INTERSTATE NUCLEAR SERVICES
A SUBSIDIARY OF [illegible]

MS-16
K4

May 12, 1994

Mr. Walter Pasciak
Industrial Applications Section
Division of Radiation Safety and Safeguards
U.S. Nuclear Regulatory Commission, Region I
475 Allendale Road
King of Prussia, PA 19406-1415

RE: Radioactive Materials License Number: 20/03529/01 (Renewal)
Docket Number: 030-04632
Control Number: 117925

Mr. Pasciak:

This letter is in response to your letter dated April 21, 1994, which requests additional information for 12 specific questions associated with our license application submitted March 29, 1993, and a follow-up letter dated November 17, 1993. On the following pages are the answers to your 12 questions. I have restated each question to help expedite the review process.

If you have any more questions with the license application, please do not hesitate to contact me or Kent Anderson, a member of my staff, at (413) 543-6911.

Sincerely,
INS Corporation

Michael Bovino, CHP
Manager, Health Physics & Engineering

cc: D. Barrows
J. Badey
file
G. Bakevich
Bruce Ernst, ANI

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Item #12

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Response to NRC Letter Dated April 21, 1994

For License #20-03529-01

On April 27, 1994 INS received a letter from the NRC requesting additional information for 12 specific questions associated with the INS license application submitted March 29, 1993, and a follow-up letter dated November 17, 1993. Outlined below and on the following pages is the information requested. Each question is restated to help expedite the review process.

1) NRC Question: "It appears from your letter that a possible change of ownership has occurred. 10 CFR 30.34(b) requires NRC consent prior to a change of ownership. Provide the following information...."

INS Response: On our letter dated April 1, 1993 the letterhead was "INS, A DIVISION OF UNIFIRST CORPORATION" and on November 17, 1993 the letterhead was "INS, A SUBSIDIARY OF UNIFIRST". The classification as a subsidiary is more correct, therefore we simply changed the letterhead. There was absolutely no other change regarding ownership. INS remains 100% held by UniFirst Corporation.

2) NRC Question: "Page 3, Item 5.5 of your application states that you want to be authorized for "Miscellaneous Radiation Standards from the National Institute of Standards and Technology." Page A7, Item V.C.1. states that only exempt sources will be used at the Springfield Facility. Please confirm whether you wish to continue the authorization of item 5.5."

INS Response: We don't wish to continue authorization of item 5.5. We have re-reviewed the requirements for exempt sources. Please replace page 3, dated 04/01/93, with a new page 3, dated 05/11/94 which is attached. Our intent with Item 5.5, miscellaneous radiation standards, was to control the amount of exempt source material used for instrument calibration. We have modified the statement and moved the exempt source material to a broader category on page 3, Items 5.1 through 5.4.

3) NRC Question: "Please note that your application contains numerous references to the old 10 CFR Part 20. Except if noted later in this deficiency letter or specified in your letter dated November 17, 1993, you need only change the section referenced in your procedures to the current 10 CFR 20."

INS Response: As we identify an old 10 CFR 20 reference in our license application or in our procedures for the Springfield facility, we will make the appropriate revisions.

4) NRC Question: "10 CFR 20.1101 requires, in part, that each licensee develop, document, and implement a radiation safety program commensurate with the scope and extent of licensed activities and sufficient to ensure compliance with the provisions of this part. Page D1, Item B.1 of your letter describes yearly occupational dose limits to workers. The ALARA program from your application was deleted. Please submit for our review an ALARA program with Action Levels and what actions will be taken by your radiation safety staff should those levels be exceeded.

INS Response: INS has a corporate ALARA policy. Outlined below is our policy which is posted at all facilities. In addition, our TLD vendor provides a immediate notification report that lists INS personnel who exceed 100 mR/qtr. This report is reviewed by corporate HP&E. Only a few of our plants have positions and personnel that might exceed 100 mR/qtr. Since the amount of dose received is directly proportional to the amount of hours worked and the levels of radioactivity on the materials processed, we do not believe that these actions should be incorporated into the license. Normally, upon receipt of such notice, the plant manager and a member of the corporate HP department confer and seek a root cause and remedy if possible. In addition to the posted policy, a facility-wide ALARA review is conducted as part of the corporate audit program. Recommendations to improve the ALARA program are made and incorporated into plant improvements whenever possible.

