

September 13, 1976

Dockets, Nos.: 50-280 ✓  
and 50-281

Virginia Electric & Power Company  
ATTN: Mr. W. L. Proffitt  
Senior Vice President  
P. O. Box 26666  
Richmond, Virginia 23261

Gentlemen:

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~~XXXXXXXXXX~~

TBAbernathy  
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WPasciak  
BHarless

In response to your application dated August 30, 1976, and as modified by our telephone conversation of September 13, 1976, the Commission has issued the enclosed Amendments No. 24 to Facility Operating Licenses No. DPR-32 and DPR-37 for the Surry Power Station, Units Nos. 1 and 2.

These amendments revise the gaseous effluent release Technical Specifications.

Copies of the Safety Evaluation, Environmental Impact Appraisal, and the Federal Register Notice are also enclosed.

Sincerely,

~~Robert W. Reid~~

Robert W. Reid, Chief  
Operating Reactors Branch #4  
Division of Operating Reactors

Enclosures:

1. Amendment No. 24 to DPR-32
2. Amendment No. 24 to DPR-37
3. Safety Evaluation
4. Environmental Impact Appraisal
5. Federal Register Notice

cc w/enclosures: See next page

OFFICE →	ORB#4:DOR	ORB#4:DOR <sup>MBF</sup>	OELD <sup>KARM</sup>	C-ORB#4:DOR <sup>Reid</sup>	C-EEB-OT:DOR <sup>BUF Miles</sup>	AQ-OT:DOR
SURNAME →	RIngram	MFairtile:rm		RReid		DEisenhut
DATE →	9/13/76	9/13/76	9/13/76	9/13/76	9/13/76	9/13/76

Virginia Electric & Power Company

cc w/enclosure(s):  
Michael W. Maupin, Esq.  
Hunton, Williams, Gay & Gibson  
P. O. Box 1535  
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Swem Library  
College of William & Mary  
Williamsburg, Virginia 23185

Mr. Sherlock Holmes, Chairman  
Board of Supervisors of Surry County  
Surry County Courthouse  
Surry, Virginia 23683

cc w/enclosure(s) & incoming  
dtd: 8/30/76  
Commonwealth of Virginia  
Council on the Environment  
903 9th Street Office Building  
Richmond, Virginia 23219



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

VIRGINIA ELECTRIC & POWER COMPANY

DOCKET NO. 50-280

SURRY POWER STATION UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 24  
License No. DPR-32

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Virginia Electric & Power Company (the licensee) dated August 30, 1976, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment.

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Robert W. Reid, Chief  
Operating Reactors Branch #4  
Division of Operating Reactors

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: September 13, 1976

ATTACHMENT TO LICENSE AMENDMENT NO.24

FACILITY OPERATING LICENSE NO. DPR-32

DOCKET NO. 50-280

Revise the Technical Specifications as follows:

<u>Remove Pages</u>	<u>Insert Pages</u>
3.11-3	3.11-3 and 3.11-3A
3.11-4	3.11-4
3.11-6	3.11-6 and 6.11-6A
4.9-2	4.9-2
4.9-3	4.9-3

Changed areas on the revised pages are shown by marginal lines.

A-1 Above are met.

B. Gaseous Wastes

1. The controlled release rates of gaseous wastes, excluding halogen and airborne particulates originating from station operation, shall be limited as follows:

$$\frac{\sum Q_i}{(MPC)_i} \leq 2.0 \times 10^5 \frac{\text{m}^3}{\text{sec}}$$

where  $Q_i$  is the controlled release rate (curies per second) of any radioisotope  $i$  and  $(MPC)_i$ , in unit of microcuries per cubic centimeter, is defined in column 1, Table II of Appendix B to 10 CFR 20,

2. The release rates of activity shall not exceed 16 percent of those specified in paragraph B.1. above when averaged over any calendar quarter or 10 percent of those specified in paragraph B.1. above when averaged over any 12 consecutive months.
- 3a. The release rate limit of all radioiodines and radioactive materials in particulate form with half-lives greater than eight days released from the site to the environs as part of the gaseous wastes shall be such that

$$3 \times 10^5 Q \leq 1$$

where  $Q$  = the measured release rate of the radioiodines and radioactive materials in particulate form with half-lives greater than eight days (Ci/sec).

