

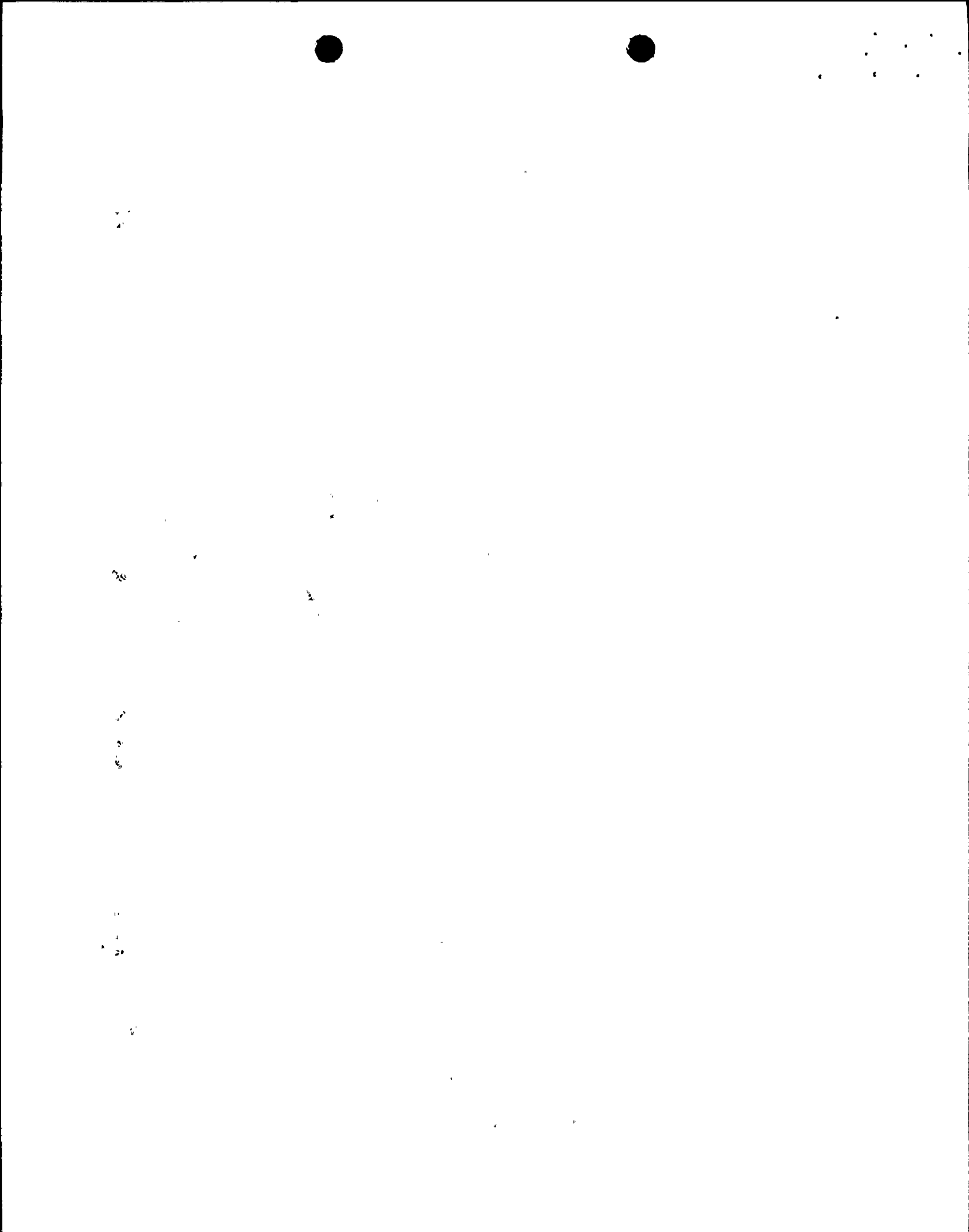
ATTACHMENT 1

Marked-up St. Lucie Unit 1 Technical Specification Pages:

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REACTOR COOLANT SYSTEM

SPECIFIC ACTIVITY

LIMITING CONDITION FOR OPERATION

3.4.8 The specific activity of the primary coolant shall be limited to:

- a.  $\leq 1.0 \mu\text{Ci/gram DOSE EQUIVALENT I-131}$ , and
- b.  $\leq 100/E \mu\text{Ci/gram}$ .

