2.0 ENVIRONMENTAL PROTECTION CONDITIONS

2.5.1 Liquid Waste Effluents (cont'd)

g. The maximum radioactivity to be contained in any liquid radwaste tank that can be discharged directly to the environs shall not exceed 10 Ci, excluding tritium and dissolved and entrained fission and activation gases.

h. If the cumulative release of radioactive materials in liquid effluents excluding tritium and dissolved and entrained fission and activation gases, exceeds 2.5 Ci per reactor in a calendar quarter, the licensee shall make an investigation to identify the causes of such releases, define and initiate a program of action to reduce such releases to the design objective levels listed in Section 2.5, and report these actions to the Commission within 30 days from the end of the quarter during which the release occurred.

2.5.2 Specifications for Gaseous Waste Discharges

a. (1) The release rate limit of noble gases from this site shall be:

$$\sum_{i=1}^{n} \left[DETB_i (8.0 \times 10^3) Q_{si} + DTB_i (1.3 \times 10^4) Q_{vi} \right] \leq 1$$

where Q_s = release rate from main stack in Ci/sec (elevated release)

Q_v = release rate from vents in Ci/sec (ground release)

i = the ith individual nuclide.
n = total number of nuclides.

$DETB_i$ = Total-body elevated release dose factor from Table 3.5-5a in mrem/Ci

DTB_i = Total-body dose factor from Table 3.5-5a in mrem-m^3/pCi-yr

3.0 SURVEILLANCE REQUIREMENTS

3.5.1 Liquid Waste Effluents (cont'd)

e. The flow rate of liquid radioactive waste shall be continually measured and recorded during release.

f. All liquid effluent radiation monitors shall be calibrated at least quarterly by means of a known radioactive source which has been calibrated to a National Bureau of Standards source. Each monitor shall also have a functional test monthly and an instrument check prior to making a release.

3.5.2 Specifications for Gaseous Waste Sampling and Monitoring

a. Plant records shall be maintained and records of the sampling and analysis results shall be submitted in accordance with Section 5.4 of these Specifications. Estimates of the sampling and analytical error associated with each reported value should be included.

b. Gaseous releases to the environment from the two reactor building vents, the two turbine building vents, and the off gas vent (stack), except as noted in Specification 3.5.2.c below, shall be continuously monitored for gross radioactivity and the flow measured and recorded. Whenever these monitors are inoperable, grab samples shall be taken and analyzed daily for gross gaseous radioactivity. If these monitors are inoperable for more than seven days, these releases shall be terminated or the plant shall be shut down.

c. An isotopic analysis shall be made of a representative sample of gaseous activity, excluding tritium, at the discharge of the steam jet air ejectors and at a point prior to dilution and discharge.
(1) at least monthly.

2.0 ENVIRONMENTAL PROTECTION CONDITIONS

2.5.2 Gaseous Waste Effluents (cont'd)

(2) The release rate limit of I-131 and radioactive materials in particulate form with half-lives greater than eight days, released to the environs as part of the gaseous wastes from the site shall be:

$$[3.7 \times 10^4]Q_s + [5.8 \times 10^6]Q_v \leq 1$$

where Q_s = release rate from the main stack in Ci/sec (as elevated release)

Q_v = release rate from the vents in Ci/sec (ground release)

b. Should any of the conditions of Specifications 2.5.2.b(1) or 2.5.2.b(2) listed below be exceeded, the licensee shall make an investigation to identify the causes of the release rates, define and initiate a program of action to reduce the release rates to design objective levels listed in Sections 2.5.a and 2.5.b for gaseous wastes and report these actions to the Commission within 30 days from the end of the calendar year during which the releases occurred.

(1) the average release rate of noble gases from the site during any calendar year should be:

$$\sum_{i \to 1}^{n} DAB_i[(4.0 \times 10^2)Q_{si} + (1.6 \times 10^5)Q_{vi}] \leq 1$$

and

$$\sum_{i \to 1}^{n} [DETA_i(1.9 \times 10^5)Q_{si} + DAG_i(3.2 \times 10^5)Q_{vi}] \leq 1$$

where Q_{si} = release rate of radioisotope i from the main stack in Ci/sec.

