECOVERY

<input type="checkbox"/> 1.	Discuss: <ul style="list-style-type: none"> <input type="checkbox"/> Maintaining of personnel exposure ALARA and preventing spread of contamination. <input type="checkbox"/> Survey and Posting Status. <input type="checkbox"/> Need to implement EIP-ZZ-00225, Reentry <input type="checkbox"/> Decontamination activities. <input type="checkbox"/> Need for additional assistance, supplies, or equipment. <input type="checkbox"/> Long term monitoring.
<input type="checkbox"/> 2.	Continue HP operations until directed otherwise by the Emergency Coordinator or RM.

TERMINATION and SHUTDOWN

<input type="checkbox"/> 1.	Upon direction of the Emergency Coordinator/Admin. Coordinator, notify R/C personnel of shutdown.
<input type="checkbox"/> 2.	Turn over any HP support to normal plant staff.
<input type="checkbox"/> 3.	Contact DAC in EOF.
<input type="checkbox"/> 4.	Ensure HP equipment is de-energized, supplies and materials are stored as required. (Note: Gamma 10 should remain on.)
<input type="checkbox"/> 5.	Ensure documents are collected and given to the Admin. Coordinator.
<input type="checkbox"/> 6.	Restore HPC Plant Computer UPS power supply to LINE position.

 HP Coordinator Signature

HEALTH PHYSICS (HP) COORDINATOR CHECKLIST**GAMMA-10 PORTAL MONITOR RESPONSE CHECK**

NOTE: The key for the electronics cabinet is attached to the response source.

1. Verify 110 VAC power to the unit (green operational light is illuminated and no alarms are activated).
2. Set the NIMBIN power supply On-Off switch to ON and ensure the power light is illuminated.
3. Set the HV-2 NIM On-Off switch to on and ensure the Positive LED is illuminated.
4. Verify that a current calibration label is affixed to the Electronics Box and the pot settings, on the box, are the same as identified on the label.
5. Inspect the monitor for physical damage.
6. Verify no alarms are activated. If alarms are activated clear alarms before continuing.
7. Ensure green operational light is illuminated.
8. Pass the Gamma-10 Response Source through the central region of the monitor. The Contamination alarm should activate on the box, a light and buzzer, and a red light on the portal should illuminate.
9. Depress the reset button on the portal. The alarms should clear and the green operational light should remain lit.
10. If the monitor passes this check, initial and date the Pre-Operational Check Sticker affixed to the Electronics Box.

If the monitor fails the Pre-Operational Checks, tag the unit Out Of Service and notify the Health Physics Coordinator. Set up Frisking Station and have personnel entering the building and those already in the building frisk for contamination, if it is expected.

HEALTH PHYSICS (HP) COORDINATOR CHECKLIST**AMS-3 STARTUP AND OPERATION**

This Startup Sequence augments HTP-ZZ-04137, Operation of the Eberline AMS-III. It is designed to be used in an Emergency Response Facility when an HP Operations Technician is not immediately available.