COPY OF ALARA POLICY IMPLEMENTATION LETTER

February 1, 1993

To: All Plant Managers

From: Mike Bovino - Manager, Health Physics and Engineering

Re: ALARA Policy

Enclosed is the INS Corporate ALARA policy which must be posted in an area where it can be viewed by your employees. ALARA is a concept that is required as part of each license and is specifically required by Regulatory Guide 8.10.

ALARA concepts, though not *explicitly* stated, have always been embodied throughout the Company health physics program. Posting of the attached policy sheet will ensure that your plant meets the Company commitment to comply with the intent of ALARA regulations.

Thank you for your cooperation.

COPY OF POSTED ALARA PROGRAM NOTICE

INTERSTATE NUCLEAR SERVICES
CORPORATE ALARA POLICY

INS is committed to keeping each employee's exposure to radiation As Low As is Reasonably Achievable, "ALARA". This means that Management and all employees should make every reasonable effort to provide a radiologically safe work place by keeping radiation exposures as far below the limits specified by law as possible.

INS' commitment to keep worker dose ALARA is addressed as elements in a sound radiation protection program. These include:

1. Employee training on all elements of radiation protection.

2. Annual audit(s) of plant health physics program by the Corporate Health Physics Department (includes ALARA inspections).

3. A Company policy of strict compliance with requirements contained in the radioactive materials license, regulations and procedures.

4. Employment of qualified individuals to implement the radiation safety program.

5. Empowerment of the plant management to enforce safe plant operation.

6. Modification of plant and equipment where practicable to reduce worker dose.

7. Continual review of work practices by plant management.

It is everyone's responsibility to work safely and ensure that doses are kept ALARA. You are encouraged to discuss ideas you may have to lower worker dose with plant management or with the Corporate Health Physics and Engineering department at 1-800-344-3824.

5) NRC Question: "10 CFR 20.2003 requires, in part, that licensees discharge licensed material into the sanitary sewer if the material is readily soluble in water. Please provide for our review the methodology that you use to show that the licensed material that is discharged to the sanitary sewer is soluble."

INS Response: In May, 1991 the NRC published a revised Part 20 which removed "readily dispersible" [insoluble non-biological material] from the type of material that

may be released to the sanitary sewer system. Prior to issue of that revised Part 20, INS contracted with a analytical laboratory to perform a solubility study of the wastewater discharged from several of our facilities. These tests included the Springfield facility wastewater. The tests were completed as follows:

1) A sample was counted for beta/gamma prior to any filtration then counted again after passing through a 20, 10, 1, 0.45 and finally 0.1 micron filter.

2) After each filtration the filtrate was specifically monitored for Zn-65, Co-60, and Cs-137 along with Ni-63 and Fe-55. The remaining residue at each step was also analyzed for Cs-137, Zn-65 and gross beta.

Based on the results, the Deputy Lab Director provided the following statement: "It appears that some activity may have been mechanically removed in the first filtration due to the initial high total suspended solids but all activities remain essentially the same on all successive filters which would lead you to believe that the contaminants are present in solution and not as a suspended solid." Based on this information, we believed that our wastewater discharge was in full compliance with the intent of 10 CFR 20.2003(a)(1).

However, because the revised Part 20 did not contain an operational definition of solubility, we wrote several letters in 1991 and 1992 to the NRC headquarters and Region I and II requesting further definition of the term "soluble".

Obtaining a definition from the NRC was not prompt and as our facilities and Company expanded, decisions had to be made in regard to wastewater treatment technologies. As an example, during 1992 and 1993 we spent in excess of $375,000 to upgrade the Springfield facility wastewater treatment capabilities with the dual purpose of improving plant efficiency, and reducing radioactive waste generation. All of the resources were spent without a specific regulatory definition in-hand.