Q_{vi} = release rate of radioisotope i from the vents of each reactor in Ci/sec.

3.0 SURVEILLANCE REQUIREMENTS

3.5.2 Gaseous Waste Effluents (cont'd)

(2) within 1 month, following each refueling outage.

(3) within 72 hours, if the gaseous waste monitors indicate an increase of greater than 50% in the steady state fission gas release after factoring out increases due to power changes.

d. All waste gas effluent monitors shall be calibrated at least quarterly by means of a known radioactive source which has been calibrated to a National Bureau of Standards source. Each monitor shall have a functional test at least monthly and an instrument check at least daily excluding days of no discharge.

e. Sampling and analysis of radioactive material in gaseous waste, particulate form, and radioiodine shall be performed in accordance with Table 3.5-2.

2.0 ENVIRONMENTAL PROTECTION CONDITIONS	3.0 SURVEILLANCE REQUIREMENTS
2.5.2 Gaseous Waste Effluents (cont'd)	3.5.2 Gaseous Effluents (cont'd)
DAB_i = The beta air dose factor from Table 3.5-5a in mrad-m^3/pCi-yr $DETA_i$ = Gamma air elevated release dose factor from Table 3.5-5a in mrad/Ci DAG_i = The gamma air dose factor from Table 3.5-5a in mrad-m^3/pCi-yr	
(2) The average release rate from the site of I-131 and radioactive materials in particulate form with half-lives greater than eight days during any calendar year should be: $(6.56 \times 10^6 Q_S) + (7.46 \times 10^7 Q_V) \leq 1$ (If no teen, child or infant milk consumption) The consumption of milk must be demonstrated by the Radiological Environmental Monitoring Pro[illegible].2.7. If the Radiological Enviror[illegible] Monitoring Program determines [illegible] consumption of milk by teen, child, or infant the above equation shall be modified by the appropriate coefficient (Dose Factors) of Regulatory Guide 1.109.	f. Calculations for meeting the requirements of Specifications 2.5.2.b(1) and (2) shall be performed at least once every 31 days.
c. Should any of the conditions of Specifications 2.5.2.c(1) or 2.5.2.c(2) listed below be exceeded, the licensee shall make an investigation to identify the causes of the release rates, define and initiate a program of action to reduce the release rates to design objective levels listed in Sections 2.5.a and 2.5.b for gaseous wastes and report these actions to the Commission within 30 days from the end of the calendar quarter during which the releases occurred.	

2.0 ENVIRONMENTAL PROTECTION CONDITIONS	3.0 SURVEILLANCE REQUIREMENTS

2.5.2 Gaseous Waste Effluents (cont'd)

(1) The average release rate of noble gases during any calendar quarter from the site should be:

$$\sum_{i=1}^{n} DAB_i[(2.0 \times 10^2)Q_{si} + (8.0 \times 10^4)Q_{vi}] \leq 1$$

$$\sum_{i=1}^{n} [DETA_i(9.3 \times 10^4)Q_{si} + DAG_i(1.6 \times 10^5)Q_{vi}] \leq 1$$

(2) The average release rate of I-131 and radioactive materials in particulate form with half-lives greater than eight days during any calendar quarter from the site should be:

$$[3.26 \times 10^6\ Q_s] + [3.74 \times 10^7\ Q_v] \leq 1$$

(if no teen, child or infant milk consumption)

The consumption of milk must be demonstrated by the Radiological Environmental Monitoring Program 4.2.7. If the Radiological Environmental Monitoring Program determines the consumption of milk by teen, child, or infant, the above equation shall be modified by the appropriate coefficients (Dose Factors) of Regulatory Guide 1.109.

3.5.2 Gaseous Waste Effluents (cont'd)

g. Calculations for meeting the requirements of Specifications 2.5.2.c(1) and (2) shall be performed at least once every 31 days.

