YANKEE ATOMIC ELECTRIC COMPANY

Telephone (508) 779-6711
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580 Main Street, Bolton, Massachusetts 01740-1398

November 26, 1990
BYR 90-154

United States Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

Attention: Mr. Patrick Sears
Senior Project Manager
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

References: (a) License No. DPR-3 (Docket No. 50-29)
(b) Letter, NRC to Yankee Atomic Electric Company, dated August 31, 1990

Subject: Yankee Test Reactor Irradiation Program

Dear Sir:

Yankee met with the NRC on November 20, 1990 to discuss a proposed test reactor irradiation program. At the meeting, Yankee committed to submit to the NRC a description of the test program for review and approval. The NRC committed to complete their review and approval of the program within two weeks of its receipt.

TEST OBJECTIVE

The objective of the irradiation test program is to characterize the irradiation response of representative Yankee reactor vessel beltline plate materials and to remove uncertainties in the analysis of existing irradiation data. The uncertainties to be clarified are associated with the response of the beltline plate material to irradiation temperature (500°F versus 550°F), microstructure (coarse versus fine grain) and nickel content (high versus low) as described in Reference (b).

TEST MATERIAL SELECTION

Candidate plate materials for irradiation testing should have chemistry contents which closely match the contents of the Yankee beltline plates. The chemical elements of particular interest are copper and nickel. The plates to be matched are the Yankee lower and upper shell plates. Material (YA1 and YA2) has been found which approximates the copper and nickel content of the lower plate (Table I) and it is proposed that these materials be used for the irradiation testing corresponding to the lower plate. For the upper plate, two materials (YA8 and YA9) have been identified which approximate its copper and nickel content. Yankee has possession of YA8 and is attempting to obtain possession of YA9. The preferred material is YA9 because it more closely approximates the other elements in the upper plate. Yankee requests the assistance of the NRC in procuring the material.

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Other material has been made available with the chemical contents shown in Table III. This material, especially YA3 and YA4, could be used in determining a nickel effect.

REFERENCE MATERIALS

Reference material will be used in the test program to verify irradiation results. The YA1 and YA2 material are proposed as the reference material. They were tested and reported in a study published by R. Hawthorne in 1975 in ASTM STP-570 (pp 83-102). YA1 is "plate 2" of the study; YA2 is "plate 1" of the study. These plates were irradiated at several fluences in the range of interest and in both longitudinal and transverse orientations. HSST-02 is also available from the Heavy-Section-Steel-Technology (HSST) Program.

HEAT TREATMENT

In order to duplicate the Yankee vessel steel coarse grain microstructure, the test materials must be heat treated. A heat treatment qualification program is being performed as shown in Figure 1. The qualification plates will be characterized in their as-received state, heat treated, and then tested for the desired microstructure. The process will be repeated until acceptable, repeatable results are obtained. The actual test plates will be heat treated upon completion of the qualification program.

IRRADIATION TEST MATRIX

The test matrix is shown in Figure 2. The first test will be the lower plate test material at 500°F and 550°F at 3×10^{19} n/cm^2. The Charpy specimens will be oriented in the longitudinal direction to be consistent with previous testing. Two capsules will be irradiated with the following materials:

Capsule A (40 Specimens)
550°F Irradiation

Material	State	Type	Quantity
YA1	coarse	Charpy	12
YA1	coarse	tensile	2
YA1	fine	Charpy	12
YA1	fine	tensile	2
HSST-02	fine	Charpy	12
			40

Capsule B (50 Specimens)
500°F Irradiation

Material	State	Type	Quantity
YA1	coarse	Charpy	22
YA1	coarse	tensile	2
YA1	fine	Charpy	12
YA1	fine	tensile	2
HSST-02	fine	Charpy	12
			50

The first irradiation test is designed to accomplish several objectives.

- Show the irradiation effects of microstructure by irradiating the same test material with a fine and coarse grain microstructure.

- Show the irradiation effects of irradiation temperature by irradiating the test material at 500°F and 550°F.

- Develop the YA1 plate as a bounding material for the lower plate. The copper and nickel content of YA1 has a higher chemistry factor than the lower plate. It will be heat treated to develop equivalent microstructure to Yankee plate and will be irradiated at a temperature (500°F) equivalent to Yankee's irradiation temperature.

- Provide test data for a high nickel plate to compare with the Yankee BR3 plate irradiation data to show the nickel effect. The BR3 data is for a Yankee plate of similar copper but lower nickel content than the test plate.

The proposed second irradiation test matrix is shown in Figure 3. It will simulate the upper plate at 500°F and 550°F. The capsule contents have not been fully established but are expected to be similar to the first irradiation. Once the availability of YA9 is established, the capsule contents will be confirmed.

TEST REACTOR DOSIMETRY

At least two irradiations will be conducted in the University of Michigan's Ford test reactor. The flux at the core position to be used is estimated at 9×10^{12} n/cm^2/sec. The actual flux and neutron spectrum will be determined by irradiating a steel block containing dosimetry wires. Additionally, a dummy test will be conducted using the test capsules and test configuration to verify that capsule temperatures can be maintained at the two desired temperatures of 500°F and 550°F. Test temperatures are monitored throughout the irradiations using thermocouples. Materials Engineering Associates, Inc. (MEA) will encapsulate the test specimens and dosimetry and will conduct the irradiations. Laboratory analysis of dosimetry will be performed by EG & G. Babcock & Wilcox will determine the fluence by using their DOT 4.3 two-dimensional, neutron transport theory code with the following parameters:

- S8 Quadrature

- P3 Scattering

- ENDF/B4 Cross-Section Library

- BUGLE-80 Energy Group Structure

The following dosimetry wires will be used in each capsule containing test specimens:

DOSIMETRY WIRES	90% RESPONSE RANGE
Ni	2.1 - 7.6 Mev
Fe	2.5 - 7.8 Mev
Co/Al	Thermal
Ag/Al	Thermal
Nb	0.6 - 6.0 Mev
U-238	1.5 - 6.7 Mev

The U-238 will be encapsulated in either vanadium or stainless steel. It will then be placed in a gadolinium cover and finally an aluminum cover.

