

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
WASHINGTON, D.C. 20555

September 10, 1980

IE Circular No. 80-21: REGULATION OF REFUELING CREWS

Description of Circumstances:

Recent inspections of refueling activities indicate that some licensees have misinterpreted the regulatory requirements applicable to fuel handling activities. Therefore, it appears appropriate to identify those specific regulatory requirements that are applicable to core alterations which include reactivity manipulations that may result from the handling of fuel elements, control rods, etc.

A. 10 CFR Requirements

1. 10 CFR 50.2(f) and 10 CFR 55.4:

"Controls" when used with respect to a nuclear reactor means apparatus and mechanisms, the manipulation of which directly affect the reactivity or power level of the reactor.

2. 10 CFR 50.54(i):

Except as provided in 55.9 of this chapter, the licensee shall not permit the manipulation of the controls of any facility by anyone who is not a licensed operator or senior operator as provided in Part 55 of this chapter.

3. 10 CFR 55.3:

No person may perform the function of an operator as defined in this part except as authorized by a license issued by the Commission;

4. 10 CFR 55.4:

"Operator" is any individual who manipulates a control of a facility. An individual is deemed to manipulate a control if he directs another to manipulate a control.

"Senior Operator" is any individual designated by a facility licensee under Part 50 of this chapter to direct the licensed activities of licensed operators.

5. 10 CFR 55.9:

Nothing in this part shall be deemed to require a license for:

- a. An individual who manipulates the controls of a research or training reactor as part of his training as a student in a

nuclear engineering course under the direction and in the presence of a licensed operator or senior operator;

- b. An individual who manipulates the controls of a facility as a part of his training to qualify for an operator license under this part under the direction and in the presence of a licensed operator or senior operator.

B. Technical Specifications

Standard Technical Specifications require that all core alterations be directly supervised by either a Licensed Senior Reactor Operator or a Senior Reactor Operator limited to fuel handling, who has no other concurrent responsibilities during this operation. The NRC interprets the term "directly supervised" to mean that the SRO is supervising the core alterations from the refueling deck.

We note that the Licensed Senior Reactor Operator limited to fuel handling classification was developed for specialized fuel handling crews. In this case an individual identified as a Refueling Foreman is responsible for refueling activities subject to the following provisions:

1. The foreman shall have a Senior Operator's License limited to the fuel handling duties.
2. The foreman shall directly supervise (from the refueling deck) the movement of fuel in and out of the reactor.
3. The unlicensed members of the crew shall participate in appropriate facility administered training programs and be facility certified to perform their duties.
4. Direct communication will be maintained with a licensed individual in the control room when fuel movements over the core are being made.
5. The foreman will exercise indirect supervision over all other fuel handling operations.

Based on the NRC regulations delineated in Item A above, the individual manipulating the fuel-handling equipment over the reactor must be an NRC Licensed Reactor Operator (RO) unless the facility Technical Specifications include provisions for the operation to be supervised by an SRO or SRO limited to fuel-handling as described in Item B. During any core alteration, a licensed individual must also be observing reactivity monitors in the Control Room with appropriate communications established with personnel on the fuel handling equipment. In addition, personnel participating directly in the core alternations must meet the qualification and training requirements committed to in the FSAR or fuel loading application, i.e., ANSI N18.1-1971 or ANSI/ANS 3.1-1978.

Recommended Action for Licensee Consideration

Our routine inspection program for refueling activities is based on the above NRC requirements. Therefore, we recommend that all reactor licensees review procedures and practices to assure that the individuals responsible for and participating in refueling activities are in conformance with the above requirements.

No written response to this Circular is required. If you require additional information with regard to this subject, please contact this office.

RECENTLY ISSUED
IE CIRCULARS

Circular No.	Subject	Date of Issue	Issued to
80-20	Changes in Safe-Slab Tank Dimensions	8/21/80	All Part 50 and Part 70 fuel facility licensees
80-19	Noncompliance with License Requirements for Medical Licensees	8/26/80	All medical licensees
80-18	10 CFR 50.59 Safety Evaluations for Changes to Radioactive Waste Treatment Systems	8/22/80	All power reactor facilities with an OL or CP
80-17	Fuel Pin Damage Due to Water Jet from Baffle Plate Corner	7/23/80	All holders of PWR OLs and PWR CPs
80-16	Operational Deficiencies In Rosemount Model 510DU Trip Units And Model 1152 Pressure Transmitters	6/27/80	All power reactor facilities with an OL or a CP
80-15	Loss of Reactor Coolant Pump Cooling and Natural Circulation Cooldown	6/20/80	All power reactor facilities with an OL or CP
80-14	Radioactive Contamination of Plant Demineralized Water System and Resultant Internal Contamination of Personnel	6/24/80	All holders of power and research reactor licenses (operating and construction permits), and fuel cycle licensees
80-13	Grid Strap Damage in Westinghouse Fuel Assemblies	5/18/80	All holders of reactor OLs and CPs
80-12	Valve-Shaft-To-Actuator Key May Fall Out of Place When Mounted Below Horizontal Axis	5/14/80	All holders of reactor OLs and CPs
80-11	Emergency Diesel Generator Lube Oil Cooler Failures	5/13/80	All holders of a power reactor OL or CP
80-10	Failure to Maintain Environmental Qualification of Equipment	4/29/80	All holders of reactor OLs and CPs