2.0 ENVIRONMENTAL PROTECTION CONDITIONS	3.0 SURVEILLANCE REQUIREMENTS
2.5.2 Gaseous Waste Effluents (cont'd)	3.5.2 Gaseous Waste Effluents (cont'd)

d. Whenever the augmented off gas (AOG) system is out of service, at least one of the condenser/air ejector off gas monitors listed in Table 3.5-4 shall be operating and set to alarm and capable to initiate the automatic closure of the waste gas discharge valve prior to exceeding the limits specified in 2.5.2.a above.

e. If both condenser/air ejector off gas monitors are incapable of initiating automatic closure of the waste gas discharge valves, a shutdown shall be initiated so that the reactor will be in the hot shutdown condition within 24 hours.

The augmented off gas (AOG) process monitor shall be operable whenever a release is being made from the AOG system storage tanks.

If the augmented off gas system is out of service and the air ejector off gas monitors are inoperative, a reactor shutdown shall be initiated so that the reactor will be in the hot shutdown condition within 24 hours.

f. If the release rate from the site of noble gases is not:

$$\sum_{i=1}^{n} DAB_i\left[(2.0 \times 10^2)Q_{si} + (8.0 \times 10^4)Q_{vi}\right] \leq 1$$

$$\sum_{i=1}^{n} DETA_i\left[(9.3 \times 10^4)Q_{si} + DAG_i(1.6 \times 10^5)Q_{vi}\right] \leq 1$$

h. The operability of each automatic isolation valve in the gaseous radwaste discharge line shall be demonstrated quarterly.

Table 3.5-5

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Table 3.5-5a
DOSE FACTORS

ISOTOPE	DETB mrem/Ci	DTB $\frac{mrem\text{-}m^3}{pCi\text{-}yr}$	DAB $\frac{mrad\text{-}m^3}{pCi\text{-}yr}$	DETA mrad/Ci	DAG $\frac{mrad\text{-}m^3}{pCi\text{-}yr}$
Kr-83m	1.0×10^{-9}	7.6×10^{-8}	2.9×10^{-4}	6.0×10^{-8}	1.9×10^{-5}
Kr-85	6.0×10^{-7}	1.6×10^{-5}	2.0×10^{-3}	7.5×10^{-7}	1.7×10^{-5}
Kr-85m	4.5×10^{-5}	1.2×10^{-3}	2.0×10^{-3}	4.5×10^{-5}	1.2×10^{-3}
Kr-87	2.0×10^{-4}	5.9×10^{-3}	1.0×10^{-2}	2.0×10^{-4}	6.2×10^{-3}
Kr-88	6.0×10^{-4}	1.5×10^{-2}	2.9×10^{-3}	6.0×10^{-4}	1.5×10^{-2}
Kr-89	2.7×10^{-4}	1.7×10^{-2}	1.1×10^{-2}	2.7×10^{-4}	1.7×10^{-2}
Kr-90	2.7×10^{-4}	1.6×10^{-2}	7.8×10^{-3}	2.7×10^{-4}	1.6×10^{-2}
Xe-131m	1.1×10^{-5}	9.1×10^{-5}	1.1×10^{-3}	1.2×10^{-5}	1.6×10^{-4}
Xe-133	9.0×10^{-6}	2.9×10^{-4}	1.0×10^{-3}	1.0×10^{-5}	3.5×10^{-4}
Xe-133m	8.2×10^{-6}	2.5×10^{-4}	1.5×10^{-3}	9.5×10^{-6}	3.3×10^{-4}
Xe-135	7.0×10^{-5}	1.8×10^{-3}	2.5×10^{-3}	8.0×10^{-5}	1.9×10^{-3}
Xe-135m	1.1×10^{-4}	3.1×10^{-3}	7.4×10^{-4}	1.3×10^{-4}	3.4×10^{-3}
Xe-137	3.5×10^{-5}	1.4×10^{-3}	1.3×10^{-2}	3.5×10^{-5}	1.5×10^{-3}
Xe-138	3.0×10^{-4}	8.8×10^{-3}	4.8×10^{-3}	3.3×10^{-4}	9.2×10^{-3}
Ar-41	3.7×10^{-4}	8.8×10^{-3}	3.3×10^{-3}	4.0×10^{-4}	9.3×10^{-3}