A calculation has been made of Displacements Per Atom (DPA) at the inside surface of the Yankee reactor vessel. The result was compared with a similar calculation at the center of a capsule containing specimens in an incore position of the Buffalo test reactor. The neutron spectrum at an incore position in the Ford test reactor should be similar to the Buffalo reactor. The thermal neutron contribution to the DPA at the inside surface of the Yankee reactor vessel was about 1.2% and 0.3% at the center of the test reactor capsule. The contributions to DPA from thermal neutrons is small for both the Yankee reactor vessel and the test reactor. Therefore, the irradiation test results from the test reactor should be applicable to the Yankee reactor vessel plate material.

SCHEDULE

The first irradiation is scheduled to start in March 1991. To achieve the target fluence of 3E19 n/cm^2, the test duration is about 3 months. The second irradiation would start in June 1991. This test schedule is dependent upon approval of the test program from the NRC and the preparation of test specimens. It is very tight and will require the cooperation of all parties to complete by the end of the current cycle.

CONCLUSIONS

Yankee requests the NRC's concurrence with the following:

- Test objectives.
- First irradiation test matrix.
- HSST-02 as a reference material for the first irradiation.
- YA1 plate as representative of the lower plate.
- The method of characterizing the dosimetry of the test reactor.

Because of the lead time to heat treat the plates, prepare specimens, and encapsulate them, we request a two-week review and approval.

Sincerely,

John D. Haseltine

John D. Haseltine
Director, Yankee Project

JDH/gjt/WPP72/150

cc: B. Elliot (NRC, NRR)
R. Wessman (NRC, NRR)
W. Russell (NRC, NRR)

Figure 1

Heat Treatment Qualification

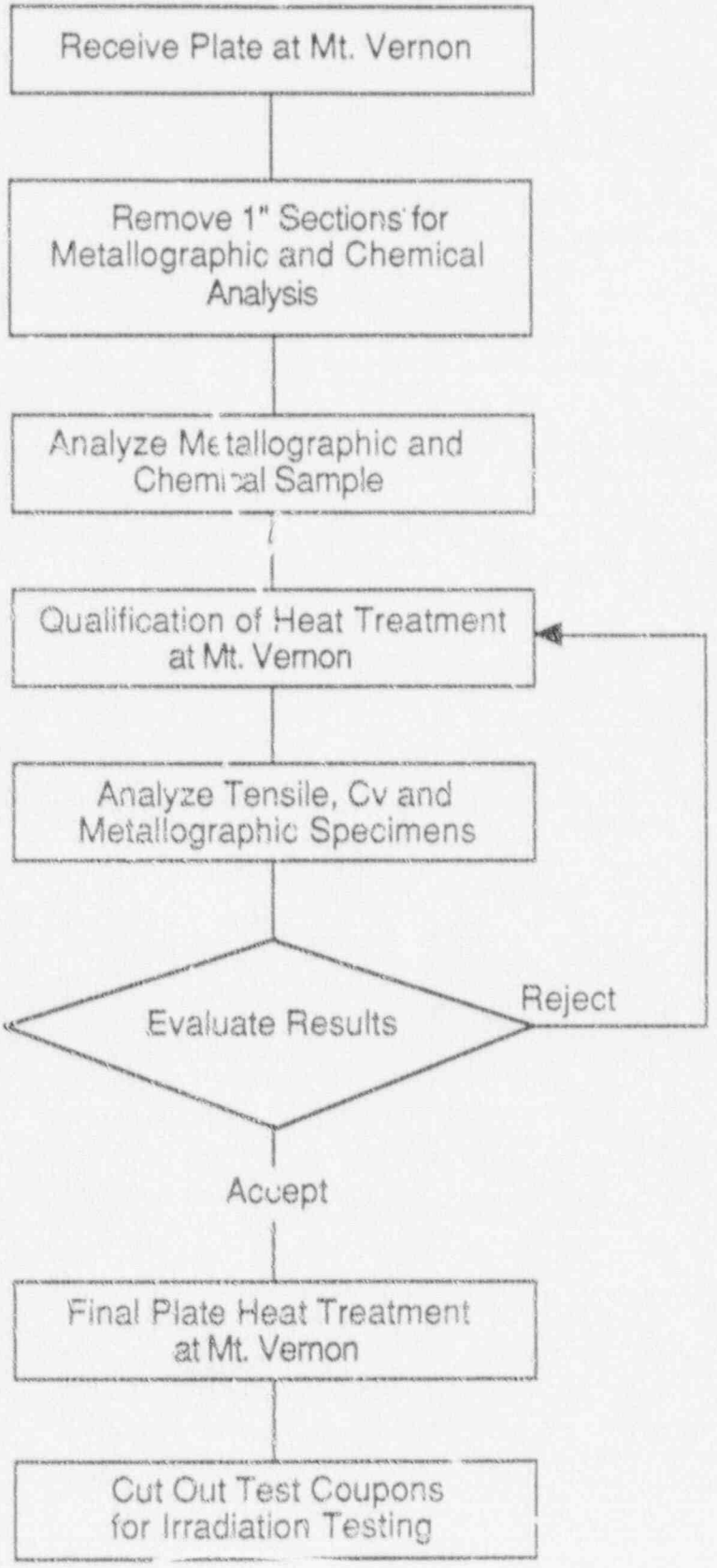
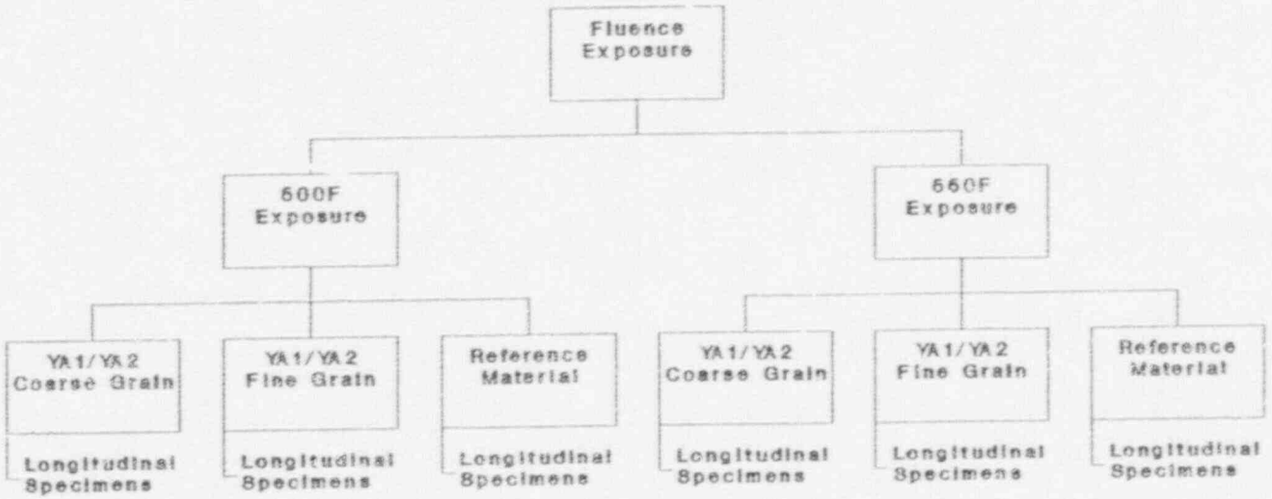


