



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PENNSYLVANIA 19406-1415

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OCT 31 1991

License No. 37-23341

Docket No. 030-20934

MEMORANDUM FOR: Malcolm R. Knapp, Director
Division of Radiation Safety
and Safeguards, RI

FROM: Ronald R. Bellamy, Chief
Nuclear Materials Safety Branch

SUBJECT: INS CORPORATION CONFIRMATORY ACTION LETTER

We have received a copy of the Confirmatory Action Letter (CAL) from Region II to INS Corporation (INS) regarding actions that INS will take to prevent the accumulation of licensed radioactive material in the Portsmouth, Virginia wastewater treatment facility due to discharges from the INS nuclear laundry. As you know, INS also has a nuclear laundry in Royersford, Pennsylvania which releases effluent in accordance with 10 CFR 20.303 to the Royersford Wastewater Treatment Facility (RWTF). These discharges have resulted in accumulation of formerly-licensed material at the RWTF. Oak Ridge Associated University (ORAU) has assisted Region I in studying the effects of this accumulation since 1986. INS local and corporate representatives have cooperated fully with Region I, ORAU, and the RWTF to evaluate the contamination and to develop methods of reducing the amount of radioactive material in their effluent. Due to the licensee's continued cooperation and the progress achieved to date, we have concluded that a CAL is not needed with respect to the INS Royersford facility at this time. With regard to the items in the Region II letter, the following actions have been taken:

1. INS Corporation personnel collect and analyze samples of sludge from the RWTF. No accompaniment for maintenance activities is required at this time, since effluent from the laundry reaches the RWTF by gravity flow, and no pumping stations are located between INS and the RWTF. We are not aware of any increased radiation levels except at the RWTF. Radiation levels have been measured at the RWTF by ORAU and the NRC. In 1989 and 1990 radiation levels were 80 microrentgens per hour on contact with containers of mechanically dewatered sludge. Radiation levels around the RWTF were difficult to distinguish from background except inside the secondary digester, an area which is not entered frequently, until 1990 when a reed bed was planted for biological dewatering of sludge. Radiation levels up to 100 microrentgens per hour were measured on contact with the reed bed in 1991. Region I has placed TLD monitors around that facility and continues to evaluate the results.

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2. INS Corporation installed a new filter system at the Royersford laundry in the spring of 1987. Based on analyses of their effluent, this filter system removes nearly all particulates greater than 20 microns. INS Corporation has evaluated and is evaluating a number of ways to further filter or otherwise reduce their releases to the sewage system. In September 1991, they began a pilot test of a reverse osmosis filtration system and an ultra filtration system. They plan to submit a report of the results of this test to Region I by the end of November 1991. Region I will consider whether additional action is necessary when this report and a description of the licensee's plans are received.
3. Region I does not plan to negotiate reduced concentration limits for releases to the sewage system by INS in Royersford. Based on the results of the ORAU studies and the quarterly discharge summaries provided to Region I by INS, it appears that the total quantity of radioactive material released by INS is accumulated at the RWTF regardless of the reductions in concentrations in the effluent made by INS during the past four years. Therefore, we do not believe that further reduction in concentration will prevent accumulation of formerly-licensed material at the RWTF. Rather, we are encouraging and INS is attempting, greater reductions in the total quantity of radioactive material released to the sewer. Region I may consider requiring INS to maintain releases in compliance with the limits in new Part 20, if they are prepared to be in compliance with all other revisions of Part 20.

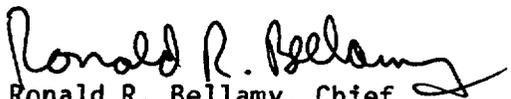
In addition, INS has applied to the Pennsylvania Department of Environmental Resources for a permit to discharge its effluent directly to the river. If this is allowed, their discharges will have to meet the limits of 10 CFR 20.106. Currently, the INS Royersford facility License No. 37-23341-01 requires them to investigate and evaluate the possibility of corrective action for any discharges to the environment which exceed 10% of the 20.106 limits.
4. INS Royersford has made several changes during the past four years which have improved their method of taking representative samples. They have also improved their method of analysis of samples. In addition, they collect a quarterly composite for analysis by their corporate laboratory and a contract laboratory. Results of these analyses are summarized and reported to Region I for each quarter. Additional changes are not necessary at this time.
5. INS continues to work with the RWTF, and continues to investigate methods to reduce the amount of radioactive material in the effluent. Based on results of analyses of the RWTF sludge and liquid effluent, it is not clear that solubility of material in the INS releases affects the accumulation at the RWTF. The licensee believes most of the radioactive material in their effluent is soluble and most appears to accumulate at RWTF.

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6. Region I has not yet required INS to decontaminate the RWTF and associated systems. We have discussed the possibility of INS taking responsibility for disposal of all contaminated sludge at the RWTF. INS considered this approach and has rejected it for a number of reasons, including the problems associated with disposition of a material that may contain accumulated hazardous substances not generated by INS. INS does continue to provide monitoring and training assistance to the RWTF as requested by Region I or the Borough of Royersford. We are not sure that NRC has the legal authority to compel INS to remove the material.

Region I is continuing to work with the Borough of Royersford and the Pennsylvania Department of Environmental Resources to monitor the accumulation of radioactive material at the RWTF, and to evaluate methods of disposal for sludge containing radioactive material.

Finally, we noted that the CAL refers to "licensed radioactive material in the City of Portsmouth wastewater treatment facility." Our understanding of the memorandum from Hugh L. Thompson to Region I, dated January 27, 1989 (attached), is that radioactive material is assumed to be the responsibility of the licensee so long as the material is under their control, and that when a discharge which complies with 10 CFR 20.303 reaches a sanitary sewer which is not under the licensee's control, it is no longer covered by the license. Therefore, it is no longer "licensed material." Since we have been basing a major portion of our approach to the INS situation on this idea, if our understanding is incorrect, we would like to have further discussions on this issue.


Ronald R. Bellamy, Chief
Nuclear Materials Safety Branch

Attachment:
Memorandum "Regulation of a Radioactive Material
Subsequent to Discharge from a Licensed Facility"
dated January 27, 1989.