- b. The average release rate per site of all radioiodines and radioactive materials in particulate form with half-lives greater than eight days during any calendar quarter shall be such that

$$13 [3 \times 10^5 Q] \leq 1$$

- c. The average release rate per site of all radioiodines and radioactive materials in particulate form with half-lives greater than eight days during any period of 12 consecutive months shall be such that

$$25 [3 \times 10^5 Q] \leq 1$$

- (1) The amount of iodine-131 released during any calendar quarter shall not exceed 2 Ci/reactor.
- (2) The amount of iodine-131 released during any period of 12 consecutive months shall not exceed 4 Ci/reactor.
- d. Should either of the conditions 1 and 2 listed below exist, 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 of 15 mrem/yr and report these actions to the NRC within 30 days from the end of the quarter during which the releases occurred.

- (1) If the average release rate per site of all radioiodines and radioactive materials in particulate form with half-lives greater than eight days during any calendar quarter is such that

$$50 [3 \times 10^5 Q] \geq 1$$

- (2) If the amount of iodine-131 released during any calendar quarter is greater than 0.5 Ci/reactor.
4. Gaseous waste gross and particulate activity and flow rate shall be continuously monitored and recorded during release of radioactive gaseous wastes to the process vent.
5. During release of radioactive gaseous waste to the process vent, the following conditions shall be met:
- a. At least one process vent blower shall be operating.

- b. The process vent gas monitor and particulate monitor shall be operating.
6. All effluents to be discharged to the atmosphere from the waste gas decay tanks of the gaseous waste disposal system shall be sampled and analyzed to demonstrate compliance with specification B-1 and B-3 above prior to release via the process vent.
7. During periods of primary to secondary leakage, the alarm setpoint of  $\leq 1.3$   $\mu\text{Ci/cc}$  will be based on actual isotopic content of samples obtained and analyzed on the multichannel analyzer.
8. Whenever the air ejector discharge monitor is inoperable and the steam generator blowdown monitors indicate a primary to secondary leak, the automatic divert feature shall be defeated and samples shall be taken from the air ejector discharge and analyzed from gross activity on a daily basis. If the gross activity reaches the alarm setpoint as specified in Table 3.7-5, the air ejector flow shall be manually diverted to the containment.
9. The maximum activity to be contained in one gas decay tank shall not exceed 95,400 curies equivalent of Xenon 133.
10. Purging of the containment shall be governed by the following conditions:
  - a. Containment purge shall be filtered through the high efficiency particulate air filters and charcoal absorbers whenever the concentration of iodine and particulate isotopes exceed the occupational MPC inside the containment.
  - b. Containment purge shall be filtered through the high efficiency particulate air filters and charcoal absorbers whenever irradiated fuel is being handled or any object is being handled over irradiated

site boundary ( $5.0 \times 10^{-6}$  seconds per meter<sup>3</sup>). The release rate Specifications for a radioiodine and radioactive material in particulate form with half-lives greater than eight days are dependent on existing radionuclide pathways to man. The pathways which were examined for these Specifications are: 1) individual inhalation of airborne radionuclides, 2) deposition of radionuclides onto green leafy vegetation with subsequent consumption by man, and 3) deposition onto grassy areas where milch animals graze with consumption of the milk by man. Methods for estimating doses to the thyroid via these pathways are described in Proposed Regulatory Guide 1.109. The offsite location with the highest anticipated thyroid dose rate from radioiodines and radioactive material in particulate form with half-lives greater than eight days was determined using on-site meteorological data and the expressions described in Proposed Regulatory Guide 1.111.