Figure 2

Irradiation Test Matrix for Lower Plate Material

A302-B Low Cu, Mod. Ni

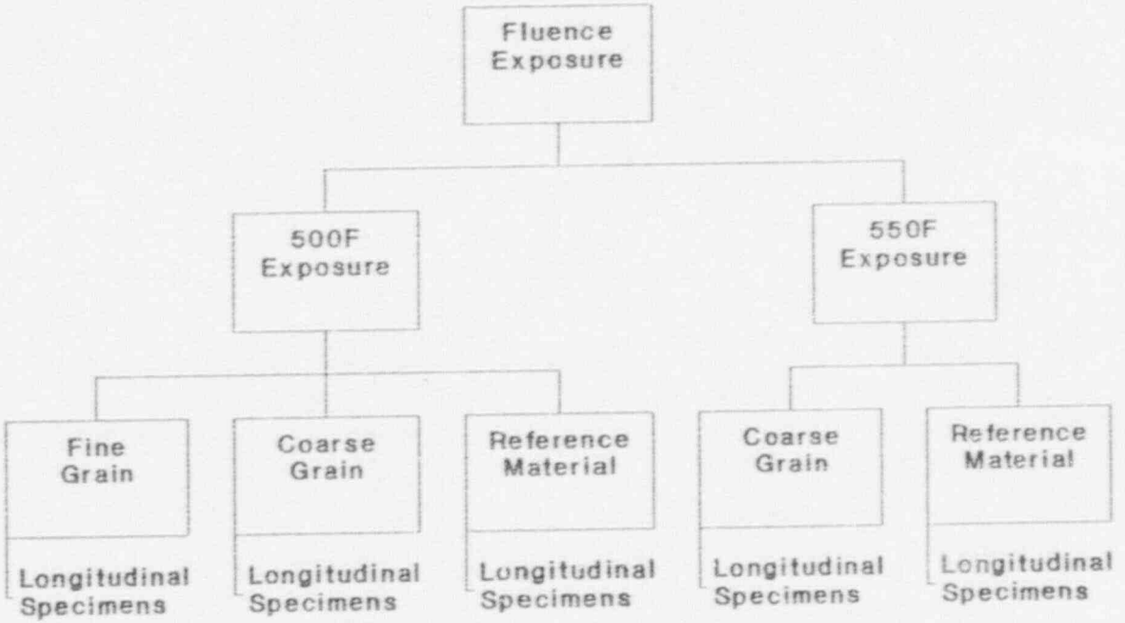


Target Fluences < *3.0 E19 n/cm-2 >1 MeV*
5.0 E19 n/cm-2 >1 MeV

Figure 3

Irradiation Test Matrix for Upper Plate Material

A302-B Low Cu, Low Ni



Target Fluences < *3.0 E19 n/cm-2 >1 MeV*

5.0 E19 n/cm-2 >1 MeV

Table I

Lower Vessel Shell Materials

Chemistry

	Cu	Ni	C	Mn	Si	Mo	S	P	Cr	Al
YA1	.240	.620	.250	1.400	.230	.590	.011	.008	.110	.020
YA2	.170	.560	.230	1.290	.210	.570	.015	.009	.100	.027
Yankee Lower Plate	.200	.630	.190	1.180	.200	.480	.026	.016	.110	.020

Table II

Upper Vessel Shell Materials

Chemistry

	Cu	Ni	C	Mn	Si	Mo	S	P	Cr	Al
YA8	.140	.200	.210	1.150	.250	.600	.017	.015	.220	<0.01
YA9*	.240	.190	.170	1.280	.220	.500	.022	.026	.160	-
Yankee Upper Plate	.180	.210	.200	1.270	.210	.480	.028	.020	.060	-

* Not yet obtained.

Table III

Additional Materials Being Considered

Chemistry

	Cu	Ni	C	Mn	Si	Mo	S	P
YA3	.130	.480	.210	1.290	.190	.460	.014	.013
YA4	.130	.820	.220	1.350	.240	.600	.015	.015
YA5	.130	.580	.210	1.310	.210	.530	.015	.012
YA6	.140	.480	.220	1.360	.230	.450	.015	.008
YA7	.140	.570	.230	1.200	.250	.550	.015	.006

ROCHESTER GAS AND ELECTRIC CORPORATION • 89 EAST AVENUE, ROCHESTER N.Y. 14649-0001

ROBERT C. MECREDY
Vice President
Ginna Nuclear Production

TELEPHONE
AREA CODE 716 546-2700

November 27, 1990

Mr. Thomas T. Martin
Regional Administrator
U.S. Nuclear Regulatory Commission
Region I
475 Allendale Road
King of Prussia, PA 19406

Subject: Systematic Evaluation of Licensee Performance (SALP)
R.E. Ginna Nuclear Power Plant
Docket No. 50-244

Dear Mr. Martin:

This document provides our response to the NRC's October 26, 1990 transmittal of SALP Board comments, and includes the results of discussions held during our November 20, 1990 meeting on this subject.

RG&E has dedicated significant personnel and capital resources to attaining our goal of improving our operation and striving for excellence, operating a safe and economic nuclear unit throughout its present operating license period and beyond. We are pleased that the NRC has recognized the many strides we have made toward this end, as reflected in the "improving" trends in Maintenance/Surveillance and Security. The SALP Board comments further suggest that major improvements have been made in several other categories, particularly Operations.

RG&E further recognizes that aggressive maintenance of high performance in our areas of strength, as well as improvements in all areas, must occur in order for us to realize our goal. Many program areas, such as Configuration Management and Procedural Upgrades, have been initiated but must be maintained at a high level of effort in order to demonstrate their effectiveness.