- 1) Connect AMS-3 (monitor) and air sampler to 110 VAC power.
- 2) Ensure monitor and air sampler have current calibration label.
- 3) Inspect the chart paper. Ensure an adequate supply of paper remains. If a RED line appears on the chart paper, notify Health Physics and continue the startup procedure.
- 4) Set monitor ON-OFF switch (located on back of monitor) to the ON position. Allow monitor to warm-up for 5 minutes.
- 5) Set BACKGROUND SUBTRACT switch (located on front of monitor) to the ON position.
- 6) Push in "PUSH TO SET" on bottom left side of monitor and note the alarm setpoint value of 20,000 cpm (this is the first scale mark to the right of the 10^4 scale value).
- 7) Set alarm setpoint to 1000 cpm by adjusting the SET knob while holding in "PUSH TO SET" button.
- 8) Remove sample holder located on the right front side of monitor by loosening the clamp and pulling out on handle.
- 9) Obtain check source from HP E-Kit Locker. Center source over sample holder opening with the recessed side of the source bracket facing the opening.
- 10) The audible alarm and the alarm light should energize (activate). If not notify Health Physics. (The startup procedure should not continue until the problem is resolved).
- 11) Press ACKNOWLEDGE button to silence alarm.
- 12) Verify count rate on chart recorder is as indicated on the response value listed on back of source bracket or a sticker on the instrument.
- 13) Remove check source. Ensure alarm light resets and count rate decreases on chart recorder.
- 14) Remove the filter in the filter holder. (Remove the filter retaining ring on the filter holder, this snaps on the end of the filter holder assembly, and may fit somewhat tight.)
- 15) Obtain a new filter from the HP Emergency Kit Locker and place it on the sample holder with the "ROUGH SIDE" of filter facing upwards.
- 16) Replace retaining ring on the sample holder and insert the sample holder into the sample chamber. Lock the filter holder into place.
- 17) Set the alarm setpoint to 20,000 cpm by adjusting the SET knob while holding in the "PUSH TO SET" button.
- 18) Place the toggle switch on the power cord to the "ON" position. The air sampler pump should start.
- 19) Ensure airflow as indicated on flowmeter is within the tolerance listed on the calibration label (read the flow at the center of the rotometer float ball.) If it is not, notify Health Physics.
- 20) Initial and date the Preoperational Check sticker.

HEALTH PHYSICS (HP) COORDINATOR CHECKLIST**SET-UP AND OPERATION OF THE MODEL 177 RATEMETER**

1. Remove Model 177 ratemeter, frisker probe, detector cable, power cord, and check source from the E-Kit cabinet.
2. Connect detector and power cords, if not already connected, to the Model 177 ratemeter and verify the following switch settings:
 - Front Panel:
 1. On/Off switch in "ON" position.
 2. Volume adjusted to hear audible counts.
 3. Response switch in "slow" position.
 4. Range switch to "X1" scale.
 - Rear Panel:
 1. Alarm set at '5'.
 2. Subtract switch in "Off" position if meter has Subtract Switch.
3. Perform response check as follows:
 - ☐ Ensure instrument has a current calibration sticker.
 - ☐ Set the range switch to the appropriate position and place the detector on the check source bracket.
 - ☐ Verify the response is within the acceptable range as specified on the response value determination form/sticker for that check source.
 - ☐ Check the instrument alarm by adjusting the ALARM SET switch so that it is slightly less than the count rate of the source.
 - ☐ Remove the source from the detector.
 - ☐ Depress the RESET button. The alarm condition should clear.
 - ☐ If the pre-operational checks are satisfactory, complete the attached pre-operational check sticker. If either the alarm or the response check failed, notify the Health Physics Coordinator and obtain an operational ratemeter.
4. Return the check source to the E-Kit cabinet.

TSC COMMUNICATOR (ENS) CHECKLIST

Date _____ Time: _____

INITIATION

<input type="checkbox"/> 1.	<input type="checkbox"/> Card in on the accountability card reader. <input type="checkbox"/> Sign in on Facility Sign-in board. <input type="checkbox"/> Obtain the ENS Communicators package. <input type="checkbox"/> Clip on the Communicators badge.
<input type="checkbox"/> 2.	Ensure the TSC has power. <input type="checkbox"/> Normal power, (i.e. lights on, power available to computers, etc.). <input type="checkbox"/> No Power. Start the TSC diesel per OOA-UB-EPG70 call for Equipment Operator if available.
<input type="checkbox"/> 3.	Shift the PC power supplies to the UPS position.
<input type="checkbox"/> 4.	Emergency Coordinator and Admin Coordinator informed of your presence.
<input type="checkbox"/> 5.	Initiate Log sheet.
<input type="checkbox"/> 6.	Activate Plant Status Boards on the Plant Computer (Cancel, type PSB, Return).
<input type="checkbox"/> 7.	Check dial tone on the ENS line.
<input type="checkbox"/> 8.	Contact Control Room Communicator.
<input type="checkbox"/> 9.	Get a brief as to the status of ENS Communications.
<input type="checkbox"/> 10.	Accept responsibility of ENS Communications per EIP-ZZ-00201, CA-#2517B , or as directed by the NRC.
<input type="checkbox"/> 11.	Discuss any additional support or supplies required with the Admin Coordinator.