Specification 3.11.B.3a limits the release rate of radioiodines and radioactive material in particulate form with half-lives greater than eight days so that the corresponding annual thyroid dose via the most restrictive pathway is less than 1500 mrem.

For radioiodines and radioactive material in particulate form with half-lives greater than eight days, the most restrictive location is a dairy cow located 3.75 miles, NNW direction ( $D/Q = 5 \times 10^{-10} \text{ m}^{-2}$ ) and the equations in specification 3.11.B.3a, 3b, and 3c are based on this assumption.

Specification 3.11.B.3b and 3c establishes upper offsite levels for the releases of radioiodines and radioactive material in particulate form with half-lives greater than eight days at twice the design objective annual quantity during any calendar quarter, or four times the design objective annual quantity during any period of 12 consecutive months. In addition to the limiting conditions for operation of Specifications 3.11.B.3a, 3b, and 3c the reporting requirements of 3.11.B.3.d provide that the cause shall be identified whenever the release of gaseous effluents exceeds one-half the design objective annual quantity during any calendar quarter and that the proposed program of action to reduce such release rates to the design objectives shall be described.

Details of the equipment provided and mode of operation of the liquid and gaseous waste disposal systems are presented in sections 11.2.3 and 11.2.5, respectively, of the FSAR.

The limit on Xe-133 content of the waste gas decay tanks is based on the maximum content assumed in the analysis of a decay tank failure.

#### References

FSAR Section 2.2.3	Average Atmospheric Dilution
FSAR Section 11.2.3	Liquid Waste Disposal System
FSAR Section 11.2.5	Gaseous Waste Disposal System
FSAR Section 11.3.3	Process Radiation Monitor Systems
FSAR Section 11.3.4	Area Radiation Monitor Systems
FSAR Section 14.4.2.2	Waste Gas Decay Tank Rupture

- C. The gross activities of all gaseous and airborne particulate effluents released from the Gaseous Waste Disposal System and the Ventilation Vent System and the gross activity of all liquid effluent released from the Liquid Waste Disposal System and steam generator blowdown shall be measured and recorded continuously while they are being discharged.
- D. All radiation monitor channels shall be checked, calibrated and tested as indicated in Table 4.1-1.
- E. The environmental program given in Table 4.9-1 shall be conducted.
- F. A census of animals producing milk for human consumption shall be conducted at the beginning and at the middle of the grazing season to determine their location and number with respect to the site. The census shall be conducted under the following conditions:
1. Within a 1-mile radius from the plant site or within the 15 mrem/yr isodose line, whichever is larger, enumeration by a door-to-door or equivalent counting technique.
  2. Within a 5-mile radius for cows and a 15-mile radius for goats, enumeration by using referenced information from county agricultural agents or other reliable sources.

If it is learned from this census that animals are present at a location which yields a calculated thyroid dose greater than from previously sampled animals, the new location shall be added to the surveillance program as soon as practicable. The sampling location having the lowest calculated dose may then be dropped from the surveillance program at the end of the grazing season during which the census was conducted. Also, any location from which milk can no longer be obtained may be dropped from the surveillance program after notifying the NRC in writing that milk-producing animals are no longer present at that location.

#### Basis

The test and calibration requirements are specified to detect possible equipment failures and to show that maximum permissible release rates are not exceeded. All the radiation monitors except the recirculation spray cooler service water outlet monitors operate continuously and the operator observes that these instruments are performing daily. In addition, the check source for each operating channel is tripped daily from the Main Control Room to

verify instrument response. All the monitors for a particular unit will be calibrated on a periodic basis, and normally during the refueling shutdown of that unit. Experience with instrument drift and failure modes indicates that the above specified test and calibration frequencies are adequate.

The environmental survey incorporates measurements to provide background data and measure possible plant effects. Samples collected at points where concentrations of effluents in the environment are expected to be the greatest will be compared with samples collected concurrently at points expected to be essentially unaffected by station effluents. The latter samples will provide background measurements as a basis for distinguishing significant radioactivity introduced into the environment by the operation of the station from that due to nuclear detonations and other sources.