Specific comments relative to the individual SALP categories are provided in the attached report. We look forward to working with the NRC in the future to ensure that our mutual goals of maintaining a consistently high safety level in all areas at Ginna Station are attained.

Very truly yours,

Robert C. Mecredy

Robert C. Mecredy

GJW\127

Attachment

IE40
1/1

xc: U.S. Nuclear Regulatory Commission (original)
Document Control Desk
Washington, D.C. 20555

Allen R. Johnson (Mail Stop 14D1)
Project Directorate I-3
Washington, D.C. 20555

Ginna Senior Resident Inspector

Attachment - RG&E comments relative to individual 10/26/90 SALP Categories

A. Plant Operations:

We would like to acknowledge your assessment of our performance in plant operations. The identified strengths and opportunities for improvement parallel our self-assessment. You have recognized our operators knowledge, competence, and professionalism in the operation of our facility.

Although we will continue to pursue excellence in the stated strengths, detailed plans for improvements have already been instituted to address independent verification, procedure adherence, and housekeeping.

As correctly stated in your report, a task force was established to address independent verification and procedure adherence. This task force, comprised of the plant manager and a large cross-section of staff personnel, has been meeting regularly since March 1990. Final approved procedure changes and Phase 1 of our Training Program have been completed. While developing our longer term improvement program, it should be noted that immediate corrective actions involving interim procedure changes were implemented. Procedure A-1408, "Independent Verification" was revised and made effective in May 1990. Procedure A-503 "Procedure Adherence" has also been revised and implemented. The improvements as noted in your report resulted from these interim corrective actions.

Our shop area housekeeping is being improved, striking a balance between the need for tool storage and controlled work spaces.

We will continue to utilize our knowledgeable, competent and professional operating staff to meet the challenge of the future. We believe that we demonstrated substantial improvement during this SALP period, that we are on the threshold of being a superior performer, and will not be satisfied until this performance is fully realized.

B. Radiological Controls:

RG&E is pleased that, for the most part, we were able to maintain adequate staffing of the radiological controls program, provide adequate training programs, and provide a good program for monitoring and minimizing internal and external exposures. We do take pride in the success of our efforts to reduce cumulative annual personnel exposures, particularly through the effective use of mock-ups, and our successful corrective action to decrease the number of personnel contamination events.

We also recognize the need for further self-improvement and have instituted plans to achieve this.

Our staffing has been augmented with eight additional technicians. The selection process for two of the three Health Physicists has been completed with offers pending.

Our training program has been expanded to offer individual radiation monitoring to selected personnel. Monitoring requirements for steam generator entries have been reevaluated to conservatively assess accumulated dose.

Tracking of internal exposures has been changed to reflect implementation of new methodology to conservatively assess Maximum Permissible Concentration (MPC) hours.

We had previously taken the initiative to develop and formalize a quality control position for our primary, secondary, environmental chemistry and countroom activities. It should be noted that QC procedures were in effect in the Radiochemistry Laboratory throughout the SALP period, contrary to the statement in the report. In addition, as noted in NRC Inspection Report 90-16, we have in place many of the elements of an overall laboratory QA/QC program. We acknowledge that implementation of these procedures in the Environmental Lab is still in need of improvement.

We acknowledge that a violation resulted due to non-compliance of a radwaste shipment, and we have enhanced our radwaste resin shipment program to include procedure changes and equipment upgrades.

We believe we have made strides, particularly toward the end of the SALP period, to improve our overall controls of the Radiological Protection program, and anticipate both qualitative and quantitative benefits to result.

C. Maintenance/Surveillance

RG&E concurs with the NRC Assessment of the Maintenance/ Surveillance functional area. RG&E appreciates NRC recognition of our strengths and improving trend.

Our improved Maintenance/Surveillance Effectiveness has been achieved through knowledgeable, conscientious individuals who strive for excellence in their overall performance. This improved level of performance has been achieved by applying knowledge, skill and initiative toward accomplishing performance and organizational objectives. Our proactive efforts to perform self assessments and upgrade our work control system, procedures, and optimize our Preventive Maintenance Program via the Reliability Centered Maintenance Project are achieving their expected results.

Your insight is valuable in our assessment and oversight for continuous improvement. Comprehensive actions are being planned or have already been implemented to address weaknesses addressed by this SALP Report.

Our corrective actions for identified weaknesses in the Sling Inspection Program, Training, Records Retrievability, Surveillance, and Procedure Adherence areas will address the root cause of the problem(s) and prevent recurrence.

Management attention and involvement will continue to be readily evident and will continue to place emphasis on superior performance of Maintenance/Surveillance activities.

In the next period, we will maintain our aggressive posture and commitment to maintain the highest standards and achieve the highest category rating.

D. Emergency Preparedness:

RG&E concurs with the Emergency Preparedness strengths identified in the SALP Report, and attributes these strengths to our continued emphasis on management support and involvement in maintaining program effectiveness. We also believe our performance reflects widespread cooperation being fostered among participating RG&E departments, and among external supporting agencies at the local, state, and federal level. We are striving to improve the Emergency Preparedness program wherever possible through continuous upgrades, when considered necessary, in our equipment, procedures, and training as well as through the exchange of ideas with our industry counterparts. In the next SALP review period, we are challenging ourselves to improve our overall emergency readiness by bettering the effectiveness of our training and drills. RG&E's management is committed to maintaining superior performance in this area, and will ensure that we maintain the excellent working relationships necessary to achieve that performance.

E. Security

While the SALP Report concluded that our security program is "Improving", it did identify certain limited weaknesses which we address here. It was pointed out that there has been a slow response to the correction of a few hardware problems, and it must be explained that stringent engineering analysis has been required to ensure that the ongoing systems upgrade project is not adversely impacted. Compensatory measures are implemented as required. A method for documenting changes in training for Crucial Tasks is being developed to address the Board's concern relative to the introduction of lessons learned into the Training and Qualification Plan. Finally, the Quality Assurance group has also recognized the need for performance

based assessment and has utilized a consultant specialist to assist addressing this concern in the most recent security audit. It is anticipated that management's ongoing commitment to the security systems upgrade project and their support of security force development will be reflected in continued improvement and a return to superior performance.