APPLICABILITY: MODES 1, 2, 3, 4 and 5.

ACTION:

MODES 1, 2 and 3\*:

~~a. With the specific activity of the primary coolant  $> 1.0 \mu\text{Ci/gram DOSE EQUIVALENT I-131}$  but within the allowable limit (below and to the left of the line) shown on Figure 3.4-1, operation may continue for up to 100 hours provided that operation under these circumstances shall not exceed 10 percent of the unit's total yearly operating time. The provisions of Specification 3.0.4 are not applicable.~~

Delete

a. b. With the specific activity of the primary coolant  $> 1.0 \mu\text{Ci/gram DOSE EQUIVALENT I-131}$  for more than 100 hours during one continuous time interval or exceeding the limit line shown on Figure 3.4-1, be in HOT STANDBY with  $T_{\text{avg}} < 500^\circ\text{F}$  within 6 hours.

b. c. With the specific activity of the primary coolant  $> 100/E \mu\text{Ci/gram}$ , be in HOT STANDBY with  $T_{\text{avg}} < 500^\circ\text{F}$  within 6 hours.

MODES 1, 2, 3, 4 and 5:

~~d. With the specific activity of the primary coolant  $> 1.0 \mu\text{Ci/gram DOSE EQUIVALENT I-131}$  or  $> 100/E \mu\text{Ci/gram}$ , perform the sampling and analysis requirements of item 4 a) of Table 4.4-4 until the specific activity of the primary coolant is restored to within its limits. A Special Report shall be prepared and submitted to the Commission within 30 days pursuant to Specification 6.9.2. This report shall contain the results of the specific activity analyses together with the following information:~~

- ~~1. Reactor power history starting 48 hours prior to the first sample in which the limit was exceeded;~~

Delete

\* With  $T_{\text{avg}} \geq 500^\circ\text{F}$ .

## REACTOR COOLANT SYSTEM

### ACTION: (Continued)

- ~~2. Fuel burnup by core region,~~
- ~~3. Clean-up flow history starting 48 hours prior to the first sample in which the limit was exceeded,~~
- ~~4. History of de-gassing operation, if any, starting 48 hours prior to the first sample in which the limit was exceeded, and~~
- ~~5. The time duration when the specific activity of the primary coolant exceeded 1.0  $\mu\text{Ci}/\text{gram}$  DOSE EQUIVALENT I-131.~~

### SURVEILLANCE REQUIREMENTS

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4.4.8 The specific activity of the primary coolant shall be determined to be within the limits by performance of the sampling and analysis program of Table 4.4-4.