OPERATIONS

(*) Steps are items that must be frequently reviewed.

<input type="checkbox"/> 1.	Call the NRC or accept transfer from the Control Room on the ENS line and inform them of your name and that you are communicating from the Callaway Plant Technical Support Center.
<input type="checkbox"/> *2.	Remain on the phone and gather facts as requested by the NRC from individual positions, plant computer or status boards and relay those facts back to the NRC, per EIP-ZZ-00201 . (All notifications transmitted to the State and local agencies should also be given to the NRC Operations Center unless directed otherwise.)
<input type="checkbox"/> *3.	Log information requested and relayed to the NRC as deemed appropriate.
<input type="checkbox"/> *4.	Personnel that leave the Facility should check out with the Security Officer. If a release has occurred or is likely to occur a HP brief is required. CARS 199701061
<input type="checkbox"/> *5.	If personnel are dispatched to another facility a follow up call should be initiated in 15-20 minutes to ensure they arrive safely. CARS 199901904

TURNOVER

<input type="checkbox"/> 1.	Brief the incoming ENS Communicator on the status of NRC requests, awaiting information and review log.
<input type="checkbox"/> 2.	Log turnover.
<input type="checkbox"/> 3.	Turnover complete _____ Time.
<input type="checkbox"/> 4.	Inform Emergency Coordinator or Technical Assessment Coordinator turnover complete.
<input type="checkbox"/> 5.	Initiate a new checklist CA# 265.

RECOVERY

<input type="checkbox"/> 1.	Continue providing the NRC with requested information.
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TERMINATION and SHUTDOWN

<input type="checkbox"/> 1.	When directed, assist with the TSC deactivation.
<input type="checkbox"/> 2.	Ensure area is put into order and logs collected and give to the Admin Coordinator.
<input type="checkbox"/> 3.	Restore PC UPS power supply to LINE.

CHEMISTRY COORDINATOR CHECKLIST

Date _____ Time: _____

INITIATION	
<input type="checkbox"/> 1.	<input type="checkbox"/> Card in on the accountability card reader. <input type="checkbox"/> Sign in on Facility Sign-in board. <input type="checkbox"/> Obtain the Chemistry Coordinators package. <input type="checkbox"/> Clip on the Chemistry Coordinators badge.
<input type="checkbox"/> 2.	Inform Emergency Coordinator and Admin. Coordinator of arrival and ready to assume duties of Chemistry Coordinator. (Make log entry.)
<input type="checkbox"/> 3.	Initiate Log sheet.
<input type="checkbox"/> 4.	Contact on shift Chemistry Tech and ensure <ul style="list-style-type: none"> <input type="checkbox"/> Remind on-duty Chem tech to card in at the Field Office during accountability. <input type="checkbox"/> RERP vehicle is operational and in the parking lot. <input type="checkbox"/> All sample results are updated immediately on Chemistry Data Management System (CDMS). <input type="checkbox"/> Verify CCW is lined up to the SJ panel.
<input type="checkbox"/> 5.	Personnel Assessment Rad./Chem. Chemistry technicians (2 required) <ul style="list-style-type: none"> <input type="checkbox"/> _____ (name), _____ (responsibilities) <input type="checkbox"/> _____ (name), _____ (responsibilities) <input type="checkbox"/> _____ (name), _____ (responsibilities) Rad./Chem. Technicians available. (Chemistry) _____ (number).
<input type="checkbox"/> 6.	Assign an available Chemistry Supervisor to the Hot Lab as needed.
<input type="checkbox"/> 7.	Discuss plant chemistry status with Emergency Coordinator and Tech Assessment Coordinator.