F. Engineering/Technical Support

RG&E agrees with the many examples cited of strong technical support for Ginna Station, and is pleased that the NRC has recognized the high level of engineering and licensing expertise of RG&E personnel. RG&E also acknowledges improvements that are needed in engineering assurance to achieve high standards which we set for ourselves and are expected in the nuclear industry. Assessments conducted by both internal and external groups are being used to recommend improvements in our engineering processes and procedures which will address shortcomings identified during the SALP period. Communications between our offsite engineering department and the onsite technical support group have been formalized to assure that potential safety issues are documented and evaluated through the used of procedure QE-1603, "Documenting and Reporting Potential Conditions Adverse to Quality". We also expect to make other significant improvements in our processes during the current SALP period to better control, closeout and track design changes for the station.

It should be noted that, although RG&E is planning to participate in the Westinghouse two-loop Design Basis Documentation (DBD) coordinated effort, present plans do not include the completion of an RHR System DBD in 1990. Our Design Basis efforts will, however, be increased in conformance with our integrated Configuration Management Program.

As acknowledged by the SALP Board, RG&E has initiated several significant program upgrades, and we are anxious to demonstrate their effectiveness in our future design efforts.

G. Safety Assessment/Quality Verification

We agree with the NRC's assessment that improved performance occurred in this area, as indicated by the high quality submittals to the NRC, safety-conscious responses to NRC generic issues, and rapid and comprehensive evaluations of potential safety issues. We further concur with your comments that self-assessment concerns identified by Quality Performance need to be tracked to completion. We acknowledge the length of time required to complete the license amendment cycle for the Auxiliary Feedwater System, but must point out that administrative controls were in place to ensure conservative operability of the system in this time period. We have also

implemented comprehensive changes in our procedure adherence and independent verification requirement. The procedures have been upgraded and approved, and training of appropriate personnel in these areas has been conducted. A complete review and enhancement is still going on to update all plant procedures to the new independent verification requirements.

NORTHEAST UTILITIES

THE CONNECTICUT LIGHT AND POWER COMPANY
WESTERN MASSACHUSETTS ELECTRIC COMPANY
HOLYOKE WATER POWER COMPANY
NORTHEAST UTILITIES SERVICE COMPANY
NORTHEAST NUCLEAR ENERGY COMPANY

General Offices • Selden Street, Berlin, Connecticut

P.O. BOX 270
HARTFORD, CONNECTICUT 06141-0270
(203) 665-5000

November 26, 1990

D04183

Mr. William Hegener
Oil and Chemical Spill Section
Department of Environmental Protection
165 Capitol Avenue
Hartford, CT 06106

Dear Mr. Hegener:

Millstone Nuclear Power Station, Unit No. 1
Oil Spill Report

Northeast Utilities Service Company (NUSCO), on behalf of Northeast Nuclear Energy Company (NNECO), hereby submits a report of a hydraulic oil spill at NNECO's Millstone Nuclear Power Station, Unit 1. This spill was verbally reported to your office on November 15, 1990.

Approximately 15 gallons of hydraulic oil was discharged to the pavement due to a severed vent line. The spill was contained and cleaned up by Millstone personnel.

If you have any question, please call Ms. Cynthia L. Karlic, NUSCO Generation Facilities Licensing, at 665-3740.

Very truly yours,

NORTHEAST UTILITIES SERVICE COMPANY
As Agent for Northeast Nuclear Energy Company

E. J. Mroczka
Senior Vice President

Enclosure
cc: w/Enclosure
U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

OS3422 REV. 4-88

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1/1

Approved By Stephen J. Scace Date 4/4/91 SORC Mtg. No. 91-14

REPORT OF PETROLEUM OR CHEMICAL
PRODUCT DISCHARGE, SPILLAGE, SEEPAGE, FILTRATION

Millstone 1	NNECO	11/15/90	
UNIT	COMPANY NAME	SPILL OCCURRED OR DISCOVERED DATE	TIME

REPORT PREPARED BY	PHONE	EXT
NEIL G BERGH (DUTY OFFICER)		4212
SUPERVISOR IN CHARGE	EMPLOYEE REPORTING SPILL	

MAINTENANCE SUPERVISOR / ANTHONY MUSCARELLA

1. SPILL LOCATION
UNIT 1
ON SITE LOCATION SOLID RADWASTE
TOWN WATERFORD
STREET MILLSTONE STATION

2. EQUIPMENT, NUMBER/SIZE EACH UNIT
[ ] CONTAINER(S) _____
[ ] VEHICLE(S) _____
[ ] TANK
[X] OTHER MOBILE CRANE

3. QUANTITY AND TYPE
15 GALLONS
[X] OIL (TYPE) HYDRAULIC
[ ] CHEMICAL (NAME) _____
[ ] OTHER (NAME) _____

4. MATERIAL HAS SPILLED ONTO
[X] PAVEMENT [ ] TREES [ ] STRUCTURES
[ ] EARTH [ ] CONCRETE [ ] VEHICLES
[ ] LAWN [ ] PERSONS
[ ] SHRUBS/BRUSH [ ] OTHER _____

5. MATERIAL HAS SPILLED INTO
[ ] CUTTER, CATCH BASIN OR STORM DRAIN [ ] INLAND WETLANDS
[ ] POTABLE WATER SYSTEM (NAME) _____
[ ] BODY OF WATER (NAME) _____
[ ] Other
[X] None

6. HAS SPILL BEEN CONTAINED? IF NO, DESCRIBE
[X] YES [ ] NO

7. SPILL CAUSE
[ ] VEHICLE ACCIDENT [ ] VANDALISM
[ ] STORM EVENT [ ] CORROSION
[X] EQUIP. FAILURE [ ] HUMAN ERROR
[ ] OTHER

8. SPILL EVENT
[X] TANK OR PIPING RUPTURE [ ] GASKET/FITTING LEAK
[ ] ABOVE GROUND [ ] OVERFILL
[ ] BELOW GROUND [ ] FIRE
[ ] BURN OR CORROSION HOLE [ ] OTHER _____

9. WEATHER
[X] FAIR
[ ] RAIN
[ ] SNOW/SLEET
[ ] HIGH WIND

10. CLEAN-UP AND OTHER INFORMATION:

DESCRIPTION OF SPILL EVENT

VENT LINE ON MOBILE CRANE SEVERED. APPROXIMATELY 15 GALLONS OF HYDRAULIC OIL SPILLED ONTO MACADAM. INITIALLY DAMMED WITH SAND AND SUBSEQUENTLY CLEANED UP WITH SPEEDY DRY & ABSORBENT SOCKS

REPORTING REQUIREMENTS		CALL NO.	ORIGINAL CALL MADE DATE	TIME	FOLLOW-UP DATE	TIME
	Report all spills to:					
D.	Chem/Oil Spill Division (24 HOUR)	(203) 566-3338	11/15/90	1550		
E.	Water Compliance (NPDES Violation)	(203) 566-7167				
P.	State Police (Off hours)	(203) 566-4240				
	Waterford	ECC Hotline				
	Report chemical spills exceeding limits of SF 623, SF 622 or oil spills					
E.	discharging to waterways to:					
P.						
A.	1. National Response Center	(800) 424-8802				
	2. U.S. C.G. New London	(203) 442-4471				
	3. See Requirments of EPIP 4112, Incident Communications.					