This schedule will ensure that changes in the environmental radioactivity can be detected. The materials which first show changes in radioactivity are sampled most frequently. Those which are less affected by transient changes but show long-term accumulations are sampled less frequently.

Data on the composition, quantity, frequency, etc. of releases, dilution factors obtained, and measured concentrations in food and other organisms (if any are observed) should make it desirable to review and re-evaluate this program periodically.



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

VIRGINIA ELECTRIC & POWER COMPANY

DOCKET NO. 50-281

SURRY POWER STATION UNIT NO. 2

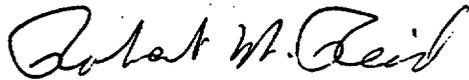
AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 24  
License No. DPR-37

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Virginia Electric & Power Company (the licensee) dated August 30, 1976, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment.

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Robert W. Reid, Chief  
Operating Reactors Branch #4  
Division of Operating Reactors

**Attachment:**  
Changes to the Technical  
Specifications

**Date of Issuance:** September 13, 1976

ATTACHMENT TO LICENSE AMENDMENT NO.24

FACILITY OPERATING LICENSE NO. DPR-37

DOCKET NO. 50-281

Revise the Technical Specifications as follows:

Remove Pages

3.11-3

3.11-4

3.11-6

4.9-2

4.9-3

Insert Pages

3.11-3 and 3.11-3A

3.11-4

3.11-6 and 6.11-6A

4.9-2

4.9-3

Changed areas on the revised pages are shown by marginal lines.

A-1 Above are met.

B. Gaseous Wastes

1. The controlled release rates of gaseous wastes, excluding halogen and airborne particulates originating from station operation, shall be limited as follows:

$$\frac{\sum Q_i}{(MPC)_i} \leq 2.0 \times 10^5 \frac{m^3}{\text{sec}}$$

where  $Q_i$  is the controlled release rate (curies per second) of any radioisotope  $i$  and  $(MPC)_i$ , in unit of microcuries per cubic centimeter, is defined in column 1, Table II of Appendix B to 10 CFR 20,

2. The release rates of activity shall not exceed 16 percent of those specified in paragraph B.1. above when averaged over any calendar quarter or 10 percent of those specified in paragraph B.1. above when averaged over any 12 consecutive months.
- 3a. The release rate limit of all radioiodines and radioactive materials in particulate form with half-lives greater than eight days released from the site to the environs as part of the gaseous wastes shall be such that

$$3 \times 10^5 Q \leq 1$$

where  $Q$  = the measured release rate of the radioiodines and radioactive materials in particulate form with half-lives greater than eight days (Ci/sec).

- b. The average release rate per site of all radioiodines and radioactive materials in particulate form with half-lives greater than eight days during any calendar quarter shall be such that

$$13 [3 \times 10^5 Q] \leq 1$$

- c. The average release rate per site of all radioiodines and radioactive materials in particulate form with half-lives greater than eight days during any period of 12 consecutive months shall be such that

$$25 [3 \times 10^5 Q] \leq 1$$

- (1) The amount of iodine-131 released during any calendar quarter shall not exceed 2 Ci/reactor.
- (2) The amount of iodine-131 released during any period of 12 consecutive months shall not exceed 4 Ci/reactor.

- d. Should either of the conditions 1 and 2 listed below exist, 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 of 15 mrem/yr and report these actions to the NRC within 30 days from the end of the quarter during which the releases occurred.

- (1) If the average release rate per site of all radioiodines and radioactive materials in particulate form with half-lives greater than eight days during any calendar quarter is such that

$$50 [3 \times 10^5 Q] > 1$$

- (2) If the amount of iodine-131 released during any calendar quarter is greater than 0.5 Ci/reactor.
4. Gaseous waste gross and particulate activity and flow rate shall be continuously monitored and recorded during release of radioactive gaseous wastes to the process vent.
5. During release of radioactive gaseous waste to the process vent, the following conditions shall be met:
- a. At least one process vent blower shall be operating.

