

May 15, '95

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SLR

### 2.12.10 Authorized Release Guidelines for Hydrofluoric Acid

The applicant has requested authorization to release hydrofluoric acid manufactured by the dry conversion process for unrestricted commercial use providing the following three conditions are met:

1. A representative sample of each batch of hydrofluoric acid product shall be obtained and analyzed for uranium;
2. A batch shall be no larger than 20,000 liters; and
3. The activity of any batch released for unrestricted use shall be less than or equal to 3 picocuries per milliliter ( $\leq 3$  pCi/ml).

SPC requested this authorization in an amendment application dated June 28, 1994, and supplement dated July 7, 1994. The environmental and public health risks of the release of the hydrofluoric acid were evaluated and described in an Environmental Assessment prepared by NRC, and a Finding of No Significant Impact (FONSI) was published in the Federal Register on September 14, 1994, (59 FR 47190). NRC determined that doses to a maximally exposed individual resulting from release and subsequent commercial use of the acid will not exceed the standards for protection against radiation set forth in 10 CFR Part 20 and are ALARA. NRC staff has, therefore, determined that this authorization is acceptable under the commitments of the license.

### 2.12.11 Authorized Release Guidelines for Ammonia

In a letter dated August 10, 1995, SPC proposed a uranium release limit for ammonium hydroxide ( $\text{NH}_4\text{OH}$ ) to be sold under the renewed license. This limit is 0.05  $\mu\text{g/l}$  of 5% enriched uranium, equivalent to 0.13 pCi/g. This ammonium hydroxide could be used in the manufacture of ammonia fertilizer, or for other industrial uses.

The risk to human health was evaluated for the use of this ammonium hydroxide as fertilizer. Information on application rates for ammonia were obtained from the Walla Walla Farmers Co-op in Kennewick, Washington. An average application of nitrogen is 30-40 pounds per year, injected into the top 3" of soil. SPC's ammonium hydroxide is approximately 25 percent by weight; therefore a farmer would apply 120-160 pounds per year to obtain the desired amount of nitrogen. If this amount of ammonium hydroxide were applied to a field every year for the 10-year term of the license, and if none was removed via leaching, erosion, or other natural processes, it would result in a concentration of less than  $2 \times 10^{-5}$  pCi/g in the top 3 inches of soil. Offsite uranium concentrations in soil, as reported in Hanford Site Environmental Report 1993, Table A.19, indicate averages of 0.75, 0.73, and 1.29 pCi/g for 1988, 1989, 1990, respectively. The increase in uranium concentration caused by application of fertilizer containing 0.05 ppm uranium, under the conservative assumptions indicated, is insignificant compared to these background concentrations. 1600 lbs total  
9424 pCi

Based on the above analysis, the NRC staff has determined that sale of ammonium hydroxide containing not more than 0.05 ppm uranium will have no significant effect on public health or the environment and is therefore acceptable.