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

MAR 18 1977

MEMORANDUM FOR: Karl R. Goller, Assistant Director for Operating Reactors, DOR

FROM: Darrell G. Eisenhut, Assistant Director for Operational Technology, DOR

SUBJECT: SAFETY EVALUATION OF THE PROPOSED YANKEE ATOMIC POWER COMPANY'S MODIFICATION OF THEIR TECHNICAL SPECIFICATIONS RELATING TO HIGH RADIATION AREAS (TAC's 6120, 6106 AND 6164)

Attached to this memorandum is the Environmental Evaluation Branch's Safety Evaluation of a modification to the section of the technical specification relevant to entry into high radiation areas proposed by Yankee Atomic Power Company with respect to Yankee Rowe, Maine Yankee and Vermont Yankee. We performed this evaluation based on amendment requests by the Yankee Atomic Power Company for each of their reactors. The change which we are approving contains a number of modifications which have been agreed to by the licensee. Enclosure 1 is the present Standard Technical Specification; Enclosure 2 is the change which we find acceptable; and Enclosure 3 is the staff's Safety Evaluation of the change. The EEB staff has been in consultation with DSE and I&E who have no problems with this proposal. We recommend that Attachment 2 be adopted as the Standard Technical Specification on High Radiation Areas.

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f. Unless otherwise authorized by the Commission, the licensee shall not assign protection factors in excess of those specified in Table 6.12-1 in selecting and using respiratory protective equipment.

REVOCATION

6.12.3 The specifications of Section 6.12 shall be revoked in their entirety upon adoption of the proposed change to 10 CFR 20, Section 20.103, which would make such provisions unnecessary.

6.13 HIGH RADIATION AREA (OPTIONAL)

6.13.1 In lieu of the "control device" or "alarm signal" required by paragraph 20.203(c)(2) of 10 CFR 20:

a. A High Radiation Area in which the intensity of radiation is greater than 100 mrem/hr but less than 1000 mrem/hr shall be barricaded and conspicuously posted as a High Radiation Area and entrance thereto shall be controlled by issuance of a Radiation Work Permit and any individual or group of individuals permitted to enter such areas shall be provided with a radiation monitoring device which continuously indicates the radiation dose rate in the area.

b. A High Radiation Area in which the intensity of radiation is greater than 1000 mrem/hr shall be subject to the provisions of 6.13.1.a above, and in addition locked doors shall be provided to prevent unauthorized entry into such areas and the keys shall be maintained under the administrative control of the (Shift Supervisor) on duty.

ENCLOSURE 1

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B. Paragraph 20.203 "Caution signs, labels, signals, and controls". In lieu of the "control device" or alarm signal required by paragraph 20.203(c)(2), each high radiation area in which the intensity of radiation is 1000 mrem/hr or less shall be barricaded and conspicuously posted as a high radiation area and entrance thereto shall be controlled by requiring issuance of a Radiation Work Permit*. Any individual or group of individuals permitted to enter such areas shall be provided with one or more of the following:

(1) A radiation monitoring device which continuously indicates the radiation dose rate in the area.

(2) A radiation monitoring device which continuously integrates the radiation dose rate in the area and alarms when a preset integrated dose is received. Entry into such areas with this monitoring device may be made after the dose rate level in the area have been established and personnel have been made knowledgeable of them.

(3) A health physics qualified individual (i.e., qualified in radiation protection procedures) with a radiation dose rate monitoring device who is responsible for providing positive control over the activities within the area and who will perform periodic radiation surveillance at the frequency specified in the RWP. The surveillance frequency will be established by the Plant Health Physicist.

The above procedure shall also apply to each high radiation area in which the intensity of radiation is greater than 1000 mrem/hr. In addition, locked doors shall be provided to prevent unauthorized entry into such areas and the keys shall be maintained under the administrative control of the shift supervisor on duty and/or the Plant Health Physicist.