- b. The process vent gas monitor and particulate monitor shall be operating.
6. All effluents to be discharged to the atmosphere from the waste gas decay tanks of the gaseous waste disposal system shall be sampled and analyzed to demonstrate compliance with specification B-1 and B-3 above prior to release via the process vent.
7. During periods of primary to secondary leakage, the alarm setpoint of  $\leq 1.3$   $\mu\text{Ci/cc}$  will be based on actual isotopic content of samples obtained and analyzed on the multichannel analyzer.
8. Whenever the air ejector discharge monitor is inoperable and the steam generator blowdown monitors indicate a primary to secondary leak, the automatic divert feature shall be defeated and samples shall be taken from the air ejector discharge and analyzed for gross activity on a daily basis. If the gross activity reaches the alarm setpoint as specified in Table 3.7-5, the air ejector flow shall be manually diverted to the containment.
9. The maximum activity to be contained in one gas decay tank shall not exceed 95,400 curies equivalent of Xenon 133.
10. Purging of the containment shall be governed by the following conditions:
  - a. Containment purge shall be filtered through the high efficiency particulate air filters and charcoal absorbers whenever the concentration of iodine and particulate isotopes exceed the occupational MPC inside the containment.
  - b. Containment purge shall be filtered through the high efficiency particulate air filters and charcoal absorbers whenever irradiated fuel is being handled or any object is being handled over irradiated

site boundary ( $5.0 \times 10^{-6}$  seconds per meter<sup>3</sup>). The release rate Specifications for a radioiodine and radioactive material in particulate form with half-lives greater than eight days are dependent on existing radionuclide pathways to man. The pathways which were examined for these Specifications are: 1) individual inhalation of airborne radionuclides, 2) deposition of radionuclides onto green leafy vegetation with subsequent consumption by man, and 3) deposition onto grassy areas where milch animals graze with consumption of the milk by man. Methods for estimating doses to the thyroid via these pathways are described in Proposed Regulatory Guide 1.109. The offsite location with the highest anticipated thyroid dose rate from radioiodines and radioactive material in particulate form with half-lives greater than eight days was determined using on-site meteorological data and the expressions described in Proposed Regulatory Guide 1.111.

Specification 3.11.B.3a limits the release rate of radioiodines and radioactive material in particulate form with half-lives greater than eight days so that the corresponding annual thyroid dose via the most restrictive pathway is less than 1500 mrem.

For radioiodines and radioactive material in particulate form with half-lives greater than eight days, the most restrictive location is a dairy cow located 3.75 miles, NNW direction ( $D/Q = 5 \times 10^{-10} \text{ m}^{-2}$ ) and the equations in specification 3.11.B.3a, 3b, and 3c are based on this assumption.

Specification 3.11.B.3b and 3c establishes upper offsite levels for the releases of radioiodines and radioactive material in particulate form with half-lives greater than eight days at twice the design objective annual quantity during any calendar quarter, or four times the design objective annual quantity during any period of 12 consecutive months. In addition to the limiting conditions for operation of Specifications 3.11.B.3a, 3b, and 3c the reporting requirements of 3.11.B.3.d provide that the cause shall be identified whenever the release of gaseous effluents exceeds one-half the design objective annual quantity during any calendar quarter and that the proposed program of action to reduce such release rates to the design objectives shall be described.

Details of the equipment provided and mode of operation of the liquid and gaseous waste disposal systems are presented in sections 11.2.3 and 11.2.5, respectively, of the FSAR.

The limit on Xe-133 content of the waste gas decay tanks is based on the maximum content assumed in the analysis of a decay tank failure.

