

GPU Nuclear

Notes of Telephone Conversation

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|--|-----------------|--|
| Date Feb 05, 91 | Time 1:30 PM | Project/Title Control Rm Habitability @ Oyster Creek |
| To (Name title company department location phone) Mr. Alex Dromerick Sr. Project Manager US NRC | | From (Name title company department location phone) Surendra Tiwari Licencing Engr. GPU Nuclear |

Subject Chlorine Gas Dispersion. - TAC NO. 79648
OYSTER CREEK NUCLEAR GENERATING STATION

Discussion

Dear Mr. Dromerick,

As requested; during our telephone conversation today at 1:30 PM on the Subject; please find the following attached:

① Oyster Creek Procedure 326.1 page 8.0

Note para 5.2.1, which provides instructions for notifying Control Room, while bringing new cylinders on site or while replacing cylinders.

② Oyster Creek Procedure 2000-ABN-3200.33 Pages 2.0 & 3.0

Note para 2.2.1, which provides location of annunciators; and para 2.3.1 that describes operator action.

③ Stone and Webster letter # SW-ESSF-0215 of Feb 21, 89.

Paragraph 2, page 1 of this letter describes the Configuration of detector and chlorine alarm in the control room (Window K-4-E).

Yours Sincerely
Surendra Tiwari

9105010165 910205
PDR ADOCK 05000219
P PDR

Signature

Surendra Tiwari

cc:

D. Masiero, D. Jerko, File

CENTRAL FILE
PUBLIC DOCUMENT ROOM
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N 1028 (01-88)

HFOI
P11

290003

Title
New Radwaste Service Water Chlorination SystemRevision No.
5

- 4.2.3.1 Stop the chlorinator pump by placing the system operating switch in the "off" position.
- 4.2.3.2 Submerge the end of the vent tubing in a glass of water. Continuous bubbling is an indication of a chlorine leak.
- 4.2.3.3 Before removing the chlorinator from the cylinder, close the cylinder outlet valve and start the chlorinator pump by placing the operating switch in the "MANUAL" position, and allow the chlorinator system to operate until the flowmeter ball drops to zero. Then stop the chlorinator pump by placing the operating switch in "off".
- 4.2.3.4 The chlorinator shut-off valve and seat should be cleaned in accordance with Reference 2.1.

5.0 CHLORINE CYLINDER REPLACEMENT

- 5.1 The chlorinator system will automatically shift service to the second chlorine cylinder when the in-service cylinder is completely empty. Only one chlorine cylinder should need replacement at any given time.
- 5.2 Instructions
 - 5.2.1 Notify the Control Room to place the Control Room HVAC System in the full recirculation mode while bringing new chlorine cylinders onsite and while replacing cylinders.

| | |
|---|--------------|
| Title | Revision No. |
| Toxic Material/Flammable Gas Release - No Radiation Involved | 2 |

1.0 APPLICABILITY

This procedure is applicable whenever any of the following toxic materials or flammable/combustible gases have been released. Refer to Procedure 6430-IMP-1300.01, Category "P" for Emergency Plan Applicability. Refer to Station Procedure 126, Category VI for Notifications.

| <u>Toxic Material</u> | <u>Section</u> |
|-----------------------------|----------------|
| Chlorine | 2.0 |
| Acid or Caustic | 3.0 |
| Flammable/Combustible Gases | 4.0 |
| Sodium Hypochlorite | 5.0 |

2.0 CHLORINE GAS RELEASE

2.1 Applicability

This section is applicable if a chlorine leak is detected or reported.

2.2 Indications

2.2.1 Annunciators

| <u>Engraving</u> | <u>Location</u> | <u>Setpoint</u> |
|---------------------|-----------------|-----------------|
| "NRW Chlorine Leak" | K-4-e | 1.0 ppm |

2.2.2 Plant Parameters

None

2.2.3 Other Indications

2.2.3.1 Audio horn in Auxiliary Alarm Module (local panel).

2.2.3.2 Presence of a greenish-yellow gas cloud in the intake structure area.

2.2.3.3 Plant personnel reporting the smell of chlorine

Title
Toxic Material/Flammable Gas Release -
No Radiation Involved

Revision No.
4

2.3 Operator Actions

2.3.1 Place the Control Room ventilation system in the "FULL REC" mode (Panel 11R, System "A" or Panel 9XR, System "B").

2.3.2 Make an announcement that: "There is a possible chlorine leak near the intake, all unnecessary personnel should stay clear of the intake and all personnel should discontinue use of plant-supplied breathing air."