In early February of 1994, we received the NRC Information Notice 94-07, titled "Solubility Criteria for Liquid Effluent Releases to Sanitary Sewerage Under the Revised 10 CFR Part 20." With this new information we will continue to evaluate/re-evaluate our process to ensure compliance. We believe that we will emulate the original method used (stepped filtration) as described above.

6) NRC Question: "Please note that there is a typographical error on Page D1 of your letter dated November 17, 1993. The footnote should read, "These limits are taken from 10 CFR 20.1201."

INS Response: Attached is an updated page D1, dated 05/12/94, with the typographical error corrected. Please replace page D1 dated 11/17/93.

7) NRC Question: "Page D5, Item D.1. of your letter states that you will issue film or TLD badges and exchange them quarterly. Please submit a revised copy of your procedures stating that film badges shall be exchanged monthly and TLD badges shall be exchanged quarterly."

INS Response: Attached are updated pages D5 and D6, dated 05/12/94. Please replace pages D5 and D6 dated 11/17/93. The new pages delete all reference to the use of film badges. INS has not and will not use film badges.

8) NRC Question: "Page D12, Item H.1 of your letter and page E3, Item A.4.d. of your application should also include the prohibition against the application of cosmetics in restricted areas. Please confirm."

INS Response: We have reviewed the regulations and can find no specific reference to the prohibition of cosmetics application in restricted areas. While we admit that it is a good practice, we believe that prohibition of specific actions such as this borders on redundancy. Therefore, please provide the regulatory requirement that prohibits cosmetics application, and we will reevaluate your request.

9) NRC Question: "Page D13, Item H.2 states that training will be conducted by a qualified employee or a consultant. Please provide the minimum qualification of the person who would provide training for our review."

INS Response: The definition of a "qualified employee or a consultant" is defined in INS procedure TR-001 titled "Radiation Worker Training Procedure." Specifically identified in Section 6.0, ADMINISTRATIVE REQUIREMENTS, Subsection 2 the procedure states:

> 6.2 Instructors for this training shall meet the following minimum requirements.
>
> 6.2.1 Only the Plant Manager, Assistant Plant Manager, Radiation Safety Officer (RSO), or Radiation Protection (Health Physics) Technician shall act as instructor. In addition, any person named on the applicable facility's Radioactive Material License may serve as instructor.
>
> 6.2.2 Instructors shall have at least one year of related industry experience.
>
> 6.2.3 Instructors shall be approved by the facility RSO.

6.2.4 If the facility Radioactive Material License specifies different instructor qualifications, then the facility license requirements should be followed.

If you would like to review the procedure, please let me know. This information is supplied as requested. However, we do not believe that these requirements should be incorporated into the license. To do so would limit procedural revision flexibility necessary for the continual improvement process.

10) NRC Question: "Page G1, Item B of your application states, "In the event of any emergency, the Emergency Coordinator will notify State, local and insurance authorities as necessary." Please confirm that federal authorities shall also be notified as necessary."

INS Response: Attached is an updated Appendix G, pages 1 through 5, dated 05/12/94. As required, federal authorities were added to the notification statements. Please replace Appendix G, dated 04/01/93 with the revised pages.

11) NRC Question: "Page G4, of your application is entitled "Richland, WA" and does not appear to go completely with the rest of the application. Please confirm whether this page should be replaced and, if so, submit the revised page for our review."

INS Response: Attached is an updated Appendix G, pages 1 through 5, dated 05/12/94. As noted, all references to Richland, WA were removed. Deficiency was corrected while correcting deficiency #10.

12) NRC Question: "In order to ensure the safe interim storage of radioactive waste, the NRC is now requiring that licensees who generate waste to either: 1) dispose of all waste within two years of the date it is generated; or 2) implement a waste storage plan. Please indicate which option you plan to utilize. If you intend to store waste until a disposal facility becomes available, you must submit a waste storage plan which contains all the information identified in the enclosed Information Notice 90-09."