OPERATIONS	
<i>(*) Steps are items that must be frequently reviewed.</i>	
<input type="checkbox"/> * 1.	Review and distribute updated CDMS data as it becomes available: Give a copy of CDMS Data to the: <ul style="list-style-type: none"> <input type="checkbox"/> Tech Assessment Coordinator. <input type="checkbox"/> HP Coordinator. <input type="checkbox"/> Reactor Engineer.
<input type="checkbox"/> *2.	Personnel that leave the Facility should check out with the Security Officer. If a release has occurred or is likely to occur a HP brief is required. CARS 199701061
<input type="checkbox"/> *3.	If personnel are dispatched to another facility a follow up call should be initiated in 15-20 minutes to ensure they arrive safely. CARS 199901904
<input type="checkbox"/> * 4.	Compare latest results of Dose Equivalent I-131 and 100/E bar total specific activity to Group 2 & 4 EAL's per EIP-ZZ-00101 , Classification of Emergencies, and report any EAL that is being approached or exceeded to the Technical Assessment Coordinator and Emergency Coordinator.
<input type="checkbox"/> *5.	Evaluate Secondary Chemistry conditions including Primary-to-Secondary Leakage, SEE CTP-ZZ-02590 and APA-ZZ-01023..
<input type="checkbox"/> 6.	If Post Accident Sample is requested, refer to CTP-ZZ-08100 located in CC Packet.

CHEMISTRY COORDINATOR CHECKLIST

<input type="checkbox"/> *7.	Monitor Post Accident Sampling data and provide recommendations as necessary.
<input type="checkbox"/> *8.	<p>On a SI actuation, SJ sample cooling water will be lost.</p> <p><input type="checkbox"/> Request the Tech to secure high temp samples.</p> <p><input type="checkbox"/> Request Ops to open EGHV69A & B and EGHV70A & B to restore cooling flow as soon as practical.</p> <p>CVCS letdown samples will remain representative as long as letdown flow is available.</p>
<input type="checkbox"/> *9.	Identify additional support (e.g. personnel, off-site analysis) and coordinate requests through the Admin Coordinator.

TURNOVER

<input type="checkbox"/> 1.	<input type="checkbox"/> Brief the incoming Chemistry Coordinator of Chemistry activities and review log.
<input type="checkbox"/> 2.	<input type="checkbox"/> Notify the Tech. Assessment Coordinator of the Turnover.
<input type="checkbox"/> 3.	Turnover complete _____ Time.
<input type="checkbox"/> 4.	Turnover logged.
<input type="checkbox"/> 5.	Initiate new checklist.

RECOVERY

<input type="checkbox"/> 1.	Continue Chemistry activities until directed otherwise by the Emergency Coordinator or RM.
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TERMINATION and SHUTDOWN

<input type="checkbox"/> 1.	Upon direction assist with TSC deactivation.
<input type="checkbox"/> 2.	Ensure Chemistry work area is deactivated and/or stored.
<input type="checkbox"/> 3.	Ensure documents are collected and given to the Admin Coordinator.

 Chemistry Coordinator Signature

SECURITY COORDINATOR (SC) CHECKLIST

Date _____ Time: _____

<u>INITIATION</u>	
<input type="checkbox"/> 1.	<input type="checkbox"/> Card in on the accountability card reader. <input type="checkbox"/> Sign in on Facility Sign-in board. <input type="checkbox"/> Obtain the Security Coordinators package. <input type="checkbox"/> Clip on the Security Coordinators badge.
<input type="checkbox"/> 2.	Inform Emergency Coordinator and Admin. Coordinator of arrival.
<input type="checkbox"/> 3.	Initiated Log sheet.
<input type="checkbox"/> 4.	Personnel Assessment (Call in extra personnel as required). <input type="checkbox"/> Contact the Shift Security Supervisor and obtain number and names of security personnel available for assignment.
<input type="checkbox"/> 5.	Station security officers at the Emergency Response Facilities entrances to log personnel entrance and egress.
<input type="checkbox"/> 6.	Discuss any additional support or supplies required with the Admin Coordinator.

