7. Vermont Yankee will furnish advance notification of each scheduled calibration of liquid effluent monitors to MDPH and MDC and, upon request, will permit authorized representatives of the Commonwealth of Massachusetts to be present during such calibrations.

8. Vermont Yankee will permit authorized representatives of the MDPH and MDC to examine the chemical and radioactivity analyses performed by Vermont Yankee.

9. Vermont Yankee shall immediately notify MDPH, or an agency designated by MDPH, in the event concentrations of radioactive materials in liquid effluents, measured at the point of release from Vermont Yankee, exceed the limit set forth in the facility Offsite Dose Calculation Manual. Vermont Yankee will also notify MDPH in writing within 30 days following the release of radioactive materials in liquid effluents in excess of 10 percent of the limit set forth in the facility Offsite Dose Calculation Manual.

10. A report shall be submitted to MDPH and MDC within sixty days of January 1st and July 1st of each year of plant operation, specifying the total quantities of radioactive materials released to the Connecticut River during the previous six months. The report shall contain the following information:

    (a) Total curie activity discharged other than tritium and dissolved gases.

    (b) Total curie alpha activity discharged.

    (c) Total curies of tritium discharged.

    (d) Total curies of dissolved radio-gases discharged.

    (e) Total volume (in gallons) of liquid waste discharged.

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Z. Surveillance Interval - The surveillance interval is the calendar time between surveillance tests, checks, calibrations, and examinations to be performed upon an instrument or component when it is required to be operable. These tests unless otherwise stated in these specifications may be waived when the instrument, component, or system is not required to be operable, but these tests shall be performed on the instrument, component, or system prior to being required to be operable.

AA. Deleted

BB. Source Check - The qualitative assessment of channel response when the channel sensor is exposed to a radioactive source.

CC. Dose Equivalent I-131 - The dose equivalent I-131 shall be that concentration of I-131 (microcurie/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 NRC Regulatory Guide 1.109, Revision 1, October 1977.

DD. Deleted

EE. Deleted

FF. Deleted

GG. Deleted

HH. Deleted

II. Deleted

JJ. Deleted

KK. Deleted

LL. Deleted

MM. Deleted

NN. Core Operating Limits Report - The Core Operating Limits Report is the unit-specific document that provides core operating limits for the current operating reload cycle. These cycle-specific core operating limits shall be determined for each reload cycle in accordance with Specification 6.6.C. Plant operation within these operating limits is addressed in individual specifications.

BASES: 3.2 (Cont'd)

recirculation flow changes. This provides an effective rod block if core average power is increased above the power level specified at any flow rate.

For single recirculation loop operation, the APRM rod block trip setting is reduced in accordance with the analysis presented in NEDE-30060, February 1983. This adjustment accounts for the difference between the single loop and two-loop drive flow at the same core flow.

The IRM rod block function provides local as well as gross core protection. The scaling arrangement is such that trip setting is less than a factor of 10 above the indicated level. Analysis of the worst-case accident results in rod block action before MCPR approaches the fuel cladding integrity safety limit.

A downscale indication on an APRM or IRM is an indication the instrument has failed or the instrument is not sensitive enough. In either case, the instrument will not respond to changes in control rod motion and thus control rod motion is prevented.

To prevent excessive clad temperatures for the small pipe break, the HPCI or Automatic Depressurization System must function since, for these breaks, reactor pressure does not decrease rapidly enough to allow either core spray or LPCI to operate in time. For a break or other event occurring outside the drywell, the Automatic Depressurization System is initiated on low-low reactor water level only after a time delay. The arrangement of the tripping contacts is such as to provide this function when necessary and minimize spurious operation. The trip settings given in the Specification are adequate to ensure the above criteria are met. The Specification preserves the effectiveness of the system during periods of maintenance, testing, or calibration, and also minimizes the risk of inadvertent operation; i.e., only one instrument channel out of service.

The ADS is provided with inhibit switches to manually prevent automatic initiation during events where actuation would be undesirable, such as certain ATWS events. The system is also provided with an Appendix R inhibit switch to prevent inadvertent actuation of ADS during a fire which requires evacuation of the Control Room.

Four radiation monitors are provided which initiate isolation of the reactor building and operation of the standby gas treatment system. The monitors are located in the reactor building ventilation duct and on the refueling floor. Any one upscale trip or two downscale trips of either set of monitors will cause the desired action. Trip settings for the monitors on the refueling floor are based upon initiating normal ventilation isolation and standby gas treatment system operation so that none of the activity released during the refueling accident leave the Reactor Building via the normal ventilation stack but that all activity is processed by the standby gas treatment system. Trip settings for the monitors in the ventilation duct are based upon initiation of the normal ventilation isolation and standby gas treatment system operation at a radiation level equivalent to the maximum site boundary dose rate of 500 mrem/year as set forth in the Offsite Dose Calculation Manual. The monitoring system in the plant stack represents a backup to this system to limit gross radioactivity releases to the environs.