References

- FSAR Section 2.2.3      Average Atmospheric Dilution
- FSAR Section 11.2.3    Liquid Waste Disposal System
- FSAR Section 11.2.5    Gaseous Waste Disposal System
- FSAR Section 11.3.3    Process Radiation Monitor Systems
- FSAR Section 11.3.4    Area Radiation Monitor Systems
- FSAR Section 14.4.2.2   Waste Gas Decay Tank Rupture

- C. The gross activities of all gaseous and airborne particulate effluents released from the Gaseous Waste Disposal System and the Ventilation Vent System and the gross activity of all liquid effluent released from the Liquid Waste Disposal System and steam generator blowdown shall be measured and recorded continuously while they are being discharged.
- D. All radiation monitor channels shall be checked, calibrated and tested as indicated in Table 4.1-1.
- E. The environmental program given in Table 4.9-1 shall be conducted.
- F. A census of animals producing milk for human consumption shall be conducted at the beginning and at the middle of the grazing season to determine their location and number with respect to the site. The census shall be conducted under the following conditions:
1. Within a 1-mile radius from the plant site or within the 15 mrem/yr isodose line, whichever is larger, enumeration by a door-to-door or equivalent counting technique.
  2. Within a 5-mile radius for cows and a 15-mile radius for goats, enumeration by using referenced information from county agricultural agents or other reliable sources.

If it is learned from this census that animals are present at a location which yields a calculated thyroid dose greater than from previously sampled animals, the new location shall be added to the surveillance program as soon as practicable. The sampling location having the lowest calculated dose may then be dropped from the surveillance program at the end of the grazing season during which the census was conducted. Also, any location from which milk can no longer be obtained may be dropped from the surveillance program after notifying the NRC in writing that milk-producing animals are no longer present at that location.

### Basis

The test and calibration requirements are specified to detect possible equipment failures and to show that maximum permissible release rates are not exceeded. All the radiation monitors except the recirculation spray cooler service water outlet monitors operate continuously and the operator observes that these instruments are performing daily. In addition, the check source for each operating channel is tripped daily from the Main Control Room to

verify instrument response. All the monitors for a particular unit will be calibrated on a periodic basis, and normally during the refueling shutdown of that unit. Experience with instrument drift and failure modes indicates that the above specified test and calibration frequencies are adequate.

The environmental survey incorporates measurements to provide background data and measure possible plant effects. Samples collected at points where concentrations of effluents in the environment are expected to be the greatest will be compared with samples collected concurrently at points expected to be essentially unaffected by station effluents. The latter samples will provide background measurements as a basis for distinguishing significant radioactivity introduced into the environment by the operation of the station from that due to nuclear detonations and other sources.

This schedule will ensure that changes in the environmental radioactivity can be detected. The materials which first show changes in radioactivity are sampled most frequently. Those which are less affected by transient changes but show long-term accumulations are sampled less frequently.

Data on the composition, quantity, frequency, etc. of releases, dilution factors obtained, and measured concentrations in food and other organisms (if any are observed) should make it desirable to review and re-evaluate this program periodically.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
SUPPORTING AMENDMENTS NO. 24 TO LICENSES NOS. DPR-32 AND DPR-37

VIRGINIA ELECTRIC & POWER COMPANY

SURRY POWER STATION UNITS 1 AND 2

DOCKET NOS. 50-280 AND 50-281

INTRODUCTION

By letter dated August 30, 1976, as modified by phone call of September 13, 1976, Virginia Electric & Power Company (VEPCO) proposed to change the Technical Specifications for Surry Power Station Units 1 and 2. The proposed changes involve a recalculation of the airborne iodine effluent release limits using the Commission's current methodology. These proposed changes would constitute interim limits until the Commission issues its final Appendix I Technical Specifications.

The present Surry radioiodine and radioactive particulate effluent release limits were calculated prior to the Commission's development of its current criteria for implementing the "as low as reasonably achievable (ALARA)" concept of minimizing effluent releases and are unnecessarily conservative with respect to those criteria. The changes proposed for the Surry Station iodine release limits have been calculated in accordance with the Commission's current guidelines and are similar to limits issued recently on other operating reactors.