GASEOUS WASTE EFFLUENTS - The release of radioactive materials in gaseous waste effluents to unrestricted areas shall not exceed the concentration limits specified in 10 CFR Part 20, and should be as low as reasonably achievable in accordance with the requirements of 10 CFR Part 50.36. These specifications provide reasonable assurance that the resulting annual air dose from this site due to gamma radiation will not exceed 20 mrad, and an annual air dose due to beta radiation will not exceed 40 mrad from noble gases, and that the annual dose to any organ of an individual from I-131 and particulates with half-lives greater than 8 days will not exceed 30 mrem.

A continuous release rate of gross radioactivity in the amount specified in 2.5.2.a(1) will not result in offsite annual doses above background in excess of the limits specified in 10 CFR Part 20.

For Specification 2.5.2.a(2), dose calculations have been made for the critical sectors and critical pathways for I-131 and radioactive material in particulate form with half-lives greater than eight days. The calculations consider site meteorology for these releases.

Specification 2.5.2.b establishes upper site levels for the releases of noble gases, iodines and particulates with half lives greater than eight days, and iodine-131 at the design objective annual quantity during any calendar year. Since BSEP does not have an AOG that has been demonstrated to be continuously operable, the content of these limiting conditions for operation assumes that the design objectives of 2.5a and b for gaseous wastes can be met. This specification does not limit the instantaneous gaseous radioactive release rate, but permits the licensee the flexibility of operation to assure that the public is provided a dependable source of power under unusual operating conditions which may temporarily result in higher releases than the objectives and yet remain below annual design objective releases. The equation limiting radioactivity releases was established based on on-site meteorological data and methodology of Regulatory Guides 1.109 and 1.111, and methods provided in Meteorology and Atomic Energy (1968).

For iodine-131 and radioactive material in particulate form with half-lives greater than eight days, the critical location for ground releases is the SSE sector distance of 1464 meters where $^{\chi}/Q$ is 6.5×10^{-6} sec/m^3 for the dose due to inhalation. The critical location for elevated releases is the SSE sector at a distance of 1464 meters where the $^{\chi}/Q$ is 3.45×10^{-8} sec/m^3 for the dose, due to inhalation. The assumptions for the grass-cow-milk-thyroid chain are listed in Table 3.5-6. The grass-cow-milk-thyroid chain is controlling.

The reporting requirements of 2.5.2.b and 2.5.2.c delineate that the cause be identified whenever the release of gaseous effluents exceeds the annual objective during any calendar year or one-half the annual objective quantity during any calendar quarter, and describe the proposed program of action to reduce such release rates to the design objectives.

Specifications 2.5.2.d and 2.5.2.e assure compliance with NRC general design criterion 64. The 24-hour period will allow an investigation of several hours to determine the cause of the monitor inoperability and possible repair prior to initiating the hot-shutdown.

Specification 2.5.2.f is to monitor the performance of the core. A sudden increase in the activity levels of gaseous releases may be the result of defective fuel. Since core performance is of utmost importance in the resulting doses, a report must be filed within 10 days following the specified increase in gaseous radioactive releases.

Specification 2.5.2.g requires that the primary containment atmosphere receive treatment for the removal of gaseous iodine and particulates prior to its release.

Specification 2.5.2.h requires that hydrogen concentration in the system shall be monitored at all times during AOG operation to prevent buildup of combustible concentrations.

The sampling and monitoring requirements given under Specification 3.5.2 provide assurance that radioactive materials released in gaseous wastes are properly controlled and monitored in conformance with the requirements of Design Criteria 60 and 64. These requirements provide the data for the licensee and the Commission to evaluate the plant's performance relative to radioactive wastes released to the environment. Reports on the quantities of radioactive materials released in gaseous effluents are furnished to the Commission on the basis of Section 5.4 of these Technical Specifications and in conformance with Regulatory Guide 1.21. On the basis of such reports and any additional information the Commission may obtain from the licensee or others, the Commission may from time to time require the licensee to take such action as the Commission deems appropriate.