## REACTOR COOLANT SYSTEM

### BASES

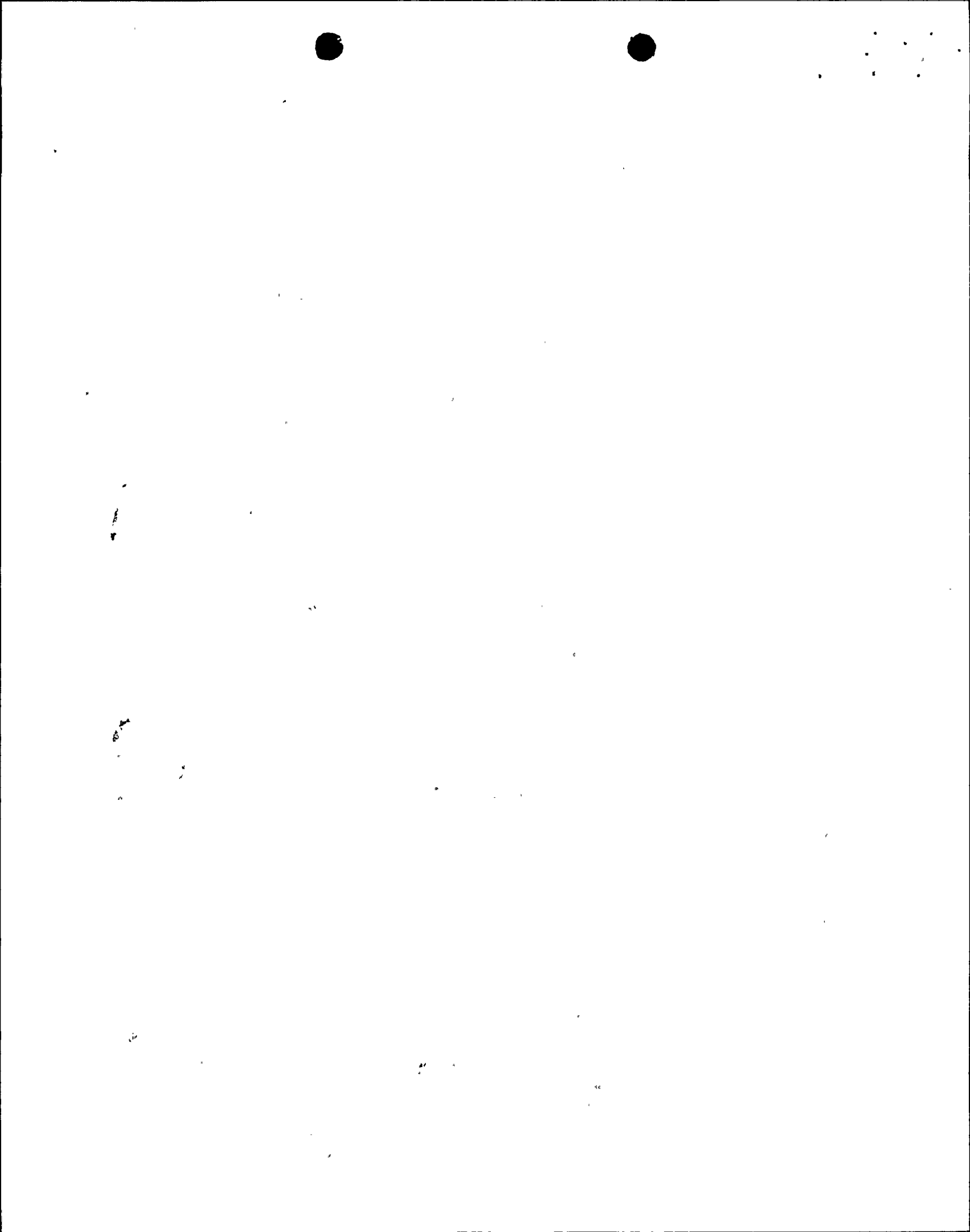
time and temperature dependent. Corrosion studies show that operation may be continued with contaminant concentration levels in excess of the Steady State Limits, up to the Transient Limits, for the specified limited time intervals without having a significant effect on the structural integrity of the Reactor Coolant System. The time interval permitting continued operation within the restrictions of the Transient Limits provides time for taking corrective actions to restore the contaminant concentrations to within the Steady State Limits.

The surveillance requirements provide adequate assurance that concentrations in excess of the limits will be detected in sufficient time to take corrective action.

### 3/4.4.8 SPECIFIC ACTIVITY

~~The limitations on the specific activity of the primary coolant ensure that the resulting 2 hour doses at the site boundary will not exceed an appropriately small fraction of Part 100 limits following a steam generator tube rupture accident in conjunction with an assumed steady state primary-to-secondary steam generator leakage rate of 1.0 GPM and a concurrent loss of offsite electrical power. The values for the limits on specific activity represent interim limits based upon a parametric evaluation by the NRC of typical site locations. These values are conservative in that specific site parameters of the St. Lucie site, such as site boundary location and meteorological conditions, were not considered in this evaluation. The NRC is finalizing site specific criteria which will be used as the basis for the reevaluation of the specific activity limits of this site. This reevaluation may result in higher limits.~~

~~The ACTION statement permitting POWER OPERATION to continue for limited time periods with the primary coolant's specific activity > 1.0  $\mu$ Ci/gram DOSE EQUIVALENT I-131, but within the allowable limit shown on Figure 3.4-1, accommodates possible iodine spiking phenomenon which may occur following changes in THERMAL POWER. Operation with specific activity levels exceeding 1.0  $\mu$ Ci/gram DOSE EQUIVALENT I-131 but within the limits shown on Figure 3.4-1 must be restricted to no more than 10 percent of the unit's yearly operating time since the activity levels allowed by Figure 3.4-1 increase the 2 hour thyroid dose at the site boundary by a factor of up to 20 following a postulated steam generator tube rupture.~~



## ADMINISTRATIVE CONTROLS

6.9.1.2 The startup report shall address each of the tests identified in the FSAR and shall include a description of the measured values of the operating conditions or characteristics obtained during the test program and a comparison of these values with design predictions and specifications. Any corrective actions that were required to obtain satisfactory operation shall also be described. Any additional specific details required in license conditions based on other commitments shall be included in this report.