<u>OPERATIONS</u>	
(*) Steps are items that must be frequently reviewed.	
<input type="checkbox"/> *1.	Conduct normal and emergency security activities in accordance with the Security Plan. If the plan cannot be followed, obtain authorization from the EC to deviate (refer to OTO-SK-00001 Attachment 1), in accordance with 10CFR50.54(x)(y) to deviate. Inform the ENS Communicator (1 hour NRC notification). CARS 199901754
<input type="checkbox"/> *2.	Assist the EC in Evacuation and Accountability per EIP-ZZ-00230 .
<input type="checkbox"/> 3.	If accountability is declared, obtain badge numbers of personnel assigned to emergency teams that have left the TSC from the OSC, and report these badge numbers to the SSS.
<input type="checkbox"/> *4.	Personnel that leave the Facility should check out with the Security Officer. If a release has occurred or is likely to occur a HP brief is required. CARS 199701061
<input type="checkbox"/> *5.	If personnel are dispatched to another facility a follow up call should be initiated in 15-20 minutes to ensure they arrive safely. CARS 199901904
<input type="checkbox"/> *6.	Contact the HP Coordinator to determine the affected areas in the case of a release. If Security is to be pulled back from their posts, consider requirements in Step 1, Operations (above).
<input type="checkbox"/> *7.	Ensure that the Security Force has the appropriate dosimetry. Check with the HPC.
<input type="checkbox"/> *8.	Coordinate plant access control.
<input type="checkbox"/> *9.	Contact local law enforcement to coordinate traffic control (i.e. for evacuation routes).
<input type="checkbox"/> *10.	Coordinate personnel evacuation and accountability. (NOTE: Accountability is required within 30 minutes of declaring accountability.)
<input type="checkbox"/> *11.	Coordinate any off-site law enforcement agency involvement.

SECURITY COORDINATOR (SC) CHECKLIST

<u>TURNOVER</u>	
<input type="checkbox"/> 1.	Brief the incoming Security Coordinator of Security activities and review log.
<input type="checkbox"/> 2.	Notify the Emergency Coordinator of the turnover.
<input type="checkbox"/> 3.	Turnover complete _____ Time.
<input type="checkbox"/> 4.	Turnover logged.
<input type="checkbox"/> 5.	Initiate new checklist.

<u>RECOVERY</u>	
<input type="checkbox"/> 1.	Continue Security activities until directed otherwise by the Emergency Coordinator.

<u>TERMINATION and SHUTDOWN</u>	
<input type="checkbox"/> 1.	Upon direction assist with TSC deactivation.
<input type="checkbox"/> 2.	Ensure security equipment is deactivated and/or stored.
<input type="checkbox"/> 3.	Ensure documents are collected and given to the Admin Coordinator.

Security Coordinator Signature

Date _____ Time: _____

<u>INITIATION</u>	
<input type="checkbox"/> 1.	<input type="checkbox"/> Card in on the accountability card reader. <input type="checkbox"/> Sign in on Facility Sign-in board. <input type="checkbox"/> Obtain the ETC package. <input type="checkbox"/> Clip on the Emergency Team Coordinator badge.
<input type="checkbox"/> 2.	Inform Operations Support Coordinator (OSC) of your arrival. If OSC has not reported, initiate OSC Checklist.
<input type="checkbox"/> 3.	Initiate Log Sheet.
<input type="checkbox"/> 4.	Personnel Assessment (number) <div style="text-align: center;">Supervisor / Planner</div> a. Management: _____ / _____ b. Personnel: Machinist/Welders (2 required) _____ (machinist) _____ (welder) Electricians (2 required) _____ Plant Helpers _____ Nuclear Utility Workers _____ I&C _____ Other _____
<input type="checkbox"/> 5.	Open Key Box and Tool Cabinets.
<input type="checkbox"/> 6.	ETC Group ready for responsibilities _____ Time. (Also make log entry).
<input type="checkbox"/> 7.	Operations Support Coordinator informed ETC ready.
<input type="checkbox"/> 8.	Brief and Pre-stage an investigative/search & rescue team for immediate response. Team members can be reassigned after accountability and job priorities are completed.
<input type="checkbox"/> 9.	Discuss any additional support or supplies required with the Admin Coordinator. Page 3 of 3 of this attachment, OSA Support Request, may be used as an aid.