2.0 ENVIRONMENTAL PROTECTION CONDITIONS

2.5.1 Liquid Waste Effluents (cont'd)

g. The maximum radioactivity to be contained in any liquid radwaste tank that can be discharged directly to the environs shall not exceed 10 Ci, excluding tritium and dissolved and entrained fission and activation gases.

h. If the cumulative release of radioactive materials in liquid effluents excluding tritium and dissolved and entrained fission and activation gases, exceeds 2.5 Ci per reactor in a calendar quarter, the licensee shall make an investigation to identify the causes of such releases, define and initiate a program of action to reduce such releases to the design objective levels listed in Section 2.5, and report these actions to the Commission within 30 days from the end of the quarter during which the release occurred.

2.5.2 Specifications for Gaseous Waste Discharges

a. (1) The release rate limit of noble gases from this site shall be:

$$\sum_{i=1}^{n} \left[DETB_i (8.0 \times 10^3) Q_{si} + DTB_i (1.3 \times 10^4) Q_{vi} \right] \leq 1$$

where Q_s = release rate from main stack in Ci/sec (elevated release)

Q_v = release rate from vents in Ci/sec (ground release)

i = the ith individual nuclide.
n = total number of nuclides.

$DETB_i$ = Total-body elevated release dose factor from Table 3.5-5a in mrem/Ci

DTB_i = Total-body dose factor from Table 3.5-5a in mrem-m^3/pCi-yr

3.0 SURVEILLANCE REQUIREMENTS

3.5.1 Liquid Waste Effluents (cont'd)

e. The flow rate of liquid radioactive waste shall be continually measured and recorded during release.

f. All liquid effluent radiation monitors shall be calibrated at least quarterly by means of a known radioactive source which has been calibrated to a National Bureau of Standards source. Each monitor shall also have a functional test monthly and an instrument check prior to making a release.

3.5.2 Specifications for Gaseous Waste Sampling and Monitoring

a. Plant records shall be maintained and records of the sampling and analysis results shall be submitted in accordance with Section 5.4 of these Specifications. Estimates of the sampling and analytical error associated with each reported value should be included.

b. Gaseous releases to the environment from the two reactor building vents, the two turbine building vents, and the off gas vent (stack), except as noted in Specification 3.5.2.c below, shall be continuously monitored for gross radioactivity and the flow measured and recorded. Whenever these monitors are inoperable, grab samples shall be taken and analyzed daily for gross gaseous radioactivity. If these monitors are inoperable for more than seven days, these releases shall be terminated or the plant shall be shut down.

c. An isotopic analysis shall be made of a representative sample of gaseous activity, excluding tritium, at the discharge of the steam jet air ejectors and at a point prior to dilution and discharge.
(1) at least monthly.

2.0 ENVIRONMENTAL PROTECTION CONDITIONS

2.5.2 Gaseous Waste Effluents (cont'd)

(2) The release rate limit of I-131 and radioactive materials in particulate form with half-lives greater than eight days, released to the environs as part of the gaseous wastes from the site shall be:

$$[3.7 \times 10^4]Q_s + [5.8 \times 10^6]Q_v \leq 1$$

where Q_s = release rate from the main stack in Ci/sec (as elevated release)

Q_v = release rate from the vents in Ci/sec (ground release)

b. Should any of the conditions of Specifications 2.5.2.b(1) or 2.5.2.b(2) listed below be exceeded, the licensee shall make an investigation to identify the causes of the release rates, define and initiate a program of action to reduce the release rates to design objective levels listed in Sections 2.5.a and 2.5.b for gaseous wastes and report these actions to the Commission within 30 days from the end of the calendar year during which the releases occurred.

(1) the average release rate of noble gases from the site during any calendar year should be:

$$\sum_{i=1}^{n} DAB_i[(4.0 \times 10^2)Q_{si} + (1.6 \times 10^5)Q_{vi}] \leq 1$$

and

$$\sum_{i=1}^{n} [DETA_i(1.9 \times 10^5)Q_{si} + DAG_i(3.2 \times 10^5)Q_{vi}] \leq 1$$

where Q_{si} = release rate of radioisotope i from the main stack in Ci/sec.

