CHEMISTRY DIRECTOR

RESPONSIBLE INDIVIDUAL: Chemistry Director

CONDITIONS:

Alert Site Emergency General Emergency

REPORTING: Chemistry Director reports to the Plant General Manager

ACTIONS

1. ACTIVATION

   A. REPORT to Technical Support Center (TSC).

   B. NOTIFY TSC-Director of your presence for accountability.

   C. OBTAIN logbook and procedures from equipment locker.

   D. SET UP a work station at table to the right of the equipment locker.

   E. INITIATE the Chemistry Director's Log.

      1. RECORD assumption of Chemistry Director duties.

      2. MAINTAIN a chronological history of significant events that involve or affect Chemistry's response to the event (Chemistry Team directives, decisions, recommendations, etc.).

   F. ESTABLISH communications with the Chemistry Team Leader in the OSC (see Emergency Response Speed Dial Directory).

      1. DETERMINE status of Chemistry Team availability.

      2. IF sufficient staff is not available to support anticipated needs THEN instruct Team Leader to recall personnel (see the Emergency Response Organization List for names and phone numbers).

   G. ESTABLISH communications with the RAD (when the EOF is manned).

   H. DETERMINE plant status:

      1. RECEIVE a briefing on plant conditions and response actions from TSC Director (may be a personal briefing or center update).

1.H.2. **REVIEW** plant parameters and environmental status information from TSC status boards.

I. **BRIEF** the Chemistry Team Leader on status of the emergency conditions and response actions.

J. **REPORT** readiness of the Chemistry Director function to the TSC Director and/or Plant General Manager.

2. Operation

A. **DIRECT** the actions of the Chemistry Team Leader to obtain required samples and analysis.

1. **REVIEW** Plant status and area and effluent radiation readings.

2. **EVALUATE** the need for effluent or post-accident sampling considering the situation or known release of activity:

> - NOTE -
> A hydrogen grab sample shall be obtained prior to initiating containment purge in order to ensure better accuracy of the containment hydrogen analysis.

a. Containment atmosphere

(1) **IF** the hydrogen analyzer indicates containment hydrogen concentration is approaching 3 volume percent hydrogen, **DIRECT** the Chemistry Team Leader to obtain a hydrogen grab sample.

b. Reactor coolant
c. Main vent or substreams
d. Liquid effluent sources

3. ESTABLISH priorities for required Chemistry Team activities.

> - NOTE -
> Sampling shall be performed without incurring individual exposure in excess of 5 rem whole body and 75 rem extremities.

2.A.4. **REQUEST** effluent or post-accident samples from the Chemistry Team Leader, including time requirements or any special instructions.

5. **RECORD** actions (Chemistry team requests, directives, decisions, recommendations, etc.) in the Chemistry Director's log.

6. **COORDINATE/SUPPORT** specialized sampling (e.g., snow, ice) as requested by the RAD.

7. **RECEIVE** post-sampling debriefs from the Chemistry Team Leader including:

   a. Raw data collected
   b. As-found/as-left conditions and any problems encountered
   c. Team exposure

8. **ANALYZE** sample results.

9. NOTIFY TSC Director, Core Engineers, and the RAD of sample results.

10. **DIRECT** the frequency of sampling/analysis for trending as needed.

B. **PROVIDE** guidance on plant chemistry matters and effluent releases associated with plant evolutions to the Radiological Assessment Director (RAD), the TSC Director and the Plant General Manager.

1. **MONITOR** plant chemistry matters and effluent releases.

- NOTE -
Process monitor RMS data may not be valid with no ventilation flow (e.g., loss of power to respective fans).

   a. **REVIEW** radiation monitor data and status
   b. **REVIEW** plant status

2. **EVALUATE** plant conditions for unsafe chemistry conditions (i.e., explosive mixtures, chemical hazards, unmonitored releases).

2.B.3. **DIRECT** the magnitude and nature of effluent releases be determined.