6.9.1.3 Startup reports shall be submitted within (1) 90 days following completion of the startup test program, (2) 90 days following resumption or commencement of commercial power operation, or (3) 9 months following initial criticality, whichever is earliest. If the Startup Report does not cover all three events (i.e., initial criticality, completion of startup test program, and resumption or commencement of commercial operation), supplementary reports shall be submitted at least every three months until all three events have been completed.

### ANNUAL REPORTS <sup>1/</sup>

6.9.1.4 Annual reports covering the activities of the unit as described below for the previous calendar year shall be submitted prior to March 1 of each year. The initial report shall be submitted prior to March 1 of the year following initial criticality.

6.9.1.5 Reports required on an annual basis shall include a tabulation on an annual basis of the number of station, utility and other personnel (including contractors) receiving exposures greater than 100 mrem/yr and their associated man-rem exposure according to work and job functions,<sup>2/</sup> e.g., reactor operations and surveillance, inservice inspection, routine maintenance, special maintenance (describe maintenance), waste processing, and refueling. The dose assignments to various duty functions may be estimated based on pocket dosimeter, TLD, or film badge measurements. Small exposures totalling less than 20% of the individual total dose need not be accounted for. In the aggregate, at least 80% of the total whole body dose received from external sources should be assigned to specific major work functions.

### MONTHLY OPERATING REPORTS

6.9.1.6 Routine reports of operating statistics and shutdown experience, including documentation of all challenges to the PORVs or safety valves, shall be submitted on a monthly basis to the NRC, no later than the 15th of each month following the calendar month covered by the report.

<sup>1/</sup> A single submittal may be made for a multiple unit station. The submittal should combine those sections that are common to all units at the station.

<sup>2/</sup> This tabulation supplements the requirements of 520.407 of 10 CFR Part 20.

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St. Lucie Unit 1

Insert - page 6 - 16

Annual reports shall also include the results of specific activity analysis in which the primary coolant exceeded the limits of Specification 3.4.8. The following information shall be included: (1) Reactor power history starting 48 hours prior to the first sample in which the limit was exceeded; (2) Results of the last isotopic analysis for radioiodine performed prior to exceeding the limit, results of analysis while the limit was exceeded and results of one analysis after the 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; (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.



ATTACHMENT 2

Marked-up St. Lucie Unit 2 Technical Specification Pages

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# REACTOR COOLANT SYSTEM

## 3/4.4.8 SPECIFIC ACTIVITY

### LIMITING CONDITION FOR OPERATION

3.4.8 The specific activity of the primary coolant shall be limited to:

- a. Less than or equal to 1.0 microcurie/gram DOSE EQUIVALENT I-131, and
- b. Less than or equal to  $100/\bar{E}$  microcuries/gram.

APPLICABILITY: MODES 1, 2, 3, 4 and 5.

ACTION:

MODES 1, 2 and 3\*:

~~a. With the specific activity of the primary coolant greater than 1.0 microcurie/gram DOSE EQUIVALENT I-131 but within the allowable limit (below and to the left of the line) shown on Figure 3.4-1, operation may continue for up to 48 hours provided that the cumulative operating time under these circumstances does not exceed 800 hours in any consecutive 12 month period. With the total cumulative operating time at a primary coolant specific activity greater than 1.0 microcurie/gram DOSE EQUIVALENT I-131 exceeding 500 hours in any consecutive 6 month period, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within 30 days indicating the number of hours above this limit. The provisions of Specification 3.0.4 are not applicable.~~

Delete

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With the specific activity of the primary coolant greater than 1.0 microcurie/gram DOSE EQUIVALENT I-131 for more than 48 hours during one continuous time interval or exceeding the limit line shown on Figure 3.4-1, be in at least HOT STANDBY with  $T_{avg}$  less than 500°F within 6 hours.

b

With the specific activity of the primary coolant greater than  $100/\bar{E}$  microcuries/gram, be in at least HOT STANDBY with  $T_{avg}$  less than 500°F within 6 hours.