The purpose of isolating the mechanical vacuum pump line is to limit release of radioactivity from the main condenser. During an accident, fission products would be transported from the reactor through the main steam line to the main condenser. The fission product radioactivity would be sensed by the main steam line radiation monitors which initiate isolation.

BASES: 3.6 and 4.6 (Cont'd)

The actual shift in RT_{NDT} of the vessel material will be established periodically during operation by removing and evaluating, in accordance with ASTM E185 reactor vessel material irradiation surveillance specimens installed near the inside wall of the reactor vessel in the core area. Since the neutron spectra at the irradiation samples and vessel inside radius are essentially identical, the measured transition shift for a sample can be applied with confidence to the adjacent section of the reactor vessel. Battelle Columbus Laboratory Report BCL-585-84-3, dated May 15, 1984, provides this information for the ten-year surveillance capsule. In order to estimate the material properties at the 1/4 and 3/4 T positions in the vessel plate, the shift in RT_{NDT} is determined in accordance with Regulatory Guide 1.99, Revision 2. The heatup and cooldown curves must be recalculated when the ΔRT_{NDT} determined from the surveillance capsule is different from the calculated ΔRT_{NDT} for the equivalent capsule radiation exposure.

The pressure-temperature limit lines, shown on Figure 3.6.1, for reactor criticality and for inservice leak and hydrostatic testing have been provided to assure compliance with the minimum temperature requirements of Appendix G to 10CFR50 for reactor criticality and for inservice leak and hydrostatic testing.

The number of reactor vessel irradiation surveillance specimens and the frequencies for removing and testing these specimens are provided to assure compliance with the requirements of Appendix H to 10CFR Part 50.

B. Coolant Chemistry

A steady-state radioiodine concentration limit of 1.1 µCi of I-131 dose equivalent per gram of water in the Reactor Coolant System can be reached if the gross radioactivity in the gaseous effluents is near the limit, as set forth in the Offsite Dose Calculation Manual, or if there is a failure or prolonged shutdown of the cleanup demineralizer. In the event of a steam line rupture outside the drywell, the NRC staff calculations show the resultant radiological dose at the site boundary to be less than 30 Rem to the thyroid. This dose was calculated on the basis of the radioiodine concentration limit of 1.1 µCi of I-131 dose equivalent per gram of water, atmospheric diffusion from an equivalent elevated release of 10 meters at the nearest site boundary (190 m) for a $X/Q = 3.9 \times 10^{-3}$ sec/m^3 (Pasquill D and 0.33 m/sec equivalent), and a steam line isolation valve closure time of five seconds with a steam/water mass release of 30,000 pounds.

The iodine spike limit of four (4) microcuries of I-131 dose equivalent per gram of water provides an iodine peak or spike limit for the reactor coolant concentration to assure that the radiological consequences of a postulated LOCA are within 10CFR Part 100 dose guidelines.

The reactor coolant sample will be used to assure that the limit of Specification 3.6.B.1 is not exceeded. The radioiodine concentration would not be expected to change rapidly during steady-state operation over a period of 96 hours. In addition, the trend of the radioactive gaseous effluents, which is continuously monitored, is a good indicator of the trend of the radioiodine concentration in the reactor coolant. When a significant increase in radioactive gaseous effluents is indicated, as specified, an additional reactor coolant sample shall be taken and analyzed for radioactive iodine.

3.8 LIMITING CONDITIONS FOR OPERATION

3.8 RADIOATIVE EFFLUENTS

Applicability:

Applies to the release of all radioactive effluents from the plant.

Objective:

To assure that radioactive effluents are kept "as low as is reasonably achievable" in accordance with 10CFR50, Appendix I and, in any event, are within the dose limits for Members of the Public specified in 10CFR20.

Specification:

A. Deleted

B. Deleted

C. Deleted

D. Liquid Holdup Tanks

1. The quantity of radioactive material contained in any outside tank* shall be limited to less than or equal to 10 curies, excluding tritium and dissolved or entrained noble gases.

2. With the quantity of radioactive material in any outside tank* exceeding the limit of Specification 3.8.D.1, immediately take action to suspend all additions of radioactive material to the tank. Within 48 hours, reduce the tank contents to within the limit.

4.8 SURVEILLANCE REQUIREMENTS

4.8 RADIOACTIVE EFFLUENTS

Applicability:

Applies to the required surveillance of all radioactive effluents released from the plant.

Objective:

To ascertain that all radioactive effluents released from the plant are kept "as low as is reasonably achievable" in accordance with 10CFR50, Appendix I and, in any event, are within the dose limits for Members of the Public specified in 10CFR20.