James I Santacroce

cc: Chemistry Supervisor
PIR File
Generation Facilities Licensing, Berlin
Fossil Hydro Production Services, Berlin

November 23, 1990

Docket No. 50-255

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EJordan
PDIII-1 Plant File

Mr. Gerald B. Slade
Plant General Manager
Palisades Plant
27780 Blue Star Memorial Highway
Covert, Michigan 490

Dear Mr. Slade:

SUBJECT: PALISADES NUCLEAR POWER PLANT - APPROVAL OF NUCLEAR CONSTRUCTION ISSUES GROUP VISUAL WELD ACCEPTANCE CRITERIA FOR STRUCTURAL WELDING AT NUCLEAR POWER PLANTS

Your letter dated November 5 1990, submitted a proposed revision to Palisades Nuclear Plant Final Safety Analysis Report (FSAR) requesting the use of the Nuclear Construction Issues Group Visual Weld Acceptance Criteria (VWAC) during the present steam generator replacement effort at Palisades. The VWAC will be used only on uncoated structural weldments fabricated under the rules of the American Welding Society D1.1 Structural Welding Code.

In a letter dated November 5, 1985, the NRC staff approved the use of VWAC for structural welding at nuclear power plants on a generic basis and mandated that the specific licensee wishing to use VWAC for its plant must revise its FSAR to show the use of this criteria.

The staff has reviewed the proposed FSAR changes describing the use of VWAC on uncoated weldments at Palisades and finds them acceptable. This action completes TAC No. 77951.

Sincerely,

original signed by

Brian E. Holian, Project Manager
Project Directorate III-1
Division of Reactor Projects - III, IV, V and Special Projects
Office of Nuclear Reactor Regulation

cc: See next page

DOCUMENT NAME: TAC NO. 77951 CONSTRUCTION

Office:	LA/PDIII-1	PM/PDIII-1	PD/PDIII-1
Surname:	SMeador	BHolian/tg	BPierson
Date:	11/23/90	11/23/90	11/24/90

DF01
1/0

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

November 23, 1990

Docket No. 50-255

Mr. Gerald B. Slade
Plant General Manager
Palisades Plant
27780 Blue Star Memorial Highway
Covert, Michigan 49043

Dear Mr. Slade:

SUBJECT: PALISADES NUCLEAR POWER PLANT - APPROVAL OF NUCLEAR CONSTRUCTION ISSUES GROUP VISUAL WELD ACCEPTANCE CRITERIA FOR STRUCTURAL WELDING AT NUCLEAR POWER PLANTS

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Sincerely,

Brian E. Holian

Brian E. Holian, Project Manager
Project Directorate III-1
Division of Reactor Projects - III,
IV, V and Special Projects
Office of Nuclear Reactor Regulation

cc: See next page

cc:

M. I. Miller, Esquire
Sidley & Austin
54th Floor
One First National Plaza
Chicago, Illinois 60603

Mr. Thomas A. McNish, Secretary
Consumers Power Company
212 West Michigan Avenue
Jackson, Michigan 49201

Judd L. Bacon, Esquire
Consumers Power Company
212 West Michigan Avenue
Jackson, Michigan 49201

Regional Administrator, Region III
U.S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, Illinois 60137

Jerry Sarno
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Resident Inspector
c/o U.S. Nuclear Regulatory Commission
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DCS

NOV 2 3 1990

Docket No. 50-271
File RI-90-A-0200

Vermont Yankee Nuclear Power Corporation
ATTN: Mr. Warren P. Murphy
Vice President and Manager
of Operations
RD 5 Box 169
Ferry Road
Brattleboro, Vermont 05301

Gentlemen:

The U.S. Nuclear Regulatory Commission recently received an allegation concerning activities at Vermont Yankee by copy of a letter sent to Mr. Gary Weigand dated October 31, 1990. On November 8, 1990, Mr. John Rogge of my staff spoke with you concerning this matter and discussed with you your actions planned to resolve this matter and our expectations regarding the scope and timing of this review.

We request that the results of your review and disposition of this matter be submitted to Region I within 30 days of the date of this letter. We request that your response contain no personal, proprietary, or safeguards information so it can be released to the public and placed in the NRC Public Document Room. If necessary, such information shall be contained in a separate attachment which will be withheld from public disclosure. The affidavit required by 10 CFR 2.790 must accompany your request for withholding.

The response requested by this letter is not subject to the clearance procedures of the Office of Management and Budget as required by the Paperwork Reduction Act of 1980, PL 96-511.

Sincerely,

ORIGINAL SIGNED BY:

Charles W. Hehl, Director
Division of Reactor Projects

IE54
1/1

cc:
J. Weigand, President and Chief Executive Officer
J. Pelletier, Vice President, Engineering
D. Reid, Plant Manager
J. Devincentis, Vice President, Yankee Atomic Electric Company
L. Tremblay, Senior Licensing Engineer, Yankee Atomic Electric Company
J. Gilroy, Director, Vermont Public Interest Research Group, Inc.
G. Iverson, New Hampshire Office of Emergency Management
Vermont Yankee Hearing Service List
Public Document Room (PDR)
Local Public Document Room (LPDR)
Nuclear Safety Information Center (NSIC)
NRC Resident Inspector
State of New Hampshire, SLO Designee
State of Vermont, SLO Designee
Commonwealth of Massachusetts, SLO Designee
Edmund A. Burke, Esq.

bcc:
R. Barkley, DRP
H. Eichenholz, SRI - Vermont Yankee
M. Perkins, DRMA

RI:DRP	RI:DRP	RI:DRP	RI:DRP
Barkley/meo	Rogge	Johnson	Hehl
11/20/90	11/20/90	11/21/90	
11/20/90			

