APR. 08 1991

Docket No. 030-20934 License No. 37-23341-01

Interstate Nuclear Services
ATTN: Michael J. Bovino, CHP
Manager, Health Physics and Engineering
295 Park Street
P.O. Box 51957
Springfield, Massachusetts 01151

Dear Mr. Bovino:

Subject: Releases of Radioactive Material to the Sewer in Royersford, Pennsylvania

This letter refers to the telephone conversation between you and Frank Costello and Betsy Ullrich of this office on February 7, 1991 and to your letter dated February 8, 1991, concerning discharges of radioactive material from your facility in Royersford, Pennsylvania.

As you know, at the NRC's request, Oak Ridge Associated Universities (ORAU) has been studying the impact of discharges of licensed material by the INS Royersford facility to the Royersford Wastewater Treatment Facility (RWTF). The studies clearly demonstrate that radioactive material released by INS is re-concentrated at the RWTF. In the past, disposal of sludge from the RWTF has not posed a radiological safety problem. However, the RWTF is altering its process to reduce the total volume of solid matter which will require final disposal. This results in a higher concentration of radioactive material per unit volume of sludge.

The new process raises concerns regarding radiation safety. The smaller volumes of sludge will be accumulated over longer periods. The end result is a larger, more concentrated inventory of radioactive material. Only 6 months after initiating the process, radiation levels above background are already detectable near the surface of the sludge. Continued processing of sludge in this way may well result in radiation levels that will require some areas within the RWTF to be restricted for the purposes of radiation safety. In addition, the concentration of radioactive material in the sludge may prevent disposal of the sludge to facilities which could normally receive it.

IE:07

Reduction in the concentration of radioactive material in the INS discharges to either the sewer or the unrestricted areas will be required by January 1, 1993 due to the revision of 10 CFR 20 which is currently in press. Using your average annual concentration of released isotopes for 1990, we estimate your discharge would exceed the new sewer discharge limits. The enclosure to this letter compares the old and new limits.

Due to these changes, the NRC is considering what steps are needed to reduce radionuclide releases from INS or prevent the accumulation of radioactive material in the RWTF. In support of our activities, we wish to better understand the plans and intentions of INS with regard to these matters.

The INS Royersford facility has reduced the concentration of radioactive effluent released to the sewer in the past, and we understand you believe it possible to further do so in the future. In your letter dated February 8, 1991 you described a new ultra filter system you plan to test, and other planned improvements to the water discharged to the sewer. Please tell us when or if INS plans to implement this system, how much of a reduction you expect, and the minimum reduction which you are confident is attainable?

We note that the NRC grated an amendment to License No. 37-23341-01 for the INS Royersford facility, approving the release of effluent directly to the river. We understand that INS believes it can beet the lower release limits for discharge to the river. However, release to the river also requires approval from the Pennsylvania Department of Environmental Resources. We understand that they have no record of having received an application from INS for such a permit. Would you advise us of you plans in this area?

Finally, the NRC requests a written statement from INS describing plans to limit the discharge of radioactive material to the RWTF. We also request that INS consider and describe what actions it is willing to take at the RWTF to reduce the concentrations of radioactive material and/or exposures to individuals. We would appreciate a written answer to this request within sixty (60) days.

Thank you for your cooperation in this matter. If you have any questions concerning this letter please call me at (215) 337-5252.

Sincerely,

Original Signed By:
John D. Kinneman

John D. Kinneman, Chief
Nuclear Materials Safety Section B
Division of Radiation Safety
and Safeguards

Enclosure:
Comparison of Limits in Old
and New 10 CFR 20.

cc:
Public Document Room (PDR)
Nuclear Safety Information Center (NSIC)
Commonwealth of Pennsylvania

Interstate Nuclear Services
ATTN: H. Barnes, Plant Manager
North Third Avenue
Royersford, Pennsylvania 19468

Commonwealth of Pennsylvania
Department of Environmental Resources
ATTN: Ivna Shanbaky
1875 New Hope Street
Norristown, Pennsylvania 19401

Commonwealth of Pennsylvania
Department of Environmental Resources
ATTN: Margaret Reilly
P.O. Box 2063
Harrisburg, Pennsylvania 17120

bcc:
Region I Docket Room (w/concurrences)
E. Ullrich, RI
J. Kinneman, RI
M. Miller, RI

RI:DRSS	RI:DRSS	RI:DRSS	NMSS	RI:DRSS
Ullrich/bj	Kinneman	Bellamy	Glenn	Knapp
03/27/91	03/26/91	03/26/91	03/26/91	03/ /91

K Smith 3/22/91 for

Comparison of Limits in Old and New 10 CFR 20

Average Concentration Allowed in Discharges to Unrestricted Areas
(microcuries per milliliter)

Isotope	Old Part 20	New Part 20	Old/New
Cobalt-60	50 E-6	3 E-6	17
Strontium-90	3 E-7	5 E-7	0.6
Cesium-134	90 E-7	9 E-7	10
Cesium-137	20 E-6	1 E-6	20

Average Concentration Allowed in Discharges to Sewer
(microcuries per milliliter)

Isotope	Old Part 20	New Part 20	Old/New
Cobalt-60	100 E-5	3 E-5	33
Strontium-90	10 E-6	5 E-6	2
Cesium-134	300 E-6	9 E-6	30
Cesium-137	40 E-5	1 E-5	40