The Surry Station reactors are currently being evaluated for compliance with the design objectives of Appendix I to 10 CFR Part 50, Licensing of Production and Utilization Facilities. Revised standard ALARA radioactive effluent technical specifications are also being developed by the Commission. The evaluation of the licensee's Appendix I submittal may result in a further revision to their effluent systems and the technical specifications for these systems.

EVALUATION

The existing Surry Power Station radioiodine and radioactive particulate effluent release Technical Specifications are based on the location of a hypothetical milk cow in the least favorable meteorological direction

at the closest location to the plant, i.e., the site boundary. The revised Technical Specifications do not assume this hypothetical cow but consider the most limiting real milk cow at the Surry site in accordance with current Commission guidelines. The revised Technical Specifications establish separate release rate limits for the radioiodines and particulates to account for the location of the real cow.

The revised technical specifications have instantaneous release rate limits based on the 10 CFR Part 20 limit of 1500 mrem thyroid exposure per year. The specifications also have design objectives for keeping releases as low as reasonably achievable (ALARA) in accordance with Appendix I to 10 CFR Part 50. The design objective for the Surry Power Station is 15 mrem thyroid dose per year at the most critical milk cow which corresponds to a yearly release rate of approximately one curie per year per reactor.

With this change, a cow census which was not previously required would now be required. The cow census would assure that the monitoring program would be adjusted as the location of cows is changed. The proposed change results in a radioactive effluent design objective that is compatible with Appendix I to 10 CFR Part 50.

#### ENVIRONMENTAL CONSIDERATION

Our evaluation of the potential for environmental impact as a result of changing the design objectives for systems controlling radioactive effluents is contained in the Environmental Impact Appraisal and Negative Declaration that are being issued with this Safety Evaluation.

#### CONCLUSION

We have concluded, based on the considerations discussed above, that: (1) because the changes do not involve a significant increase in the probability or consequences of accidents previously considered and do not involve a significant decrease in a safety margin, the changes do not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of these amendments will not be inimical to the common defense and security or to the health and safety of the public.

Date: September 13, 1976



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

ENVIRONMENTAL IMPACT APPRAISAL BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENTS NO. 24 TO LICENSES NOS. DPR-32 AND DPR-37

VIRGINIA ELECTRIC AND POWER COMPANY

SURRY POWER STATION UNITS 1 AND 2

DOCKETS NOS. 50-280 AND 50-281

INTRODUCTION

By letter dated August 30, 1976, and as modified by a telephone call on September 13, 1976, Virginia Electric and Power Company (the licensee) proposed to change the Technical Specifications for the Surry Power Station Units 1 and 2. The licensee requested that the limiting conditions for operation of Technical Specification 3.11, "Effluent Release", be changed with respect to radioactive effluent release limits for iodine and particulates. By letter dated June 4, 1976, VEPCO submitted information, as required by Appendix I of 10 CFR Part 50, to permit the staff's evaluation of VEPCO's plans to maintain releases of radioactive materials to as low as reasonably achievable levels. Our evaluation is presently underway.

ENVIRONMENTAL IMPACT OF THE PROPOSED ACTION

The revised iodine effluent limits would not significantly change the total quantities or type of radioactivity discharged to the environment from the Surry Power Station. Appendix I technical specifications for radioactive effluents are presently being developed and will be issued for Surry when complete. In the interim, the licensee proposes that the Surry radioactive effluent release limits for I-131 and particulates be revised to the proposed design objectives stated in staff's Concluding Statement on Appendix I (RM-50-2). These revised Technical Specifications would result in plant operation with limiting conditions for operation for radioactive iodine and particulates (design objectives) which are consistent with those in use or proposed for other operating reactors.

