

JAN 08 1985

Docket No. 030-22060  
Control No. 03234

Nuclear Energy Services  
ATTN: John R. May  
Radiation Safety Officer  
1000 Shelter Rock Road  
Danbury, Connecticut 06810

Gentlemen:

This refers to your application for a byproduct materials license dated November 1, 1984, and to subsequent telephone conversations between myself and Mr. Francisco Trejo of your staff. In order to continue our review, we will need additional information. General questions are raised in the following paragraphs. Specific questions relating to the content of your application follow in numbered paragraphs.

We understand that you are requesting a license for the following activities: 1) Repair and/or decontamination of NES- and customer-owned equipment at facilities not covered by a license. 2) Brokering and shipping of radioactive waste. 3) Decontamination and decommissioning of facilities whose license has expired. With regard to item 2, it is not the policy of the NRC to issue licenses to contractors to perform work at facilities already covered by a license. Therefore, any brokering or shipping of radioactive waste would have to be done under the license of the person who generated the waste. We can license you to perform this activity only with respect to waste generated by the activities in items 1 and 3, if performed under your own license. The requested possession limits appear excessive for uses 1 and 3. Please specify separate possession limits for each of the uses requested, and clarify your intended uses.

The application contains many typographical errors. While most are innocuous, in at least three cases noted below, the error appears to reverse the intended meaning. You paraphrase regulations in such a way as to change their meaning. Your application also contains information in the form of recommendations and general statements of good practice. Since your application will be incorporated by reference in your license, it is important that it reflect your program accurately, and contain procedures in enforceable form. Specific comments on your application follow:

1. In Document 82A8001, on page 12 you state that your Radiation Safety Committee will meet once a year. We feel that, in order to fulfill its function, a Radiation Safety Committee must meet

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at least quarterly. Please confirm that your committee will meet at least that frequently.

2. On page 10 of Document 82A8002, you state that the "minimum frequency for instrument calibration is twelve (6) months." Please clarify.
3. With regard to your training program, essential subjects such as basic physics of radiation, biological effects of radiation, and mathematics of radiation, do not appear to be covered. Some of this material does appear in Document 82A8006, but it is not clear how that document is used in your program. It is not referenced in the section on training. Please explain.
4. With regard to your bioassay program (Document 82A8003, paragraph 2.3, pp. 21 and 22) please clarify the criteria the Radiation Safety Officer (RSO) will use to decide who will be monitored, and the method and frequency of assays. In Section C of this paragraph, the action levels are too high. Please supply more conservative levels, or justify the levels stated. With regard to Section D, the current version of 10 CFR Part 20, and Appendix B to Part 20, are based on the calculational models in ICRP 2 and 10A. The limits in Appendix B are based on a 50-year dose commitment, with the entire dose commitment assigned to the year in which the exposure was received. Please submit procedures that conform. Since 10 CFR 20.401(b) requires that records of surveys to comply with sections of Part 20 be kept in the same units used in Part 20, and since the limits in Section 20.103 are expressed in exposure to the maximum permissible concentration (MPC) for a certain number of hours, results of bioassays, which are surveys to show compliance with Section 20.103, must be expressed in MPC-hours. Please submit amended procedures.
5. With regard to your procedures for controlling high radiation areas (Section 3.1 A 4, p. 29, Document 82A8003), these procedures appear to violate 10 CFR 20.203(c)(3) in that it is never permissible to control a high radiation area in such a way that an individual is prevented from leaving. The word "boundries" is ambiguous in this context. High radiation areas must have positive controls over entry. Please submit amended procedures.
6. With regard to Section 3.3 A 2, you have made general statements about how contamination can be controlled. This is unacceptable. We need positive statements detailing how you will control contamination. A statement that one of several alternatives will

be used is acceptable, but words like "normally" are not. Please submit procedures for contamination control.

7. It is not clear from your respiratory protection program in Document 82A8003 that medical examinations are required for all individuals before they are permitted to use respiratory protection, although this is stated elsewhere. Please clarify.
8. Please submit the criteria that you will use to determine when anti-contamination clothing must be used. A chart similar to Table 4-1, Document 82A8003, would be suitable. You should also submit similar criteria relating contamination levels to requirements for respiratory protection and anti-contamination clothing.

With regard to Document 82A8006:

9. It is not clear how this document will be used. It is not referenced in the training section of your Radiation Safety Manual. Please explain.
10. On pp. 14-15, your paraphrase of 10 CFR 20.101 is inaccurate and misleading. In particular, 1.25 rem in a calendar quarter is not the same as 1.25 rem/3 months. The three rem per quarter limit does not apply to extremities and skin, as implied.
11. On p. 17, medical radiation is not considered beneficial. The benefits to the irradiated individual are judged to exceed the risks involved. Also, non-medical exposure is not "dangerous," but does entail some risk which increases with dose.
12. On p. 17, gonads are not blood-forming organs, as you imply. Also, you fail to discuss the stochastic nature of radiation risk.
13. On p. 26, the film in a film badge is exposed by the radiation. The film is developed by the normal chemical process.
14. On p. 27, there is a gross typo at the end of paragraph 6.4. Also, you fail to explain the theory behind the time-distance-shielding strategy.
15. With respect to Document 82A8008, the calculation of the MDL on p. 13 does not include the efficiency of the counter.

Please submit a corrected document.