INS Response: Citing the continued uncertainty of the national radioactive waste scene, we are hesitant to commit to a full waste storage plan at this time. Therefore, we will make every effort to dispose of all waste generated within two years of the date it is generated. If, as time progresses it becomes apparent that we will have to store waste until a disposal site becomes available, we will submit a license amendment which incorporates the information necessary in 90-09.

Item 5 - Radioactive Material

	Radioactive Material	Physical Form	Possession Limit
5.1	Any radioactive material	Contaminated garments and other launderable items, equipment, machinery, protective devices and associated decontamination wastes. Miscellaneous Exempt Radiation Standards (MRSs) from the National Institute of Standards & Technology.	2.5 Curies
5.2	Any Source material	" "	100 kilograms
5.3	Any Special Nuclear Material	" "	350 grams as U-235, 220 grams as Plutonium, or any combination where total grams of U-235/350 + total grams of Plutonium/220 is ≤ 1.
5.4	Any radioactive material atomic number 84 - 102 except SNM.	" "	10 millicuries

Item 6 - Purpose(s) For Use

The radioactive materials listed in 5.1, 5.2, 5.3 and 5.4 are in the form of: (1) Contaminated garments, plastics, PVC and other launderable items; (2) contamination on INS' equipment, machinery, protective devices; (3) resulting decontamination wastes; and (4) exempt sources used for instrument calibration. Operations include the transportation of contaminated articles, decontamination by laundry, or other industrial cleaning processes, and testing and monitoring of items.

APPENDIX D

Radiation Safety Program

A. General

The radiation safety program has been developed primarily to minimize ingestion, inhalation, or other modes of entry of radioactive material into the body since exposure from external sources is typically low. Good housekeeping is strictly enforced.

The decontamination facility is restricted to everyone other than trained operating personnel and escorted visitors. Details of Plant Security are specified in Section I of this appendix.

B. Maximum Permissible Exposures and Concentrations

1. Occupational dose to adults shall be controlled to the following dose limits[1]:

   a. An annual limit, which is more limiting of -

      (i) The total effective dose equivalent being equal to 5 rems; or

      (ii) The sum of the deep-dose equivalent and the committed dose equivalent to any individual organ or tissue other than the lens of the eye

   b. The annual limits to the lens of the eye, to the skin, and to extremities, which are

      (i) An eye dose equivalent of 15 rems, and

      (ii) A shallow dose equivalent of 50 rems to the skin or to any extremity.

[1]: These limits are taken from 10 CFR 20.1201.

D. Personnel Monitoring

1. Radiation Dosimeters

All employees and visitors who enter the radiation control area under such circumstances that they are likely to receive a dose in excess of 10 percent of the limits specified in Appendix D(B)(1) herein are issued a TLD badge.

Badge services are provided by a NVLAP certified dosimetry lab. The exchange frequency shall be quarterly. Badges are kept with a control badge in a low-background area.

Self-reading pocket dosimeters will be issued to visitors who enter the portions of the restricted area which are posted radiation areas. TLD badges may be used in lieu of pocket dosimeters.

2. Bioassay Program

a. New Employees

All new employees who are issued a TLD badge will receive a baseline gross gamma chest count. If uranium is being received during the quarter in which they are hired, a fluorometric analysis of urine for uranium will be performed for employees who work in a contaminated area.

b. During Operations

Personnel who are issued a TLD badge shall be gross gamma chest counted quarterly, in a low background area with a 2 by 2 inch sodium iodide crystal. Background radiation may be reduced with shielding as an option. This measurement is based on the most probable intake being inhalation, most restrictive isotope Co-60, acute inhalation at the beginning of a quarter, and on transfer models and parameters provided by ICRP 30. If a gross gamma chest count indicates $\geq$2E6 dpm, an isotopic whole body count will be performed.

Urinalysis will be performed quarterly, on employees who work in contaminated areas, following any quarter in which uranium contaminated articles were received or processed. If fluorometric analysis for uranium indicates a concentration exceeding 5 micrograms per liter, resampling will be performed to verify activity.