(*) Steps are items that **MUST** be frequently reviewed

- | | |
|------------------------------|---|
| <input type="checkbox"/> *1. | Keep Operations Support Coordinator informed of significant activities/events. |
| <input type="checkbox"/> *2. | Inform Support Area Personnel that leave the Facility that they should check out with the Security Officer. If a release has occurred or is likely to occur a HP brief is required. CARS 199701061 |
| <input type="checkbox"/> *3. | Ensure Emergency Teams are formed and briefed as needed per EIP-ZZ-00220 Emergency Team Formation. |
| <input type="checkbox"/> *4. | Ensure Emergency Teams are tracked to location and progress of their assignment at specified intervals. |
| <input type="checkbox"/> *5. | Interface with the Health Physics Groups to ensure coordination of activities. |
| <input type="checkbox"/> *6. | Ensure log and status board are maintained. |

EMERGENCY TEAM COORDINATOR (ETC) CHECKLIST

<input type="checkbox"/> *7	Periodically brief OSA Support personnel on Plant status and job priorities.
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TURNOVER

<input type="checkbox"/> 1.	Incoming ETC Coordinator briefed on ETC status and review log.
<input type="checkbox"/> 2.	Notify the Operations Support Coordinator of the turnover.
<input type="checkbox"/> 3.	Notify the OSA Support personnel of the turnover.
<input type="checkbox"/> 4.	Turnover complete _____ Time.
<input type="checkbox"/> 5.	Turnover logged.
<input type="checkbox"/> 6.	Initiate a new checklist CA#0262a.

RECOVERY

<input type="checkbox"/> 1.	Assess the following: <ul style="list-style-type: none"> <input type="checkbox"/> Emergency team status. All Emergency Team work is completed or turned over to the Recovery Organization or normal maintenance. <input type="checkbox"/> Able to resume normal operations.
<input type="checkbox"/> 2.	Continue Emergency Team activities until directed otherwise by the Operations Support Coordinator.

TERMINATION and SHUTDOWN

<input type="checkbox"/> 1.	Ensure OSA equipment and supplies are deactivated and/or stored.
<input type="checkbox"/> 2.	Ensure documents are collected and given to the Admin Coordinator.

Emergency Team Coordinator Signature

EMERGENCY TEAM COORDINATOR (ETC) CHECKLIST**OSA SUPPORT REQUEST**

Administrative (Admin.) Coordinator,

The Operations Support Area (OSA) requires the following support. This support is needed (circle one)

Immediately

At next Shift, at _____ (enter time)

POSITION**NUMBER NEEDED**

Operations Support Coordinator

Electrical Emergency Team Coordinator

Mechanical Emergency Team Coordinator

Storekeeper

Mechanical Supervisor

Electrical Supervisor

I&C Supervisor

Mechanical Planner

Electrical Planner

I&C Planner

Electrician

Machinist

Welder

I&C Technician

Electrical Apprentice

Machinist Apprentice

Welder Apprentice

I&C Apprentice

Insulator

Plant Helper

Nuclear Utility Worker

Tool Room Mechanic

Operating Supervisor (Shift Supervisor concurrence obtained)

Equipment Operator (Shift Supervisor concurrence obtained)