\* With  $T_{avg}$  greater than or equal to 500°F.



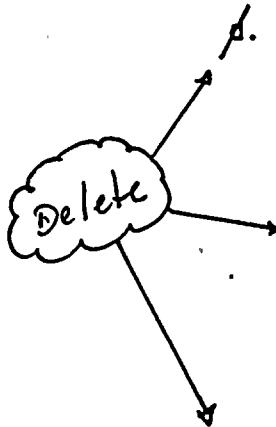
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## REACTOR COOLANT SYSTEM

ACTION: (Continued)

MODES 1, 2, 3, 4 and 5<sup>r</sup>



d. ~~With the specific activity of the primary coolant greater than 1 microcurie/gram DOSE EQUIVALENT I-131 or greater than 100/E microcuries/gram, perform the sampling and analysis requirements of item 4 a) of Table 4.4-4 until the specific activity of the primary coolant is restored to within its limits. A Special Report shall be prepared and submitted to the Commission within 30 days pursuant to Specification 6.9.2. This report shall contain the results of the specific activity analyses together with the following information:~~

- ~~1. Reactor power history starting 48 hours prior to the first sample in which the limit was exceeded,~~
- ~~2. Fuel burnup by core region,~~
- ~~3. Clean up flow history starting 48 hours prior to the first sample in which the limit was exceeded,~~
- ~~4. History of degassing operation, if any, starting 48 hours prior to the first sample in which the limit was exceeded, and~~
- ~~5. The time duration when the specific activity of the primary coolant exceeded 1 microcurie/gram DOSE EQUIVALENT I-131.~~

## SURVEILLANCE REQUIREMENTS

4.4.8 The specific activity of the primary coolant shall be determined to be within the limits by performance of the sampling and analysis program of Table 4.4-4.

## REACTOR COOLANT SYSTEM

### BASES

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#### CHEMISTRY (Continued)

the chemistry within the Steady State Limits provides adequate corrosion protection to ensure the structural integrity of the Reactor Coolant System over the life of the plant. The associated effects of exceeding the oxygen, chloride and fluoride limits are time and temperature dependent. Corrosion studies show that operation may be continued with contaminant concentration levels in excess of the Steady State Limits, up to the Transient Limits, for the specified limited time intervals without having a significant effect on the structural integrity of the Reactor Coolant System. The time interval permitting continued operation within the restrictions of the Transient Limits provides time for taking corrective actions to restore the contaminant concentrations to within the Steady State Limits.

The surveillance requirements provide adequate assurance that concentrations in excess of the limits will be detected in sufficient time to take corrective action.

#### 3/4.4.8 SPECIFIC ACTIVITY

The limitations on the specific activity of the primary coolant ensure that the resulting 2 hour doses at the site boundary will not exceed an appropriately small fraction of Part 100 limits following a steam generator tube rupture accident in conjunction with an assumed steady state primary-to-secondary steam generator leakage rate of 1.0 gpm and a concurrent loss of offsite electrical power. The values for the limits on specific activity represent limits based upon a parametric evaluation by the NRC of typical site locations. These values are conservative in that specific site parameters of the St. Lucie site, such as site boundary location and meteorological conditions, were not considered in this evaluation.

The ACTION statement permitting POWER OPERATION to continue for limited time periods with the primary coolant's specific activity greater than 1.0 microcurie/gram DOSE EQUIVALENT I-131, but within the allowable limit shown on Figure 3.4-1, accommodates possible iodine spiking phenomenon which may occur following changes in THERMAL POWER. ~~Operation with specific activity levels exceeding 1.0 microcurie/gram DOSE EQUIVALENT I-131 but within the limits shown on Figure 3.4-1 must be restricted to no more than 800 hours per year (approximately 10 percent of the unit's yearly operating time) since the activity levels allowed by Figure 3.4-1 increase the 2-hour thyroid dose at the site boundary by a factor of up to 20 following a postulated steam generator tube rupture. The reporting of cumulative operating time over 500 hours in any 6 month consecutive period with greater than 1.0 microcurie/gram DOSE EQUIVALENT I-131 will allow sufficient time for Commission evaluation of the circumstances prior to reaching the 800-hour limit.~~