2.3.3 Note wind speed and direction (Panel 14XR).

2.3.4 Dispatch two chem techs/operators to the pretreatment or New Maintenance Building (choice depends upon wind direction) to obtain Scott Air Paks.

2.3.5 IF there is a possibility of coming in contact with liquid or gaseous chlorine,

THEN YOU MUST WEAR RUBBER PROTECTIVE CLOTHING (stored with the Scott Air Paks).

2.3.6 IF a large amount of chlorine gas or a large, dense, greenish-yellow cloud is observed,

THEN report to the Control Room that a large chlorine leak exists.

THEN don the scott air paks and rubber protective clothing before trying to stop leak.

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GPU Nuclear Corporation
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February 21, 1989
J.O.No. 15050.72
SW-ESSF-0215

SWEC TASK NO. 15050.72
TOXIC GAS ANALYSIS
OYSTER CREEK NUCLEAR GENERATING STATION

Reference: SWEC Letter No. SW-ESSF-0212 dated January 17, 1989

This letter describes the results of SWEC's review of the chlorine detection system at the Oyster Creek site.

Based on the information and photographs provided to SWEC by GPUN (A. Baig), a chlorine detector is located inside a steel cabin at ground level at the northeast corner of the intake structure. This cabin (6 ft wide x 4 ft deep x 8 ft high) houses the 150-lb chlorine cylinder which is used for the new radwaste water treatment system. The cylinder is connected to the process equipment via a 3/8-in. header pipe. The chlorine detector, Chloralert by Fischer & Porter Co. (GPUN Tag No. CY-561-1046, manufacturer Model No. 821A00 7U1), is mounted 6 in. above the cylinder with a sensing line of 1-in. dia running down to approximately 2-in. above the floor of the cabin. The detector is set to alarm in the control room (annunciator window K-4-E) when the chlorine concentration inside the cabin exceeds 1 ppm by volume.

The Chloralert has an integral air blower to ensure positive sample air circulation and permits mounting of the detector even outside the chlorine area with sample tubing up to 25 ft in length. The Chloralert is designed, according to Fischer & Porter Co., to operate instantaneously and response time is insignificant. However, SWEC recommends using a loop response time of 5 seconds to allow for any delays in the chlorine plume, resulting from a break, reaching the floor level and further up to the sample-air flowmeter of the Chloralert through the sample tube.

The toxic gas analysis performed by SWEC (Reference 1) determined that for the instantaneous and continuous releases under various meteorological conditions, a toxic gas limit (0.045 g/m³) will be reached in the control room envelope only when the control room air intakes were greater

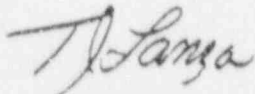
than 13,000 cfm and 1750 cfm, respectively. Further, the minimum times to reach the toxic limit were calculated as 320 seconds (instantaneous releases) and 372 seconds (continuous releases). The operator response times will be 315 seconds and 367 seconds, respectively, after providing an allowance for the loop response time of 5 seconds, and are greater than the minimum operator response time of 120 seconds required by Regulatory Guide 1.78.

SWEC was informed by GPUN (A. Baig) that recent tests conducted by GPUN Startup and Test Group indicate that the total air infiltration into the control room envelope during the full recirculation mode of operation of the control room HVAC system is less than 1750 cfm with the kitchen/toilet fan on or off. The modification design description (MDD-OC-826P, Division II) and the flow diagram (SN 15050.68-EM-02) are being revised to include a procedural requirement for limiting the total air infiltration to a maximum of 1750 cfm.

Based on the above, SWEC recommends revising Oyster Creek plant procedures to instruct control room operator to place the control room HVAC system in the full recirculation mode of operation immediately after a chlorine release condition is alarmed. The operators are not required to put on breathing apparatus.

Please note that the evaluation of the chlorine detection system did not include any redundancy requirements for the detectors or effect on detector operation due to loss of power.

If you have any questions or require additional assistance, please call T. Lanza at (609) 482-3131.



fa T. L. Ott
Project Manager

PRP:SMB

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