4. **ADVISE** the RAD, TSC Director and Plant General Manager on chemistry aspects of plant conditions and proposed response actions.

C. **PERFORM** core damage assessment based on radiological analysis of chemistry samples.

1. **SELECT** appropriate sample type(s) for core damage assessment dependent on plant conditions.

2. **DETERMINE** type and degree of reactor core damage using fission product isotopes measured in samples obtained from post accident sampling in accordance with ERPIP 804, Core Damage Assessment Using Radiological Analysis of Samples.

- NOTE -
IF core damage assessment is successful by analysis of samples (action 2.C.2.) THEN assessment by hydrogen analysis (action 2.C.3.) may not be necessary.

3. **DETERMINE** type & degree of reactor core damage using Containment hydrogen analysis in accordance with ERPIP 803, Core Damage Assessment Using Hydrogen.

4. **REPORT** core damage assessment results to the TSC Director, RAD and Plant General Manager.

D. **PERFORM** core damage assessment based on containment radiation levels.

1. IF a LOCA inside containment has occurred and core damage is suspected. THEN OBTAIN containment radiation dose rate from the Containment High Range Radiation Monitors (RI-5317A/B) in R/h.

2. **PERFORM** core damage assessment based on the containment radiation dose rates and the power corrected equilibrium dose rate in accordance with ERPIP 801, Core Damage Assessment Using Containment Radiation Dose Rates.

3. **REPORT** core damage assessment results to the TSC Director, RAD and Plant General Manager.

2.E. **DETERMINE** main steam radioactivity release estimates.

1. **EVALUATE** plant conditions to determine whether a steam generator tube leak or rupture has occurred and main steam was released from the affected steam generator through one or more of the following flowpaths:

   a. Steam Generator Safety Valves
   b. Atmospheric Dump Valve
   c. Auxiliary Feed Water Pump Turbine(s)

2. **PERFORM** main steam radioactivity release estimate calculations in accordance with ERPIP 810, Main Steam System Radioactivity Release Estimates.

3. **REPORT** total estimated release and total estimated release rate to the TSC Director, RAD, RPD and Plant General Manager.

F. **OBTAIN** off-site assistance for sample analysis, if needed.

1. **DETERMINE** whether off-site confirmatory/supplemental analysis is required.

2. **CONTACT** Babcock and Wilcox (B&W) Emergency Control Officer (see the Facility Phone Numbers List) for sample analysis performed off-site.

3. PROVIDE the following information to B&W:

   a. Name and phone number of responsible Chemistry person to whom follow-up communication should be addressed.

   b. Number and type of samples to be shipped (i.e., liquid, gaseous, or cartridge).

   c. Measured radiation levels at the surface and at three feet from the shipping container.

   d. Estimated shipping time, mode of transport, carrier and estimated arrival time in Lynchburg, Va.

2.F.4. **COORDINATE** activities with Radiological Controls personnel performing the shipment.

G. **IF** the TSC becomes uninhabitable **THEN** relocate:

1. **RECEIVE** notification to relocate.

2. **COLLECT** procedures, notebooks, and any data, drawings, or documentation required to perform job functions from the new location.

3. **RECEIVE** briefing on radiological conditions and relocation route from the TSC Director.

4. **UNLESS** directed otherwise, MOVE to the OSC.

5. **DISPLACE** the Chemistry Team Leader in the OSC or **LOCATE** with the TSC Director and staff in the IOB. **ENSURE** TSC Director is informed of your new location and communications arrangement.

6. **REESTABLISH** communications with the RAD.

3. DEACTIVATION

A. COLLECT records and documentation generated during the event.

B. **ROUTE** documentation to the TSC Director.

C. **RETURN** equipment and unused materials to storage and dispose of trash.

ERPIP

REVIEW/APPROVAL

Calvert Cliffs Nuclear Power Plant

EMERGENCY RESPONSE PLAN IMPLEMENTATION PROCEDURE

ERPIP 203

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