## REACTOR COOLANT SYSTEM

### BASES

#### SPECIFIC ACTIVITY (Continued)

*Delete*

The sample analysis for determining the gross specific activity and  $\bar{E}$  can exclude the radioiodines because of the low primary coolant limit of 1 microcurie/gram DOSE EQUIVALENT I-131, and because, if the limit is exceeded, the radioiodine level is to be determined every 4 hours. If the gross specific activity level and radioiodine level in the primary coolant were at their limits, the radioiodine contribution would be approximately 1%. In a release of primary coolant with a typical mixture of radioactivity, the actual radioiodine contribution would probably be about 20%. The exclusion of radionuclides with half-lives less than 10 minutes from these determinations has been made for several reasons. The first consideration is the difficulty in identifying short-lived radionuclides in a sample that requires a significant time to collect, transport, and analyze. The second consideration is the predictable delay time between the postulated release of radioactivity from the primary coolant to its release to the environment and transport to the SITE BOUNDARY, which is related to at least 30 minutes decay time. The choice of 10 minutes for the half-life cutoff was made because of the nuclear characteristics of the typical primary coolant radioactivity. The radionuclides in the typical primary coolant have half-lives of less than 4 minutes or half-lives of greater than 14 minutes, which allows a distinction between the radionuclides above and below a half-life of 10 minutes. For these reasons the radionuclides that are excluded from consideration are expected to decay to very low levels before they could be transported from the primary coolant to the SITE BOUNDARY under any accident condition.

Based upon the above considerations for excluding certain radionuclides from the sample analysis, the allowable time of 2 hours between sample taking and completing the initial analysis is based upon a typical time necessary to perform the sampling, transport the sample, and perform the analysis of about 90 minutes. The gross count should be made in a reproducible geometry of sample and counter having reproducible  $\gamma$  or  $\beta$  self-shielding properties. The counter should be reset to a reproducible efficiency versus energy. It is not necessary to identify specific nuclides.

The determination of the contributors to the  $\bar{E}$  result should be based upon those energy peaks identifiable with a 95% confidence level. The radiochemical determination of nuclides should be based on multiple counting of the sample with typical counting basis following sampling of less than 1 hour, about 2 hours, about 1 day, about 1 week, and about 1 month.

Reducing  $T_{avg}$  to less than 500°F prevents the release of activity should a steam generator tube rupture since the saturation pressure of the primary coolant is below the lift pressure of the atmospheric steam relief valves. The surveillance requirements provide adequate assurance that excessive specific activity levels in the primary coolant will be detected in sufficient time to take corrective action. Information obtained on iodine spiking will be used to assess the parameters associated with spiking phenomena. A reduction in frequency of isotopic analyses following power changes may be permissible if justified by the data obtained.

ADMINISTRATIVE CONTROLS

ANNUAL REPORTS (Continued)

greater than 100 mrems/yr and their associated man-rem exposure according to work and job functions,<sup>2/</sup> e.g., reactor operations and surveillance, inservice inspection, routine maintenance, special maintenance (describe maintenance), waste processing, and refueling. The dose assignments to various duty functions may be estimated based on pocket dosimeter, TLD, or film badge measurements. Small exposures totalling less than 20% of the individual total dose need not be accounted for. In the aggregate, at least 80% of the total whole body dose received from external sources should be assigned to specific major work functions.

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MONTHLY OPERATING REPORTS

6.9.1.6 Routine reports of operating statistics and shutdown experience, including documentation of all challenges to the PORVs or safety valves, shall be submitted on a monthly basis to the NRC, no later than the 15th of each month following the calendar month covered by the report.

<sup>2/</sup> This tabulation supplements the requirements of §20.407 of 10 CFR Part 20.



St. Lucie Unit 2

Insert 6 - 17

- b. The results of specific activity analysis in which the primary coolant exceeded the limits of Specification 3.4.8. The following information shall be included: (1) Reactor power history starting 48 hours prior to the first sample in which the limit was exceeded; (2) Results of the last isotopic analysis for radioiodine performed prior to exceeding the limit, results of analysis while the limit was exceeded and results of one analysis after the 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; (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.