In case of fire or any emergency in which airborne levels exceed the applicable DAC values, the RSO will prescribe chest counts for gamma emitters and urinalysis for uranium within two working days following the emergency for all affected individuals.

c. Terminating Employees

All employees who have worn a TLD badge shall receive a termination gross gamma chest count. Employees who have work in a contaminated area during a quarter that uranium was received will receive a termination urinalysis. Refusal to participate will be documented.

d. Procedures

All gross gamma chest counting will be performed in compliance with procedures specified by and approved by the Manager of Health Physics and Engineering. Fluorometric analysis of urine samples for uranium will be performed by a qualified vendor.

e. Action Levels

The purpose of the bioassay program is to periodically affirm the effectiveness of the facility's practices in controlling the internal uptake of radioactive material. As inhalation is the predominant mode of entry of radioactive material into the body, bioassay results are a reflection of the air handling and sampling system. That system is primarily relied on for personnel protection, with the bioassay program and internal action levels serving as a check on the air handling processes. Action levels for mixed fission products are derived from the models and retention functions provided in Report 30 of the International Commission on Radiation Protection and Measurements (ICRP). Should any isotopic whole body counts exceed the applicable action level, the employee will not be permitted to work in areas where loose contamination is present until the matter is investigated and an acceptable plan is developed.

APPENDIX G

I. Emergency Plan

A. Emergency Coordinator:

1. The Plant Manager will serve as the Plant's Emergency Coordinator.

2. The Assistant Plant Manager, or an employee designated by the Plant Manager, will serve as the Alternate Emergency Coordinator.

3. The Emergency Coordinator (or alternate) is the responsible individual during a plant accident or incident. This person will make sure that this emergency plan is followed and that all personnel are familiar with it before an accident occurs. This person will be responsible for protecting the health and safety of plant and emergency response personnel, protecting INS property, and filing incident reports.

4. The Emergency Coordinator will invite the Springfield Fire Department to tour the facility annually. A floor plan of the plant that shows the location of the gas shut-off valve and the electrical panel will be provided to the fire department. Anytime significant equipment changes or plant modifications occur, the floor plan will be updated and provided to the fire department.

5. The Emergency Coordinator will complete an Accident/Incident Form whenever an emergency occurs.

B. Reporting Requirements:

1. In the event of any emergency, the Emergency Coordinator will notify Federal, State, and local regulatory agencies, and insurance authorities as necessary.

C. Personnel Injuries:

1. The Emergency Coordinator must determine if any life-saving assistance is necessary. Treat accident victim's injuries first, regardless of the possibility of contamination. The levels of radiation present at the plant are never life-threatening.

2. The Emergency Coordinator will phone for medical assistance if necessary. The phone number for the hospital ambulance service shall be posted on the emergency phone numbers list kept near the telephone. If necessary, relate to the hospital that the victim is potentially contaminated with low-levels of radioactive materials if the accident occurs in an area where this is likely. Notify the appropriate Federal, State and Local Emergency Response agencies, if necessary.

3. If the presence of radioactive material on the victim is suspected, and if time is available, survey the injured person with a personnel frisker. If radioactivity is detected and injuries will not be aggravated, remove the contamination. For contamination on or around wounds, rinse the contaminated area with warm water. Be sure to rinse in a manner where contamination will not enter the wound (i.e., at an angle away from the wound). If possible remove contaminated clothing.

4. Lightly bandage any open wounds after rinsing, if appropriate.

5. If the accident occurs in a contaminated or potentially contaminated area, and the victim's injury permits moving him, carry individual to the boundary of the area to prevent emergency response personnel from entering a contaminated area.

6. Offer any assistance to emergency response personnel or the hospital.

D. Fires:

1. As outlined in above, treat all life-threatening situations first.

2. Evacuate all personnel from the area of the fire or the plant, depending upon the severity of the fire.

3. For small, controllable fires outside of dryers, use the proper extinguisher to attempt to extinguish the fire. If it can be brought under control there is no need to notify the local fire department.

