

NUCLEAR SCIENCE CENTER

Reactor Operator and Senior Reactor Operator
Requalification Program
Revision III

June 1979
Texas A&M University
College Station, Texas

7907100 368

324 314

TABLE OF CONTENTS

- 1.0 Purpose
- 2.0 Classroom Retraining
 - 2.1 Lectures
 - 2.2 Licensee Evaluation
- 3.0 Control Room Proficiency
 - 3.1 Console Manipulations
 - 3.2 License Evaluation
- 4.0 Operator Reinstatement
- 5.0 Records
- 6.0 Exemptions

Reactor Operator and Senior Reactor Operator
Requalification Program
Revision III

1.0 PURPOSE

To insure that all operating personnel maintain proficiency at a level equal to or greater than that required for initial licensing.

2.0 CLASSROOM RETRAINING

2.1 Lectures

To keep operations personnel aware of facility changes, Nuclear Science Center Operations (NSC) Memos are distributed on a timely basis. These changes are also covered in periodic operations staff meetings. However, to provide assurance that all licensed personnel are current in their understanding of the facility a lecture program will be presented to retrain the licensee and inform him of modifications and changes. Basic theory and other pertinent items will also be covered. One or more lectures will be scheduled within a 4 month interval to cover a topic selected from the list below. The lecture sequence over all topics will take 2 years to complete and will then be repeated.

2.1.1. Theory and Principles of Operation

2.1.2. Reactor Regulations

- a. 10CFR
- b. Technical Specifications
- c. Regulatory Guides
- d. SOP's
- e. Experiment Authorizations
- f. etc.

2.1.3. Reactor Design

- a. Facility Operating Characteristics
- b. Instrumentation and Control
- c. Facility Protection and Engineered Safety Systems

2.1.4. Reactor Support Systems

2.1.5. Radiation Control and Safety

2.1.6. Emergency Plans

2.2 Licensee Evaluation

At the completion of each 4 months lecture program an examination will be given to insure that each licensee has maintained his knowledge at a proper level. The examinations will be designed so that a score of 70 or better will be considered as a satisfactory performance. Any licensee who scores less than 70 will be removed from his licensed duties and enrolled in an accelerated retraining program until he demonstrates acceptable proficiency. Any licensee with a score of better than 70 but less than 80 will be tutored in that category to improve his performance level.

324 316

3.0 CONTROL ROOM PROFICIENCY

3.1 Console Manipulations

At intervals not to exceed 4 months, each licensee shall execute his licensed responsibilities. As a minimum, each licensee will either perform or supervise 2 reactivity manipulations during this interval. The 12 reactivity manipulations that will be performed during a 2 year interval must include 1 startup and 1 pulse if the pulsing mode is active.

3.2 Licensee Evaluation

At least once a year the licensee shall be examined on the console by the Director or his designee. A performance evaluation form will be completed and filed in the licensee's folder. Any licensee exhibiting deficiencies will immediately start an accelerated retraining program designed to correct the specific difficulties.

4.0 OPERATOR REINSTATEMENT

If a licensee has not actively performed the functions of an operator or senior operator for a period of more than four months, he shall satisfactorily demonstrate his competence before resuming his duties. He shall do this by satisfactorily completing the performance evaluation form discussed in Section III B. He will also be briefed of any changes to the facility or procedures. When his competence has been satisfactorily demonstrated, the Director will so certify to the Commission.

5.0 RECORDS

Records will be maintained to document the performance of each licensed operator and senior reactor operator participating in the program. The record will contain copies of the written examinations administered and answers, and results of the console manipulation evaluations. Any additional training and testing required for individuals exhibiting deficiencies will also be documented.

6.0 EXEMPTIONS

The Director and the Associate Director will be responsible for evaluating the written examinations and will be exempt from taking them. One additional licensee from the Reactor Operations Staff or NSC Management may be exempt from an examination. This must be a qualified individual who has presented lectures and prepared the questions for that examination. No exemptions to the physical manipulation requirements will be granted to any licensee.

324 317

SPECIAL NUCLEAR MATERIAL REQUIREMENTS
FOR THE
TEXAS A&M UNIVERSITY
NUCLEAR SCIENCE CENTER REACTOR

R-83 DOCKET NO. 50-128

June 1979

SNM License requirements for operation of the NSCR are as follows:

1. To receive, possess, and use up to 17.0 kilograms of contained uranium-235 in connection with operation of the reactor and 200 grams of contained uranium-235 in one MTR-type fuel element.
2. To receive, possess, and use in connection with operation of the reactor a twenty-curie encapsulated polonium-beryllium neutron source and a three-curie encapsulated americium-beryllium neutron source and to possess but not to separate such byproduct material as may be produced by operation of the reactor.

Other SNM material such as uranium-235 lined fission chambers used in connection with operation of the reactor shall be authorized by license SNM 15-18 issued to Texas A&M University.

The NSCR operates using standard TRIGA and/or FLIP fuel. All standard TRIGA fuel at the NSCR is irradiated fuel and is less than 20% enriched in uranium-235 and is exempt from certain physical protection requirements pursuant to 10 CFR 73.6.(a). FLIP TRIGA fuel has an enrichment in uranium-235 of 70%. FLIP fuel at the NSCR is also exempt pursuant to 73.6.(b) by maintaining self protecting radiation dose levels for fuel quantities in excess of the 5,000 gram formula limit.

Attached is a current SNM inventory for License R-83.

March 31, 1979

Inventory Summary (Grams)

Location	<u>FLIP (70%)</u>		<u>STANDARD (20%)</u>		<u>MTR (93%)</u>	
	Element	Isotope	Element	Isotope	Element	Isotope
Incore	9914.326	6776.009	6550.905	1043.342	-----	-----
Storage (Irradiated)	6682.142	4636.425	14765.830	2557.173	-----	-----
Storage (Unirradiated)	334.080	233.820	-----	-----	206.64	192.57
Storage (General Atomic)	1925.000	1348.000	-----	-----	-----	-----
Total	18855.548	12994.254	21316.735	3600.515	206.64	192.57

Total Inventory (Grams)

Element	Isotope
40,378.92	16,787.34

Fuel Element Count at the NSCR

	FLIP	STANDARD	MTR
In Core	59	39	0
Pool Wall Storage Racks	39	19	0
Pool Floor Storage Rack	0	68	0
Fuel Storage Room	2	0	1
TOTAL FUEL ELEMENTS	100	126	1

Fuel Element Count at General Atomic

FLIP elements ready for shipment	10 ea.
FLIP instrumented element ready for shipment	1 ea.

324 319