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## ATTACHMENT 3

### SAFETY ANALYSIS

#### Introduction

These amendments are submitted to implement the NRC recommendations of Generic Letter (GL) 85-19, "Reporting Requirements on Primary Coolant Iodine Spikes" dated September 27, 1985. In GL 85-19, the staff determined that the primary coolant iodine spike reporting requirement could be reduced from a short-term report (e.g., Special Report or Licensee Event Report) to an item which is included in the Annual Report. Additionally, the staff determined that the existing requirements to shut down a plant if coolant iodine activity limits are exceeded for 800 hours in a 12-month period can be eliminated. The St. Lucie Unit 1 and 2 Technical Specifications 3.4.8, and Bases for these Technical Specifications are proposed to be revised.

#### Discussion

St. Lucie Unit 1 and 2 Technical Specifications currently include ACTION requirements to be taken when the specific activity of the primary coolant exceeds certain limits. In Generic Letter 85-19, "Reporting Requirements on Primary Coolant Iodine Spikes," dated September 27, 1985, the NRC determined that the reporting requirements for iodine spiking can be reduced from a short-term report (Special Report or Licensee Event Report) to an item which is to be included in the Annual Report. The information to be included in the Annual Report is similar to that previously required in the Licensee Event Report but has been changed to more clearly designate the results to be included from the specific activity analysis and to delete the information regarding fuel burnup by core region.

The staff also determined that the existing requirements to shut down a plant if coolant iodine activity limits are exceeded for 800 hours in a 12-month period can be eliminated. The quality of nuclear fuel has been greatly improved over the past decade with the result that normal coolant iodine activity (i.e. in the absence of iodine spiking) is well below the limit. Appropriate actions would be initiated long before accumulating 800 hours above the iodine activity limit. In addition, 10 CFR 50.72(b)(1)(ii) requires the NRC to be

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immediately notified of fuel cladding failures that exceed expected values or that are caused by unexpected factors. Therefore, this Technical Specification limit is no longer considered necessary by the NRC on the basis that proper fuel management by licensees and existing reporting requirements should preclude ever approaching the limit.

Accordingly, FPL proposes to revise the St. Lucie Unit 1 and 2 ACTION statements to reflect Generic Letter 85-19 proposed revisions and to revise the Bases of this Specification reflecting these revised requirements and to include in the Administrative Controls section the information to be included in the Annual Report.