4. For fires which cannot be controlled:

   i. Immediately notify the fire department. All nonessential personnel should exit the plant to a predesignated waiting area.

ii. Inform the fire department that very low-levels of radioactive materials are involved.

iii. Locate a hot line upwind from the plant to control spread of contamination by persons entering and exiting the restricted area.

iv. Monitor all personnel and equipment crossing the hot line using normal frisker limits.

v. If possible, perform decontamination of equipment that is contaminated using soap and water.

5. For fires located in a dryer:

i. Turn the dryer tumbler off using the red STOP button and leave the main power to the dryer on.

ii. The sprinkler system will automatically energize, soaking all materials in the tumbler. Manually turn the sprinkler to the on position.

iii. Turn the lint collector blowers off to prevent fire from spreading to the ductwork.

iv. Do not open the dryer door. With the power on, jog the dryer to distribute the water for 30 seconds to 1 minute.

v. Remove the fire hose from its holder and don leather gloves. Aim the hose and be prepared to soak the fire immediately upon opening the dryer door. Open the door and soak the clothes.

vi. Make a thorough inspection of the entire exhaust duct and HEPA filter system to detect any smoldering lint that may be present.

6. Complete and file an Accident/Incident Form.

Chest count all employees who were exposed to smoke.

E. Loss of Radioactive Material:

1. The Plant RSO must be notified immediately (if different from the Emergency Coordinator).

2. Determine the nature or activity of the lost material(s).

3. Initiate a search for the material(s).

4. If not found after a reasonable search, contact the Operations Manager or Corporate HP&E. As required, Corporate HP&E will make the appropriate notifications.

5. Complete a detailed report surrounding the events of the loss.

F. Floods or Unplanned Releases:

1. Locate the source of the release, and if possible, terminate it.

2. If necessary, notify the pertinent emergency response agencies.

3. For floods in which potentially radioactive water flows outside the facility:

   i. Take soil samples (about 1 pound) and send for gamma spectroscopy.

   ii. If the concentration levels in the soil exceed 7 pCi/g total above natural background, or 5.0 pCi/g above natural background for a single isotope, remove the soil and place in drums or LSA boxes for disposal as radioactive waste.

4. For floods in which water is confined to the plant:

   i. Remove water.

   ii. After drying, smear the floor and equipment affected to determine if decontamination is necessary.

iii. Use normal plant limits to determine if decontamination is necessary.

5. Take any corrective actions necessary to prevent reoccurrence.

6. Complete and file a copy of the Accident/Incident Form.

CONVERSATION RECORD

TIME: 11:00 AM

DATE: 6/7/94

TYPE

☐ VISIT ☐ CONFERENCE ☒ TELEPHONE

Location of Visit/Conference:

☐ INCOMING ☒ OUTGOING

NAME OF PERSON(S) CONTACTED OR IN CONTACT WITH YOU	ORGANIZATION (Office, dept., bureau, etc.)	TELEPHONE NO.
Michael Bovino	INS Corporation	(413) 543-6911

ROUTING

NAME/SYMBOL	INT

SUBJECT

Additional information beside Telephone Defueling (20-03529-01)

SUMMARY

① I informed Mr Bovino that we would not list exempt sources on an NRC specific license. (Item 2 of letter May 12, 1994)

② Mr Bovino stated that personal effects are not allowed per corporate policy in the radioactive work area. Adding the "prohibition against the application of cosmetics" would entail making over the video training sessions and other work books being redundant. I agreed to "withdraw" this defueling.

ACTION REQUIRED

Document

NAME OF PERSON DOCUMENTING CONVERSATION: Steven Courtemanche

SIGNATURE: Steven Courtemanche

DATE: 6/7/94

ACTION TAKEN

SIGNATURE | TITLE | DATE

50271-101

☆ U.S. G.P.O. 1983-381-526/8346

CONVERSATION RECORD

OPTIONAL FORM 271 (12-76)
DEPARTMENT OF DEFENSE

Item #13

OFFICIAL RECORD COPY NRC 10 7/7925

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