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1.39 DOSE EQUIVALENT I-131

DOSE EQUIVALENT I-131 shall be that concentration of I-131 microcuries per gram which alone would produce the same thyroid dose as the quantity and isotopic mixture of I-131, I-132, I-133, I-134, and I-135 actually present. The thyroid dose conversion factors used for this calculation shall be those listed in Table E-7 of Regulatory Guide 1.109, "Calculation of Annual Doses to Man from Routine Releases of Reactor Effluences for the Purpose of Evaluating Compliance with 10 CFR Part 50 Appendix I".

3.6 Radioactive Effluents

Applicability: Applies to the radioactive effluents of the facility.

Objective: To assure that radioactive material is not released to the environment in an uncontrolled manner and to assure that the radioactive concentrations of any material released is kept as low as is reasonably achievable and, in any event, within the limits of 10 CFR part 20.106 and 40 CFR Part 190.10(a).

Specification

3.6.A. Reactor Coolant Radioactivity

The specific activity of the primary coolant except during REFUEL MODE shall be limited to: Less than or equal to 0.2 microcuries per gram DOSE EQUIVALENT (D.E.) I-131.

Limiting Condition for Operation

1. Whenever an isotopic analysis shows reactor coolant activity exceeds 0.2 uCi/gram DOSE EQUIVALENT (D.E.) I-131, operation may continue for up to 48 hours. Additional analyses shall be done at least once per 4 hours until the specific activity of the primary coolant is restored to within its limit.

2. If the reactor coolant activity is greater than 0.2 microcuries per gram DOSE EQUIVALENT I-131 for more than 48 hours during one continuous time interval or greater than 4.0 microcuries per gram D.E. I-131, be in at least SHUTDOWN CONDITION within 12 hours.

3. Annual Reporting Requirement

   The results of specific activity analyses in which the reactor coolant exceeded the limits of Specification 3.6.A shall be reported on an annual basis. The following information shall be included: (1) Reactor power history starting 48 hours prior to the first sample in which the limit was exceeded until after the radioiodine activity is reduced to less than the limit; (2) Results of the last isotopic analysis for radioiodine performed prior to exceeding the limit, results of analysis while

limit was exceeded and results of one analysis after radioiodine activity was reduced to less than the limit. Each result should include date and time of sampling and the radioiodine concentrations; (3) Clean-up system flow history starting 48 hours prior to the first sample in which the limit was exceeded until after the radioiodine activity is reduced to less than the limit; (4) Graph of the I-131 concentration and one other radioiodine isotope concentration in microcuries per gram as a function of time for the duration of the specific activity above the steady-state level; and (5) The time duration when the specific activity of the primary coolant exceeded the radioiodine limit.

4. With the reactor mode switch in Run or Startup position, with:

   1. Thermal power changed by more than 15% of rated thermal power in one hour*, or

   2. The off-gas level, at the SJAE, increased by more than 10,000 microcuries per second in one hour during steady state operation at release rates less than 75,000 microcuries per second, or

   3. The off-gas level, at the SJAE, increased by more than 15% in one hour during steady state operation at release rates greater than 75,000 microcuries per second,

   take sample and analyze at least one sample, between 2 and 6 hours following the change in thermal power or off-gas level and at least once per four hours thereafter, until the specific activity of the primary coolant is restored to within limits.

3.6.B Liquid Radwaste Treatment

Applicability: To liquid radwaste batches before discharge as aqueous effluent.

* If there are consecutive thermal power changes by more than 15% per hour, take sample and analyze at least one sample between 2 and 6 hours following the change and at least once per four hours thereafter, until the specific activity of the primary coolant is restored to within limits.

Basis:

3.6.A 10CFR100, as implemented by SRP Section 15.6.4, requires that the radiological consequences of failure of a main steam line outside containment be limited to small fractions of the exposure guidelines of 10CFR100. During Systematic Evaluation Program (SEP) for Oyster Creek, an independent assessment of the radiological consequences of a main steam line failure outside containment (SEP Topic XV-18) was performed by the NRC staff. The assessment determined that if the existing Oyster Creek Technical Specification limit for primary coolant iodine activity (8.0 uCi total iodine per gram) is used, the potential offsite doses would exceed the applicable dose limit. The staff recommended that Oyster Creek maintain the primary coolant radioiodine activity within the General Electric Standard Technical Specification (NUREG-0123) limit (0.2 uCi/gram DOSE EQUIVALENT I-131), which would meet the acceptance criteria.