OFFICIAL RECORD COPY

a:90a0200.meo

VERMONT YANKEE HEARING SERVICE LIST

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Adjudicatory File (2)
Atomic Safety and Licensing Board
Panel Docket
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dr. James H. Carpenter
Administrative Judge
Atomic Safety and Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

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Washington, D.C. 20555

Robert M. Lazo, Chairman
Atomic Safety and Licensing Board
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U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Regional Administrator, Region I
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, Pennsylvania 19406

DCD/DCB

NOV 15 1990

Washington University Medical Center
ATTN: Robert J. Hickock
Assistant Vice Chancellor
4566 Scott Avenue
St. Louis, MO 63110

License No. 24-00167-11
License No. 24-00063-01
Docket No. 030-02271
Docket No. 030-15101

Gentlemen:

Thank you for your letter dated October 26, 1990, informing us of the steps you have taken to correct the violations identified in our letter dated September 28, 1990. Your letter indicates that in regard to the second violation identified in our September 28, 1990 letter, you have interpreted the frequency of the referenced surveys to be weekly and that you are currently in compliance with this requirement. In addition, you stated that you have filed a license amendment request for license No. 24-00167-11 to clarify the frequency of these surveys. As was discussed between Gary Shear of my staff and Dr. John Eichling of your staff in a telephone conversation on November 2, 1990, it is our understanding that the above surveys will be conducted daily on days of use until your license has been amended to decrease the survey frequency to weekly.

Also discussed during the November 2, 1990 telephone conversation was your response to the third violation identified in our September 28, 1990, letter. As a result of that conversation our records will reflect that the surveys of the short-lived waste had been conducted but that records of the surveys had not been maintained.

Your corrective actions for the remaining violations appear adequate and will be examined during future NRC inspections.

If you have any questions regarding these matters, please contact me at (708) 790-5721.

Sincerely,

Roy J. Caniano, Chief
Nuclear Materials Safety Section 2

cc: John Eichling, Ph.D., RSO
Carlos A. Perez, M.D.
Chairman, RSC

cc w/ltr dated 10/26/90:
DCD/DCB (RIDS)

RIII	RIII	RIII
GLS for (yes)	GLS (yes)	
Pankratz/ms	Shear	Caniano
11/15/90	11/15/9.	11/15/90

IE07

WASHINGTON UNIVERSITY SCHOOL OF MEDICINE
AT WASHINGTON UNIVERSITY MEDICAL CENTER

DIVISION OF
RADIATION SAFETY

October 26, 1990

Roy J. Caniano, Chief
Nuclear Materials Safety
U.S. Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellyn, Illinois 60137

Dear Mr. Caniano:

This letter constitutes the reply of Washington University Medical Center to the Commission's Notice of Violation dated September 28, 1990 that resulted from an inspection of activities authorized by Materials Licenses No. 24-00167-11 (broad scope medical) and No. 24-00063-10 (^{60}Co teletherapy) that was conducted during the week of July 30 through August 3, 1990. The Notice of Violation specifies 4 apparent violations -- 3 associated with the broad scope medical license and one with the ^{60}Co teletherapy license.

The reply to each violation is as follows:

License No. 24-00167-11

(1) The two cited cases of not securing licensed materials against unauthorized removal were promptly corrected. The freezer located near Room 5508, Cancer Research Building, has been fitted with a lock and the unit is locked except when being accessed. The multiple-user laboratory, 7757 Clinical Sciences Building, in which the refrigerator referred to in the violation is located, is now locked except when in use.

In addition, the health physics personnel who perform the on-site inspections of the laboratory areas each quarter have stressed the importance of keeping licensed materials secure against unauthorized removal and they will continue to emphasize the importance of this matter. The licensee is currently in full compliance.

(2) The second violation involving license 24-00167-11 concerns the failure of a researcher to conduct dose rate surveys. The research group had regularly conducted wipe tests for removable contamination but had ceased doing the companion dose rate surveys. The ambient dose rate surveys were promptly resumed by the group after the deficiency was discovered during the inspection.

Box 8131
510 S. Kingshighway
St. Louis, Missouri 63110
(314) 362-2988

The Notice of Violation references Appendix N to Regulatory Guide 10.8, Revision 2 for the survey requirements and indicates that a survey of dose rates must be conducted at the end of each day of use of greater than 200 microcuries of radioactive materials. Unfortunately, the referenced Appendix N addresses only three cases -- areas where **radiopharmaceuticals** are used (sections a and c), **laboratory areas where only small quantities** of gamma-emitting radioactive materials are processed (less than 200 microcuries at a time (section b), and **areas in which sealed sources and brachytherapy sources are stored** (section d). The requirements for laboratory areas where larger quantities are used are not addressed. I believe the omission of this category was inadvertent by the Commission. The previous version of Regulatory Guide 10.8 (copy enclosed) includes specific guidance for **laboratory areas** where larger amounts of radioactive materials are used -- "All other laboratory areas will be surveyed weekly" (section 3). That guidance is the basis of our survey requirements of **laboratory areas** using greater than "small quantities," i.e., weekly surveys are required and the surveys consist of multiple measurements of two types -- measurements of dose rate and measurements of removable contamination. This policy has been in effect for more than 10 years at our institution and was reviewed by Mr. Madera during his site visit (1988) in conjunction with our most recent renewal of the broad scope medical license. The confusion of how to apply Appendix N of Regulatory Guide 10.8 to **laboratory areas using larger than small amounts** is evident on page 7 of the inspection report in which it is stated "Appendix N of the referenced Regulatory Guide also requires that surveys for removable contamination be conducted on a **weekly** basis in all areas where greater than 200 microcuries of byproduct material is used." We ask that the Commission interpret the RG 10.8 guidance for dose rate surveys consistent with that for tests of removable contamination -- **weekly** tests of each in laboratories using gamma-emitting byproduct material in single operations involving quantities greater than 200 microcuries. We have included the survey requirement in a license amendment request in order to clarify the frequency requirement. We are currently in full compliance with the survey requirement if the Commission concurs that Appendix N suggests **weekly surveys** of dose rate and of removable contamination in laboratory areas using greater than 200 microcuries of gamma-emitting byproduct materials in single operations.