With regard to Document 82A8009:

16. On pp. 6-8, please submit a document that makes it clear that material cannot be considered "special form" unless it has been shown that the material will pass the tests in 49 CFR 173.469, and documentation of the tests is kept of file for one year from the last shipment.
17. On p. 9, paragraph E, you state that it is not appropriate to consider packaging. Is this correct?
18. On pp. 15, 17, 21 and 22, you refer to section numbers. Do these refer to the Code of Federal Regulations, and if so, what title? If these references concern transportation, the correct form of the reference is 49 CFR 173.403(1). Please submit a corrected document.
19. On p. 16, you neglect to mention that limited quantities, instruments, and articles are required to be labeled "Radioactive" on the outside of the inner packaging, or, if there is no inner packaging, on the outside of the package. Please submit a corrected document.
20. On pp. 22-23 of this document, you fail to explain how you plan to comply with DOT Specification 7A. You state the general requirements, but fail to state how you will meet them. Please submit your procedures for assuring that the packagings you will use for shipment of Type A quantities of radioactive materials will meet DOT and NRC requirements.
21. With respect to Document 82A8010, on p. 7, paragraph D 2, you instruct personnel to secure equipment which will prevent a safety hazard. Is this correct?
22. With regard to Document 82A8013, p. 3, Section 4.1, 10 CFR 20 does not deal with exempt quantities. Please clarify what you mean by "exempt," and how this concept will be used. You appear to use this in the sense of a "limited quantity" as defined in 49 CFR 173.421. Material in a sample for analysis may also be exempt from the requirements for a license under 10 CFR 30.18. No material may be transferred as waste (Section 4.2) except as provided in 10 CFR 20.301. Samples in quantities greater than those permitted by 10 CFR 30.18 can only be transferred in accordance with 10 CFR 30.41.

23. With regard to Document 82A8014, is this document intended to be a statement of commitment by you, or just a statement of good practice? The wording of the document suggests the latter, and does not appear to be a respiratory protection program. Please clarify.
24. With respect to Document 82A8015, the purpose of this document is not clear. Does it refer to the decontamination of equipment, of a facility before release, or both? What are your release criteria?
25. With regard to Document 82A8016, it is not clear why an environmental sampling program is required. Please explain.
26. 10 CFR 20.205(d) requires licensees to establish and maintain procedures for safely opening packages in which licensed material is received. Please submit your procedures.

We will continue our review upon receipt of this information. Please reply in duplicate to my attention at the Region I office, and refer to Mail Control No. 03034.

Sincerely,

Original Signed By  
Laurence F. Friedman, Ph.D.

Laurence F. Friedman, Ph.D., C.H.P.  
Senior Radiation Specialist  
Nuclear Materials Section B  
Division of Engineering and  
Technical Programs

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## CONVERSATION RECORD

TIME

DATE

11/20/84

TYPE

☐ VISIT☐ CONFERENCE☒ TELEPHONE☐ INCOMING☐ OUTGOING

ROUTING

NAME/SYMBOL INT

Location of Visit/Conference:

NAME OF PERSON(S) CONTACTED OR IN CONTACT  
WITH YOUORGANIZATION (Office, dept., bureau,  
etc.)

TELEPHONE NO:

203-796-5308

Francisco Trejo, Mgr, Waste Mgt. Serv. Nuclear Energy Services

SUBJECT

Clarification of authorization requested in application

## SUMMARY

NES has a permanent facility in North Carolina operated under an agreement state license. NES will conduct following operations:

1. Repair and/or decon of NES-owned contaminated equipment + shipping casks at non-licensed facilities, e.g., machine shop.
2. Similar operations on equipment owned by others.
3. Broker + ship radioactive waste
4. Decon + decommission source fabrication facility with expired license under NES or expired license.

NES also wants approval of their own dosimetry program for use by NES + customers.

## ACTION REQUIRED

NAME OF PERSON DOCUMENTING CONVERSATION

SIGNATURE

DATE

## ACTION TAKEN

SIGNATURE

TITLE

DATE

# CONVERSATION RECORD

TIME

DATE

11/19/84

TYPE

☐ VISIT

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☐ TELEPHONE

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☒ OUTGOING

ROUTING

NAME/SYMBOL

INT

Location of Visit/Conference:

NAME OF PERSON(S) CONTACTED OR IN CONTACT WITH YOU

ORGANIZATION (Office, dept., bureau, etc.)

TELEPHONE NO.

John May

Nuclear Energy Ser.

203-  
796-5308

SUBJECT

Fee Calc. for 11/1/84 application  
(C.N. 03/03)

SUMMARY

Mr. May indicated that they want authorization to decontaminate facilities & equipment for others (3N), do their own calibration etc. (3P), receive prepackaged waste (4C), and receive waste for packaging (4B)

The source material is for the waste category only.

CN 103722

ACTION REQUIRED

NAME OF PERSON DOCUMENTING CONVERSATION

SIGNATURE

DATE

Bo Jackson

11/19/84

ACTION TAKEN

SIGNATURE

TITLE

DATE

BETWEEN: William O. Miller, Chief  
License Fee Management Branch  
Office of Administration

John E. Glenn, Chief  
Nuclear Materials Section B  
Division of Engineering and  
Technical Programs

LICENSE FEE TRANSMITTAL

A. REGION X

1. APPLICATION ATTACHED

Applicant/Licensee: Nuclear Energy Services, Inc.

Application Dated: 11/1/84

Control No.:

~~03103~~ 03234

License No.:

New

2. FEE ATTACHED

Amount: \$ 3490.00

Check No.: 30377

103722

3. COMMENTS

Signed Brenda Platchek

Date 11/6/84

B. LICENSE FEE MANAGEMENT BRANCH

1. Fee Category and Amount:

3N(\$930) 3P(\$230) 4B(\$1400) 4C(\$930)

2. Correct Fee Paid. Application may be processed for:

Amendment \_\_\_\_\_

Renewal \_\_\_\_\_

License ✓

Signed Frances Brown

Date 11/19/84

11/20/84