Q_{vi} = release rate of radioisotope i from the vents of each reactor in Ci/sec.

3.0 SURVEILLANCE REQUIREMENTS

3.5.2 Gaseous Waste Effluents (cont'd)

(2) within 1 month, following each refueling outage.

(3) within 72 hours, if the gaseous waste monitors indicate an increase of greater than 50% in the steady state fission gas release after factoring out increases due to power changes.

d. All waste gas effluent monitors shall be calibrated at least quarterly by means of a known radioactive source which has been calibrated to a National Bureau of Standards source. Each monitor shall have a functional test at least monthly and an instrument check at least daily excluding days of no discharge.

e. Sampling and analysis of radioactive material in gaseous waste, particulate form, and radioiodine shall be performed in accordance with Table 3.5-2.

2.0 ENVIRONMENTAL PROTECTION CONDITIONS	3.0 SURVEILLANCE REQUIREMENTS
2.5.2 Gaseous Waste Effluents (cont'd)	3.5.2 Gaseous Effluents (cont'd)
DAB_i = The beta air dose factor from Table 3.5-5a in mrad-m^3/pCi-yr $DETA_i$ = Gamma air elevated release dose factor from Table 3.5-5a in mrad/Ci DAG_i = The gamma air dose factor from Table 3.5-5a in mrad-m^3/pCi-yr	
(2) The average release rate from the site of I-131 and radioactive materials in particulate form with half-lives greater than eight days during any calendar year should be: $(6.56 \times 10^6 Q_S) + (7.46 \times 10^7 Q_V) \leq 1$ (If no teen, child or infant milk consumption) The consumption of milk must be demonstrated by the Radiological Environmental Monitoring Program 4.2.7. If the Radiological Environmental Monitoring Program determines the consumption of milk by teen, child, or infant the above equation shall be modified by the appropriate coefficient (Dose Factors) of Regulatory Guide 1.109.	f. Calculations for meeting the requirements of Specifications 2.5.2.b(1) and (2) shall be performed at least once every 31 days.
c. Should any of the conditions of Specifications 2.5.2.c(1) or 2.5.2.c(2) listed below be exceeded, the licensee shall make an investigation to identify the causes of the release rates, define and initiate a program of action to reduce the release rates to design objective levels listed in Sections 2.5.a and 2.5.b for gaseous wastes and report these actions to the Commission within 30 days from the end of the calendar quarter during which the releases occurred.	

2.0 ENVIRONMENTAL PROTECTION CONDITIONS	3.0 SURVEILLANCE REQUIREMENTS

2.5.2 Gaseous Waste Effluents (cont'd)

(1) The average release rate of noble gases during any calendar quarter from the site should be:

$$\sum_{i \to 1}^{n} DAB_i\left[(2.0 \times 10^2)Q_{si} + (8.0 \times 10^4)Q_{vi}\right] \leq 1$$

$$\sum_{i \to 1}^{n} \left[DETA_i(9.3 \times 10^4)Q_{si} + DAG_i(1.6 \times 10^5)Q_{vi}\right] \leq 1$$

(2) The average release rate of I-131 and radioactive materials in particulate form with half-lives greater than eight days during any calendar quarter from the site should be:

$$\left[3.26 \times 10^6\ Q_s\right] + \left[3.74 \times 10^7\ Q_v\right] \leq 1$$

(if no teen, child or infant milk consumption)

The consumption of milk must be demonstrated by the Radiological Environmental Monitoring Program 4.2.7. If the Radiological Environmental Monitoring Program determines the consumption of milk by teen, child, or infant, the above equation shall be modified by the appropriate coefficients (Dose Factors) of Regulatory Guide 1.109.

3.5.2 Gaseous Waste Effluents (cont'd)

g. Calculations for meeting the requirements of Specifications 2.5.2.c(1) and (2) shall be performed at least once every 31 days.