Specification:

A. Deleted

B. Deleted

C. Deleted

D. Liquid Holdup Tanks

1. The quantity of radioactive material contained in each of the liquid holdup tanks* shall be determined to be within the limits of Specification 3.8.D.1 by analyzing a representative sample of the tank's contents within one week following the addition of radioactive materials to the tank. One sample may cover multiple additions.

*NOTE: Tanks included in this Specification are only those outdoor tanks that are not surrounded by liners, dikes, or walls capable of holding the tank's contents, or that do not have tank overflows and surrounding area drains connected to the liquid radwaste treatment system.

3.8 LIMITING CONDITIONS FOR OPERATION

E. Deleted

F. Deleted

G. Deleted

H. Deleted

I. Deleted

J. Explosive Gas Mixture

1. If the hydrogen concentration in the off-gas downstream of the operating recombiner reaches four percent, take appropriate action that will restore the concentration to within the limit within 48 hours.

4.8 SURVEILLANCE REQUIREMENTS

E. Deleted

F. Deleted

G. Deleted

H. Deleted

I. Deleted

J. Explosive Gas Mixture

1. The concentration of hydrogen in the off-gas system downstream of the recombiners shall be continuously monitored by the hydrogen monitor required operable by the Offsite Dose Calculation Manual.

3.8 LIMITING CONDITIONS FOR OPERATION

K. Steam Jet Air Ejector (SJAE)

1. Gross radioactivity release rate from the SJAE shall be limited to less than or equal to 0.16 Ci/sec (after 30 minutes decay).

2. With the gross radioactivity release rate at the SJAE exceeding the above limit, restore the gross radioactivity release rate to within its limit within 72 hours or be in at least Hot Standby within the subsequent 12 hours.

3. With the gross radioactivity release rate at the SJAE greater than or equal to 1.5 Ci/sec (after 30-minute decay), restore the gross radioactivity release rate to less than 1.5 Ci/sec (after 30-minute decay), or be in Hot Standby within 12 hours.

L. Deleted

M. Deleted

N. Deleted

4.8 SURVEILLANCE REQUIREMENTS

K. Steam Jet Air Ejector (SJAE)

1. The gross radioactivity release rate shall be continuously monitored in accordance with the Offsite Dose Calculation Manual.

2. The gross radioactivity release rate of noble gases from the SJAE shall be determined to be within the limit of Specification 3.8.K.1 at the following frequencies by performing an isotopic analysis (for Xe-138, Xe-135, Xe-133, Kr-88, Kr-85m, Kr-87) on a representative sample of gases taken at the discharge.

   a. Once per week.
   b. Within 4 hours following an increase of 25% or 5000 microcuries/sec, whichever is greater, in steady-state activity levels during steady-state reactor operation, as indicated by the SJAE monitor.

L. Deleted

M. Deleted

N. Deleted

BASES:

3.8 RADIOACTIVE EFFLUENTS

A. Deleted

B. Deleted

C. Deleted

D. Liquid Holdup Tanks

The tanks listed in this Specification include all outdoor tanks that contain radioactivity that are not surrounded by liners, dikes, or walls capable of holding the tank contents, or that do not have tank overflows and surrounding area drains connected to the liquid radwaste treatment system.

Restricting the quantity of radioactive material contained in the specified tanks provides assurance that in the event of an uncontrolled release of the tanks' contents, the resulting concentrations would be less than the limits of 10CFR Part 20.1001 -20.2401, Appendix B, Table 2, Column 2, at the nearest potable water supply and in the nearest surface water supply in an Unrestricted Area.

E. Deleted

F. Deleted

G. Deleted

H. Deleted

I. Deleted

J. Explosive Gas Mixture

The hydrogen monitors are used to detect possible hydrogen buildups which could result in a possible hydrogen explosion. Automatic isolation of the off-gas flow would prevent the hydrogen explosion and possible damage to the augmented off-gas system. Maintaining the concentration of hydrogen below its flammability limit provides ~~assurance~~ that the releases of radioactive materials will be controlled.

K. Steam Jet Air Ejector (SJAE)

Restricting the gross radioactivity release rate of gases from the main condenser SJAE provides reasonable assurance that the total body exposure to an individual at the exclusion area boundary will not exceed a small fraction of the limits of 10CFR Part 100 in the event this effluent is inadvertently discharged directly to the environment without treatment. This specification implements the requirements of General Design Criteria 60 and 64 of Appendix A to 10CFR Part 50.

BASES: 3.8 (Cont'd)

L. Deleted

M. Deleted

N. Deleted

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Sections 3.9 / 4.9 deleted

Pages 191 through 210 have been intentionally deleted.