However, the Staff's analyses for Oyster Creek showed that small-line failures are more limiting than the main steam line failure. 10CFR100, as implemented by SRP Section 15.6.2, requires that the radiological consequences of failure of small lines carrying primary coolant outside containment be limited to small fractions of the exposure guidelines of 10CFR100. During the evaluation of SEP Topic XV-16 "Radiological Consequences of Failure of Small Lines Carrying Primary Coolant Outside Containment" the Staff determined that Oyster Creek does not comply with current acceptance criteria. The Staff recommended that the General Electric Standard Technical Specification (NUREG-0123) limit (0.2 uCi/gram DOSE EQUIVALENT I-131) for reactor coolant radioiodine activity be adopted in order to ensure that the radiological consequences to the environment from a failure of small lines are acceptably low.

The LCO statement permitting power operation to continue for limited time periods with the primary coolant's specific activity greater than 0.2 microcuries per gram DOSE EQUIVALENT I-131, but less than or equal to 4.0 microcuries per gram DOSE EQUIVALENT I-131, accommodates possible iodine spiking phenomenon which may occur following changes in thermal power. The reporting of cumulative operating time with greater than 0.2 microcuries per gram DOSE EQUIVALENT I-131 will allow sufficient time for Commission to evaluate the circumstances.

Information obtained on iodine spiking will be used to assess the parameters associated with spiking phenomena. A reduction in frequency of isotopic analysis following power changes may be permissible if justified by the data obtained.

The surveillance requirements provide adequate assurance that excessive specific activity levels in the reactor coolant will be detected in sufficient time to take corrective action.

3.6.B This specification implements the requirements of 10 CFR 50.36a related to operation of radioactive waste treatment equipment to keep radioactive material in effluents to unrestricted areas as low as reasonably achievable. Radioactive liquid wastes generated at the OCNGS are controlled on a batch basis with each batch processed by a method appropriate for the quality and concentration of material present. Below 0.001 uCi/ml, it is not cost-beneficial to treat a batch of aqueous waste for the purpose of reducing potential radiation exposure offsite. Hence specification 3.6.B implements 10 CFR Part 50 Appendix I provisions for cost-beneficial treatment of radioactive liquid waste before release in effluent. Each batch of radioactive liquid waste is sampled and analyzed for radioactivity before release to the discharge canal so that an appropriate discharge rate can be determined, accounting for dilution by condenser cooling water and/or canal flow.

4.6 RADIOACTIVE EFFLUENT

Applicability: Applies to monitoring of gaseous and liquid radioactive effluents of the Station during release of effluents via the monitored pathway(s). Each Surveillance Requirement applies whenever the corresponding Specification is applicable unless otherwise stated in an individual Surveillance Requirement. Surveillance Requirements do not have to be performed on inoperable equipment.

Objective: To measure radioactive effluents adequately to verify that radioactive effluents are as low as is reasonable achievable and within the limit of 10 CFR Part 20.106.

Specification:

A. Reactor Coolant

Reactor coolant shall be sampled and analyzed at least once every 72 hours for DOSE EQUIVALENT I-131 during RUN MODE, STARTUP MODE and SHUTDOWN CONDITION.

B. (See 4.6.I)

C. Radioactive Liquid Storage

1. Liquids contained in the following tanks shall be sampled and analyzed for radioactivity at least once per 7 days when radioactive liquid is being added to the tank:

   a. Waste Surge Tank, HP-T-3;

   b. Condensate Storage Tank.

D. Main Condenser Offgas Treatment

1. Operation of the Offgas System charcoal absorbers shall be verified by verifying the AOG System bypass valve (V-7-31) alignment or alignment indication closed at least once every 12 hours whenever the main condenser air ejector is operating.

E. Main Condenser Offgas Radioactivity

1. The gross radioactivity in fission gases discharged from the main condenser air ejector shall be measured by sampling and analyzing the gases.

   a. at least once per month, and

   b. When the reactor is operating at more than 40 percent of rated power, within 4 hours after an increase in the fission gas release via the air ejector of more than 50 percent, as indicated by the Condenser Air Ejector Offgas Radioactivity Monitor after factoring out increase(s) due to change(s) in the thermal power level.

