



SOLVAY CHEMICALS

INTEROX, FLUORIDES & MINERALS

June 10, 2010

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Re: Reply to a Notice of Violation Amendment

Docket No. 030-29284
License No. 49-19597-02

To whom it may concern:

Pursuant to the provisions of 10 CFR 2.201, Solvay Chemicals, Inc. hereby submits this written reply to a notice of violation amendment. During an NRC inspection completed on April 20, 2010 the inspector identified violations involving failures to: (1) conduct a physical inventory;

1. 10 CFR 20.1301(a)(1) requires, in part, that licensees shall conduct operations so that the total dose equivalent to individual members of the public from the licensed operation does not exceed 0.1 rem (1mSv) in a year.

10 CFR 20.1302(b)(1) requires that the licensee shall show compliance with the annual dose limit in 10 CFR 20.1301 by demonstrating by measurement or calculation that the total dose equivalent to the individual likely to receive the highest dose from the licensed operation does not exceed the annual dose limit.

Solvay Chemicals, Inc. failed to demonstrate compliance by measurement or calculation that the total dose equivalent to the individual likely to receive the highest dose from our operation did not exceed the annual dose limit. Solvay Chemicals, Inc. failed to perform a complete dose assessment of the total dose equivalent to individual members of the public on site from the sea land container located on our facility that houses 23 sources containing milli curie quantities of cesium 137 and cobalt 60.

Solvay Chemicals, Inc. performed a member of the public study and identified net cumulative totals (milli rems) for an exposure period. Solvay Chemicals, Inc. demonstrated by measurement and calculation that the total dose equivalent to any individual likely to receive the highest dose did not to exceed the hourly dose limit. However, Solvay Chemicals, Inc failed to provide a calculation to ensure individual members of the public did not exceed the annual dose limit. The direct cause of the violation involved not performing an annual dose calculation to determine individual members of the public did not exceed the annual dose limit. In taking prompt and comprehensive corrective action a survey instrument was used to identify the cause of the elevated dose. With the results of the survey reading we have made provision to surround the sea land container with a perimeter chain link fence of 10 feet. This will prevent access from individuals of the public to be exposed to elevated dose limits. The chain link fence is scheduled to be completed by August 15, 2010. There are certain parts and equipment to be purchased as

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part of this project that will take some time to get it on site. Temporarily, the sea land container has a barricade installed around the perimeter consisting of 10 feet in any direction. This barricading practice is used at Solvay Chemicals, Inc. to prevent unauthorized entry into hazardous areas by individuals of the public. The barricade is also tagged with proper "Do Not Enter" tagging preventing further unauthorized entry into the area. A calibrated survey meter was used at the 10 feet perimeter to detect any radiation levels. The reading of the survey meter at the 10 feet outer perimeter was 0.05 mR/h.

An amendment to the reply notice of violation listed above is requested to further clarify our comprehensive corrective actions, which include;

- A background radiation survey was conducted at several locations around our facility and away from any radiation sources. During our background radiation survey, the survey meter indicated a reading from 0.03mR/h to 0.05mR/h. Taking an average background radiation reading would indicate 0.04mR/h would be a reasonable gross reading in determining the net radiation reading at the sea / land container site. If a member of the general public (plant worker not associated with the sources were present for an entire work day, every day for a year, that would be 2080 hours / year so the annual exposure would be 2080 hours / year x (0.04mR/h minus 0.05mR/h = **0.01mR/h**) = 20.8mR/yr. The value of 20.8mR/h would not exceed the 100mR/yr limit reference in 10 CFR 20.1301.
- The location of the sea / land container in relation to employee or general member of the public radiation exposure would indicate that 2080 hours per year is not a realistic number. The average time an employee or a member of the public would spend in this location would average five (5) hours per year which would further lessen the exposure limit even further.
- A perimeter fence is also located 360 degrees around our facility and is operated by a control desk which is operational 24 hours a day 7 days a week. A general member of the public would not have immediate access into our facility due to controlled access.
- Due to the altitude at our facility the average cosmic background radiation present averages between 102mR/yr to 104mR/yr. This, of course, contributes to the aforementioned background readings.

If you have any questions or need further clarification, please advise. I can be reached at 307-872-6616 or by e-mail curtis.nelson@solvay.com.

Respectfully,



Curtis Nelson
Senior Safety Representative
Radiation Safety Officer

cc:

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