*Health Physics personnel shall be exempt from the RWP issuance requirement during the performance of their assigned radiation protection duties, providing they are following plant radiation protection procedures for entry into high radiation areas.

ENCLOSURE 3

SAFETY EVALUATION

YANKEE ATOMIC POWER COMPANY

YANKEE ROWE

Introduction

The Yankee Atomic Power Company has proposed a modification to that section of their Technical Specifications which relates to entry into high radiation areas. The change would allow the use of radiation dose integrating devices with an alarm feature, and/or direct observation of ongoing work by health physics qualified personnel as options for entry into high radiation areas as an alternative to the current technical specification which states that "any individual or group of individuals permitted to enter such areas shall be provided with a radiation monitoring device which continuously indicates the radiation dose rate in the area." The change is intended to provide better exposure control, during certain operations, by use of electronic devices, which alarm after pre-set doses have been reached, in lieu of administrative controls which are exercised by the use of dose rate measurements and commensurate "stay times" calculated to receive the same pre-set dose. Also, under conditions of a major shutdown, use of health physics qualified individuals to perform independent periodic radiation surveys when large numbers of jobs were going on in different high radiation areas, would be more desirable than non-health physics qualified individuals in each area performing this surveillance function in addition to their operational work.

The licensee has also proposed that Health Physics personnel be exempt from the Radiation Work Permit (RWP) issuance requirement of the

technical specifications which states that entrance into a high radiation area "shall be controlled by requiring issuance of an RWP ....." Health Physics department personnel are qualified to evaluate and set radiological standards for specific activities in specific areas. It is therefore inconsistent that they be RWP controlled.

Evaluation

With respect to the personnel alarm dosimeter proposal, we have evaluated the licensee's rationale for using these devices and their safety considerations with respect to radiation exposure control. We find that since personnel integrating alarm dosimeters are state-of-the-art instruments in radiation protection programs, and since their use is practicable and desirable in areas where high radiation levels may vary significantly within the area and dose rate meters may not be practicable for monitoring to as low as is reasonably achievable exposures because there is a continuing need for adjustment of stay time determinations, then the proposed technical specification change is acceptable for radiation personnel monitoring in high radiation areas. It should be noted that the change requires that each individual wearing these devices is to be made aware of the radiation levels prior to entry into the high radiation area of interest.

Additionally, we approve of the alternative for use of a health physics qualified individual (i.e., qualified in radiation protection procedures as shown in Appendix 1.) using a dose rate monitoring device to periodically

monitor areas, at the frequency specified by the Plant Health Physicist, as an effective method for ensuring control of radiation exposure to people in high radiation areas. By so doing, positive control over the activities of those people working in the area would be exercised by an independent person who would assure radiation protection management that the conditions of the RWP were being properly administered. Health Physics personnel should be exempt from RWP issuance since these individuals are required to provide the radiation protection control techniques, as specified in the RWP, and therefore must enter high radiation areas in order to perform relevant radiological surveillance. Furthermore, they are required to follow plant radiation protection procedures prior to entry into high radiation areas which they have also written. We therefore accept this proposed modification of the technical specifications.

CRITERIA FOR "INDIVIDUALS QUALIFIED IN RADIATION PROTECTION PROCEDURES"

An individual is considered to be qualified in radiation protection procedures when a licensee certifies that each designated individual is capable of successfully accomplishing the following activities as required by federal regulations, license conditions, and facility procedures pertaining to radiation protection.

1. Conduct special and routine radiation, contamination and airborne radioactivity surveys and evaluate the results.

2. Establish protective barriers and post appropriate radiological signs.

3. Establish means of limiting exposure rates and accumulated radiation doses, including the use of protective clothing and respiratory protection equipment.

4. Perform operability checks of radiation monitors and survey meters.

5. Recommend appropriate immediate actions in the event of a radiological problem and perform necessary activities until the arrival of health physics personnel.

6. Conduct other routine radiological duties (e.g., TS surveillance items) as may be required on backshifts or weekends.