OYSTER CREEK NUCLEAR GENERATING STATION
PROVISIONAL OPERATING LICENSE NO. DPR-16
DOCKET NO. 50-219
TECHNICAL SPECIFICATION CHANGE REQUEST NO. 148 REV. 1

Pursuant to 10 CFR 50.91, an analysis concerning significant hazards considerations is provided below:

1. Sections to be changed:

Table of Contents, 1.39 and 1.40, sections: 3.6 and 4.6.

2. Extent of changes:

To incorporate radioiodine limits in reactor coolant system, appropriate limiting conditions for operation and sampling and analysis requirements for iodine following changes in thermal power or offgas level as shown in Standard Technical Specifications for General Electric Boiling Water Reactors (NUREG-0123). Also to incorporate reporting requirements for radioiodine spiking as shown in NRC Generic Letter 85-19, "Reporting Requirement on Primary Coolant Iodine Spikes" and provide definitions for DOSE EQUIVALENT I-131 and HOT SHUTDOWN.

3. Changes Requested

The requested changes are shown on attached Technical Specification pages i, 1.0-7, 3.6-1a, 3.6-1b, 3.6-7a, 3.6-7b, and 4.6-1.

4. Discussion:

On October 23, 1986, GPUN submitted Technical Specification Change Request (TSCR) No. 148. The TSCR No. 148 proposed changes to sections 3.6 and 4.6 concerning reactor coolant system (RCS) radioiodine activity limits and surveillance requirements. It also included definition for DOSE EQUIVALENT (D.E.) Iodine I-131 and annual reporting requirement for radioiodine spiking. These changes were proposed following discussions with the NRC staff during the integrated assessment of the Systematic Evaluation Program (SEP) for Topic XV-16, "Radiological Consequences of Failure of Small Lines Carrying Primary Coolant Outside Containment" (IPSAR Section 4.36) and Topic XV-18, "Radiological Consequences of a Main Steam Line Failure Outside Containment" (IPSAR Section 4.37).

The proposed changes in TSCR 148 in general reflected provisions given in Standard Technical Specifications for General Electric Boiling Water Reactors (NUREG-0123) and NRC Generic Letter 85-19, "Reporting Requirement on Primary Coolant Iodine Spikes".

Subsequently, the staff requested re-submittal of the proposed changes with the following revisions:

1) Delete words "if inhaled by an adult" from the definition of DOSE EQUIVALENT (D.E.) I-131.

2) Incorporate provisions for performing additional analyses at least once per 4 hours until restoration when the coolant activity exceeds 0.2 uCi/gram D.E. I-131.

3) Eliminate provisions for allowing a second sample, and place the reactor in hot shutdown within 12 hours when the coolant activity exceeds 4 uCi/gram D.E. I-131.

4) Add sampling and analysis requirements for iodine following changes in thermal power or offgas level.

Above revisions were requested by the staff to be consistent with Standard Technical Specifications for General Electric Boiling Water Reactors (NUREG-0123).

TSCR 148, Rev. 1, therefore has been prepared in response to the request by the staff described above.

This change request provides definitions, limiting conditions for operation, surveillance, annual reporting requirement and sampling and analyses requirement to incorporate Standard Technical Specifications for General Electric Boiling water Reactors (NUREG-0123) and NRC Generic Letter 85-19, "Reporting Requirement on Primary Coolant Iodine Spikes". We have determined that this change request involves no significant hazards considerations in that operation of the Oyster Creek Plant in accordance with the proposed amendment will not:

1. Involve a significant increase in the probability of an accident previously evaluated, because the primary coolant activity is not an initiator of an accident. Also, the proposed change will not increase the consequences of an accident, because the proposed change, a reduction of the primary coolant activity limit, will not result in increased amount of radioactive release for design basis accidents previously evaluated; or

2. Create the probability of a new or different kind of accident from any accident previously evaluated because a bounding design basis accident associated with changes in the primary coolant activity level was already evaluated and reported in FSAR (i.e., Control Rod Drop Accident); or

3. Involve a significant reduction in a margin of safety because more restrictive limit for the primary coolant radio-iodine activity will increase a margin of safety.