2.0 ENVIRONMENTAL PROTECTION CONDITIONS	3.0 SURVEILLANCE REQUIREMENTS

2.5.2 Gaseous Waste Effluents (cont'd)

d. Whenever the augmented off gas (AOG) system is out of service, at least one of the condenser/air ejector off gas monitors listed in Table 3.5-4 shall be operating and set to alarm and capable to initiate the automatic closure of the waste gas discharge valve prior to exceeding the limits specified in 2.5.2.a above.

e. If both condenser/air ejector off gas monitors are incapable of initiating automatic closure of the waste gas discharge valves, a shutdown shall be initiated so that the reactor will be in the hot shutdown condition within 24 hours.

The augmented off gas (AOG) process monitor shall be operable whenever a release is being made from the AOG system storage tanks.

If the augmented off gas system is out of service and the air ejector off gas monitors are inoperative, a reactor shutdown shall be initiated so that the reactor will be in the hot shutdown condition within 24 hours.

f. If the release rate from the site of noble gases is not:

$$\sum_{i+1}^{n} DAB_i\left[(2.0 \times 10^2)Q_{si} + (8.0 \times 10^4)Q_{vi}\right] \leq 1$$

$$\sum_{i+1}^{n} DETA_i\left[(9.3 \times 10^4)Q_{si} + DAG_i(1.6 \times 10^5)Q_{vi}\right] \leq 1$$

3.5.2 Gaseous Waste Effluents (cont'd)

h. The operability of each automatic isolation valve in the gaseous radwaste discharge line shall be demonstrated quarterly.

Table 3.5-5

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Table 3.5-5a
DOSE FACTORS

ISOTOPE	DETB mrem/Ci	DTB $\frac{mrem-m^3}{pCi-yr}$	DAB $\frac{mrad-m^3}{pCi-yr}$	DETA mrad/Ci	DAG $\frac{mrad-m^3}{pCi-yr}$
Kr-83m	1.0×10^{-9}	7.6×10^{-8}	2.9×10^{-4}	6.0×10^{-8}	1.9×10^{-5}
Kr-85	6.0×10^{-7}	1.6×10^{-5}	2.0×10^{-3}	7.5×10^{-7}	1.7×10^{-5}
Kr-85m	4.5×10^{-5}	1.2×10^{-3}	2.0×10^{-3}	4.5×10^{-5}	1.2×10^{-3}
Kr-87	2.0×10^{-4}	5.9×10^{-3}	1.0×10^{-2}	2.0×10^{-4}	6.2×10^{-3}
Kr-88	6.0×10^{-4}	1.5×10^{-2}	2.9×10^{-3}	6.0×10^{-4}	1.5×10^{-2}
Kr-89	2.7×10^{-4}	1.7×10^{-2}	1.1×10^{-2}	2.7×10^{-4}	1.7×10^{-2}
Kr-90	2.7×10^{-4}	1.6×10^{-2}	7.8×10^{-3}	2.7×10^{-4}	1.6×10^{-2}
Xe-131m	1.1×10^{-5}	9.1×10^{-5}	1.1×10^{-3}	1.2×10^{-5}	1.6×10^{-4}
Xe-133	9.0×10^{-6}	2.9×10^{-4}	1.0×10^{-3}	1.0×10^{-5}	3.5×10^{-4}
Xe-133m	8.2×10^{-6}	2.5×10^{-4}	1.5×10^{-3}	9.5×10^{-6}	3.3×10^{-4}
Xe-135	7.0×10^{-5}	1.8×10^{-3}	2.5×10^{-3}	8.0×10^{-5}	1.9×10^{-3}
Xe-135m	1.1×10^{-4}	3.1×10^{-3}	7.4×10^{-4}	1.3×10^{-4}	3.4×10^{-3}
Xe-137	3.5×10^{-5}	1.4×10^{-3}	1.3×10^{-2}	3.5×10^{-5}	1.5×10^{-3}
Xe-138	3.0×10^{-4}	8.8×10^{-3}	4.8×10^{-3}	3.3×10^{-4}	9.2×10^{-3}
Ar-41	3.7×10^{-4}	8.8×10^{-3}	3.3×10^{-3}	4.0×10^{-4}	9.3×10^{-3}