(3) The third violation involves the failure to adequately survey materials held for decay-in-storage. It is important to point out that the short-lived waste has always been surveyed to verify that it is at background level prior to its transfer to the regular waste stream. However, a record of the survey was not made as required. The individual has been retrained and the record of the survey is being made. The correction was made promptly after the inspection and the licensee is in full compliance of the DIS requirements.

License No. 24-00063-10

The violation involves the failure to always record the results of the daily checks of the radiation monitor located in the ^{60}Co teletherapy treatment room. The individuals who perform the daily checks have been retrained in the 10CFR Part 35 requirements and they understand the importance of faithfully performing and recording the checks. In addition to the retraining, a policy has been implemented that requires a second person to monitor whether the daily check has been performed and recorded each day before the unit is used for patient treatments. The licensee is in full compliance with the 10CFR 35.615(d) (4) requirement.

trust that this response will satisfy the Commission.

In closing, I would like to acknowledge, on behalf of the licensee, the quality of the recent inspection. Mr. Shear, with assistance from Mr. Mumper, conducted a very thorough inspection and made many constructive suggestions for our radiation safety program. We truly enjoyed and benefited from the excellent work of a very capable inspector.

Sincerely,

John Eichling

John Eichling, Ph.D.
Radiation Safety Officer

JE:fl

cc: Robert Hickok
Assistant Vice Chancellor, Assistant Dean
and Chief Facilities Officer

Carlos Perez, M.D.
Chairman, Radiation Safety Committee

Revision 1*
October 1980

U.S. NUCLEAR REGULATORY COMMISSION

REGULATORY GUIDE

OFFICE OF STANDARDS DEVELOPMENT

REGULATORY GUIDE 10.8

GUIDE FOR THE PREPARATION OF APPLICATIONS FOR MEDICAL PROGRAMS

1. INTRODUCTION

1.1 Purpose of Guide

This guide describes the type and extent of information needed by the Nuclear Regulatory Commission (NRC) staff to evaluate an application for a specific license for the possession of byproduct material (reactor-produced radionuclides) and its use in or on human beings. This type of license is provided for under 10 CFR Part 35, "Human Uses of Byproduct Material." This guide does not cover requirements for naturally occurring or accelerator-produced radioactive materials that may be subject to licensing by individual States. This guide is also not applicable to academic programs, including medical, on campuses that do not include hospitals or clinics where byproduct material is used in or on humans. Guidance for medical teaching programs that do not involve human use is provided in Regulatory Guide 10.2, "Guidance to Academic Institutions Applying for Specific Byproduct Material Licenses of Limited Scope," or in Regulatory Guide 10.5, "Guide for the Preparation of Applications for Type A Licenses of Broad Scope for Byproduct Material."

The NRC will usually issue a single byproduct material license to cover an institution's entire radioisotope program other than teletherapy. Separate licenses, except for teletherapy, are not normally issued to different departments of a medical institution, nor are they issued to individuals associated with the hospital.

The applicant should carefully study the regulations (see Section 1.2 of this guide) and this guide and should submit all information requested. The NRC will request additional information when necessary to provide reasonable assurance that the applicant has established an adequate radiation safety program. Such requests will delay final action on the application.

1.2 Applicable Regulations

In addition to 10 CFR Part 35, other regulations pertaining to this type of license are found in 10 CFR Part 19, "Notices, Instructions and Reports to Workers: Inspections" 10 CFR Part 20, "Standards for Protection Against Radiation" ;10 CFR Part 21, "Reporting of Defects and Noncompliance"; 10 CFR Part 30, "Rules of General Applicability to Domestic Licensing of Byproduct Material"; and 10 CFR Part 170, "Fees for Facilities and Materials Licenses and Other Regulatory Services Under the Atomic Energy Act of 1954, As Amended."

1.3 Items Requiring Separate Applications

Teletherapy. A separate application should be submitted for kilocurie sources used in teletherapy facilities. A specific licensing guide for teletherapy applications is available upon request from the Material Licensing Branch, Division of Fuel Cycle and Material Safety, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555.

Source and Special Nuclear Materials. Except for depleted uranium used for shielding in linear accelerators or teletherapy devices, separate applications should be submitted for these materials in accordance with 10 CFR Part 40, "Domestic Licensing of Source Material," and Part 70, "Domestic Licensing of Special Nuclear Material." Source material is defined in paragraph 40.4(h) of 10 CFR Part 40 as (1) uranium or thorium, or any combination thereof, in any physical or chemical form or (2) ores that contain by weight 1/20 of one percent (0.05%) or more of (a) uranium, (b) thorium, or (c) any combination thereof. Source material does not include special nuclear material.

Special nuclear material is defined in paragraph 70.4(m) of 10 CFR Part 70 and includes (1) plutonium, uranium-233,

*The substantial number of changes in this revision has made it impractical to indicate the changes with lines in the margin.

APPENDIX I

AREA SURVEY PROCEDURES

1. All elution, preparation, and injection areas will be surveyed daily with an appropriately low-range survey meter and decontaminated if necessary.*

2. Laboratory areas where only small quantities of radioactive material are used (less than 200 μCi) will be surveyed monthly.

3. Waste storage areas and all other laboratory areas will be surveyed weekly.

4. The weekly and monthly surveys will consist of:

   a. A measurement of radiation levels with a survey meter sufficiently sensitive to detect 0.1 mR/hr.

   b. A series of wipe tests to measure contamination levels. The method for performing wipe tests will be sufficiently sensitive to detect 200 dpm per 100 cm^2 for the contaminant involved. Wipes of elution and preparation areas or other "high background" areas will be removed to a low background area for measurement.

5. A permanent record will be kept of all survey results, including negative results. The record will include:

   a. Location, date, and identification of equipment used, including the serial number and pertinent counting efficiencies.

   b. Name of person conducting the survey.

   c. Drawing of area surveyed, identifying relevant features such as active storage areas, active waste areas, etc.

   d. Measured exposure rates, keyed to location on the drawing (point out rates that require corrective action).

   e. Detected contamination levels, keyed to locations on drawing.

   f. Corrective action taken in the case of contamination or excessive exposure rates, reduced contamination levels or exposure rates after corrective action, and any appropriate comments.

6. Area will be cleaned if the contamination level exceeds 200 dpm/100 cm^2.

* For daily surveys where no abnormal exposures are found, only the date, the identification of the person performing the survey, and the survey results will be recorded.