The revised effluent Technical Specifications being issued with this amendment establish separate specifications for radioiodine and radioactive particulates for the Surry Power Station. The previous specifications combined the radioiodine and particulate effluent limitations with the gaseous (noble gas) effluent limitations. The revised specification limits reflect the current Commission policy of considering radiation

exposure pathways to man through actual pathways rather than the extremely conservative methodology which assumed a hypothetical milk cow located at the site boundary in the worst meteorological sector. The Surry Technical Specifications had been written using this latter methodology which limited Station releases to 0.09 curies per year for radioiodines and particulates.

The revised Technical Specifications will have effluent release design objectives for radioiodines and particulates of 15 mrem per year thyroid exposure and total yearly quantity release design objective of one curie per year per reactor. The 15 mrem per year design objective dose corresponds to a 1.0 curie per year release from the site based on the nearest actual cow which is located at a distance of 5, 00 meters in the NNW sector. As there are two operating reactors at the Surry site, the 15 mrem per year site thyroid dose design objective is more limiting than the one curie total quantity per reactor design objective. A 15 mrem per year thyroid exposure represents an insignificant environmental impact.

If the licensee's releases exceed one half of the design objective (0.5 curies) in any quarter, the licensee must: (1) identify the causes of the releases, (2) initiate a program to reduce the releases, and (3) report these actions to the NRC. The revised specifications also limit the quarterly and annual average releases to two and four times the design objective quantities, respectively (i.e., two curies per quarter and four curies per year for the site).

The limit on noble gases continues to apply at the site boundary and is numerically the same as the previous total limit for the iodines and noble gases. While this would theoretically allow higher noble gas releases than has been the case previously, there will be no significant environmental impact resulting from such noble gas releases because the total allowable exposure at the site boundary remains less than 10 percent of the 10 CFR 20 limits.

Because the allowable release limits can result in only very small off site exposures, there is no significant environmental impact associated with the change in allowable quantities of radioactive materials released per year from the Surry Power Station.

#### CONCLUSION AND BASIS FOR NEGATIVE DECLARATION

On the basis of the foregoing analysis, it is concluded that there would be no significant environmental impact attributable to the proposed action. Having made this conclusion, the Commission has further concluded that no environmental impact statement for the proposed action need be prepared and that a negative declaration to this effect is appropriate.

Dated: September 13, 1976

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKETS NOS. 50-280 AND 50-281

VIRGINIA ELECTRIC & POWER COMPANY

NOTICE OF ISSUANCE OF AMENDMENTS TO FACILITY  
OPERATING LICENSES

AND

NEGATIVE DECLARATION

The U. S. Nuclear Regulatory Commission (the Commission) has issued Amendments No. 24 to Facility Operating Licenses Nos. DPR-32 and DPR-37 issued to Virginia Electric & Power Company (the licensee) for operation of the Surry Power Station, Units Nos. 1 and 2, located in Surry County, Virginia. The amendments are effective as of the date of issuance.

The amendments revise the gaseous effluent release Technical Specifications.

The application for the amendments complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license amendments. Prior public notice of these amendments was not required since the amendments do not involve a significant hazards consideration.

The Commission has prepared an environmental impact appraisal for the revised Technical Specifications and has concluded that an environmental impact statement for this particular action is not warranted because there will be no significant environmental impact attributable to the proposed action.

For further details with respect to this action, see (1) the application for amendments dated August 30, 1976, (2) Amendments No. 24 to Licenses Nos. DPR-32 and DPR-37, (3) The Commission's related Safety Evaluation, and (4) the Commission's Environmental Impact Appraisal. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N.W., Washington, D.C. and at the Swem Library, College of William and Mary, Williamsburg, Virginia.

A copy of items (2), (3), and (4) may be obtained upon request addressed to the U. S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Director, Division of Operating Reactors.

Dated at Bethesda, Maryland, this 13th day of September 1976.

FOR THE NUCLEAR REGULATORY COMMISSION



Robert W. Reid, Chief  
Operating Reactors Branch #4  
Division of Operating Reactors