GASEOUS WASTE EFFLUENTS - The release of radioactive materials in gaseous waste effluents to unrestricted areas shall not exceed the concentration limits specified in 10 CFR Part 20, and should be as low as reasonably achievable in accordance with the requirements of 10 CFR Part 50.36. These specifications provide reasonable assurance that the resulting annual air dose from this site due to gamma radiation will not exceed 20 mrad, and an annual air dose due to beta radiation will not exceed 40 mrad from noble gases, and that the annual dose to any organ of an individual from I-131 and particulates with half-lives greater than 8 days will not exceed 30 mrem.

A continuous release rate of gross radioactivity in the amount specified in 2.5.2.a(1) will not result in offsite annual doses above background in excess of the limits specified in 10 CFR Part 20.

For Specification 2.5.2.a(2), dose calculations have been made for the critical sectors and critical pathways for I-131 and radioactive material in particulate form with half-lives greater than eight days. The calculations consider site meteorology for these releases.

Specification 2.5.2.b establishes upper site levels for the releases of noble gases, iodines and particulates with half lives greater than eight days, and iodine-131 at the design objective annual quantity during any calendar year. Since BSEP does not have an AOG that has been demonstrated to be continuously operable, the content of these limiting conditions for operation assumes that the design objectives of 2.5a and b for gaseous wastes can be met. This specification does not limit the instantaneous gaseous radioactive release rate, but permits the licensee the flexibility of operation to assure that the public is provided a dependable source of power under unusual operating conditions which may temporarily result in higher releases than the objectives and yet remain below annual design objective releases. The equation limiting radioactivity releases was established based on on-site meteorological data and methodology of Regulatory Guides 1.109 and 1.111, and methods provided in Meteorology and Atomic Energy (1968).

For iodine-131 and radioactive material in particulate form with half-lives greater than eight days, the critical location for ground releases is the SSE sector distance of 1464 meters where $^{\chi}/Q$ is 6.5×10^{-6} sec/m^3 for the dose due to inhalation. The critical location for elevated releases is [illegible] sector at a distance of 1464 meters where the $^{\chi}/Q$ is 3.45×10^{-8} sec/m[illegible] dose, due to inhalation. The assumptions for the grass-cow-milk-thyro[illegible]n are listed in Table 3.5-6. The grass-cow-milk-thyroid chain is controlling.

The reporting requirements of 2.5.2.b and 2.5.2.c delineate that the cause be identified whenever the release of gaseous effluents exceeds the annual objective during any calendar year or one-half the annual objective quantity during any calendar quarter, and describe the proposed program of action to reduce such release rates to the design objectives.

Specifications 2.5.2.d and 2.5.2.e assure compliance with NRC general design criterion 64. The 24-hour period will allow an investigation of several hours to determine the cause of the monitor inoperability and possible repair prior to initiating the hot-shutdown.

Specification 2.5.2.f is to monitor the performance of the core. A sudden increase in the activity levels of gaseous releases may be the result of defective fuel. Since core performance is of utmost importance in the resulting doses, a report must be filed within 10 days following the specified increase in gaseous radioactive releases.

Specification 2.5.2.g requires that the primary containment atmosphere receive treatment for the removal of gaseous iodine and particulates prior to its release.

Specification 2.5.2.h requires that hydrogen concentration in the system shall be monitored at all times during AOG operation to prevent buildup of combustible concentrations.

The sampling and monitoring requirements given under Specification 3.5.2 provide assurance that radioactive materials released in gaseous wastes are properly controlled and monitored in conformance with the requirements of Design Criteria 60 and 64. These requirements provide the data for the licensee and the Commission to evaluate the plant's performance relative to radioactive wastes released to the environment. Reports on the quantities of radioactive materials released in gaseous effluents are furnished to the Commission on the basis of Section 5.4 of these Technical Specifications and in conformance with Regulatory Guide 1.21. On the basis of such reports and any additional information the Commission may obtain from the licensee or others, the Commission may from time to time require the licensee to take such action as the Commission deems appropriate.