#### ATTACHMENT 4

### DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATION

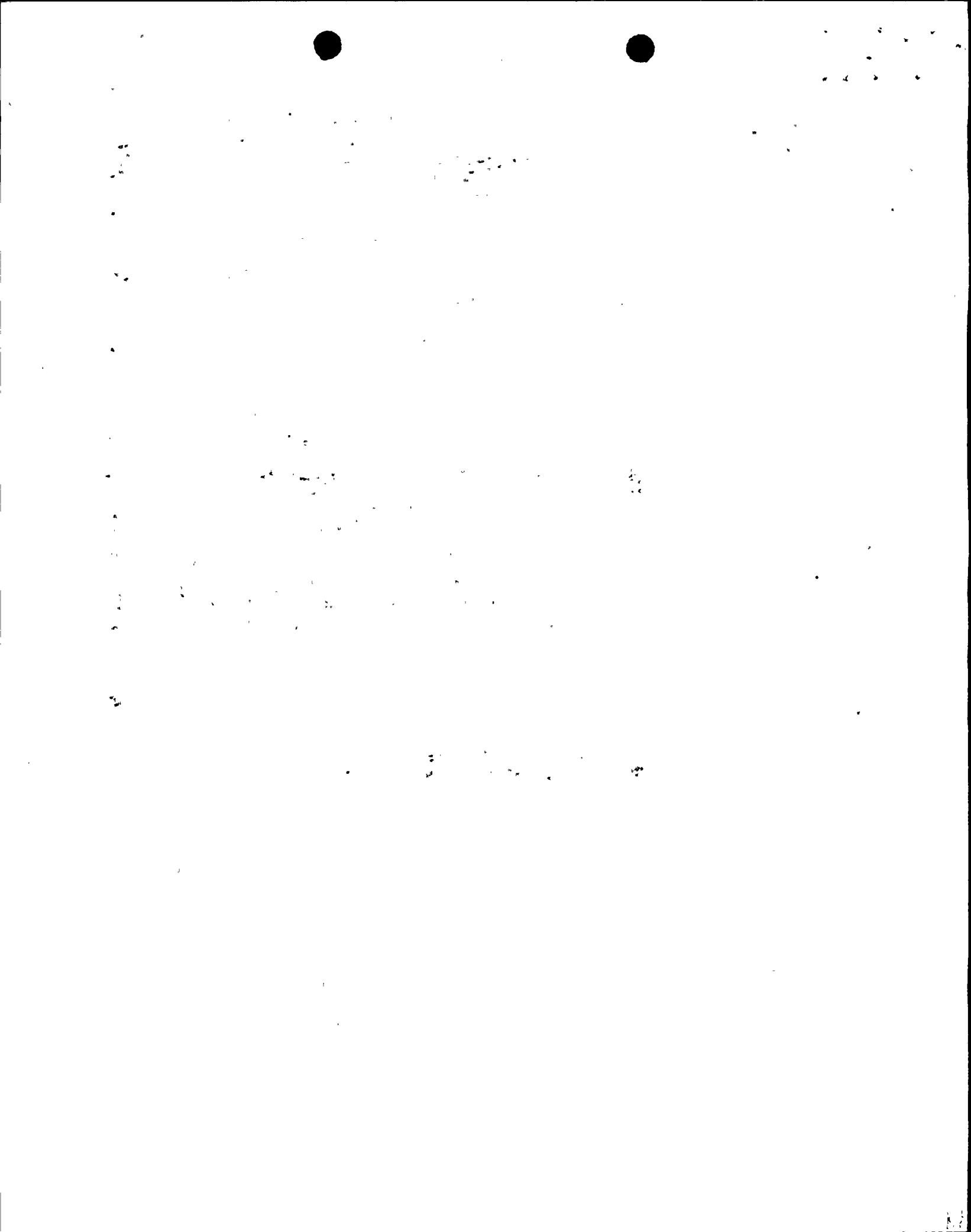
The standards used to arrive at a determination that a request for amendment involves no significant hazards consideration are included in the Commission's regulations, 10 CFR 50.92, which states that no significant hazards considerations are involved if the operation of the facility in accordance with the proposed amendment would not (1) involve a significant increase in the probability or consequences of an accident previously evaluated; or (2) create the possibility of a new or different kind of accident from any accident previously evaluated or (3) involve a significant reduction in a margin of safety. Each standard is discussed as follows:

- (1) Operation of the facility in accordance with the proposed amendment would not involve a significant increase in the probability or consequences of an accident previously evaluated.

The NRC Staff has previously evaluated this change in Generic Letter 85-19, "Reporting Requirements on Primary Coolant Iodine Spikes", and determined that the special reporting requirements related to primary coolant iodine spikes are unnecessary.

It has been determined by the NRC that the reporting requirements for iodine spiking can be reduced from a short-term report (Special Report or Licensee Event Report) to an item which is to be included in the Annual Report. The information to be included in the Annual Report is similar to that previously required in the Licensee Event Report but has been changed to more clearly designate the results to be included from the specific activity analysis and to delete the information regarding fuel burnup by core region.

The NRC has also determined that the existing requirements to shut down a plant if coolant iodine activity limits are exceeded for 800 hours in a 12-month period can be eliminated. The quality of nuclear fuel has been greatly improved over the past decade with the result that normal coolant iodine activity (i.e. in the absence of iodine spiking) is well below the limit. Appropriate actions would be initiated long before accumulating 800 hours above the iodine activity limit. In addition, 10 CFR 50.72(b)(1)(ii) requires the NRC to be immediately



notified of fuel cladding failures that exceed expected values or that are caused by unexpected factors. Therefore, this Technical Specification limit is no longer considered necessary on the basis that proper fuel management by licensees and existing reporting requirements should preclude ever approaching the limit.

The changes do not affect assumptions contained in plant safety analyses, nor do they affect Technical Specifications that preserve safety analysis assumptions. Therefore, the proposed changes do not affect the probability or consequences of accidents previously analyzed.

- (2) Use of the modified specification would not create the possibility of a new or different kind of accident from any accident previously evaluated.

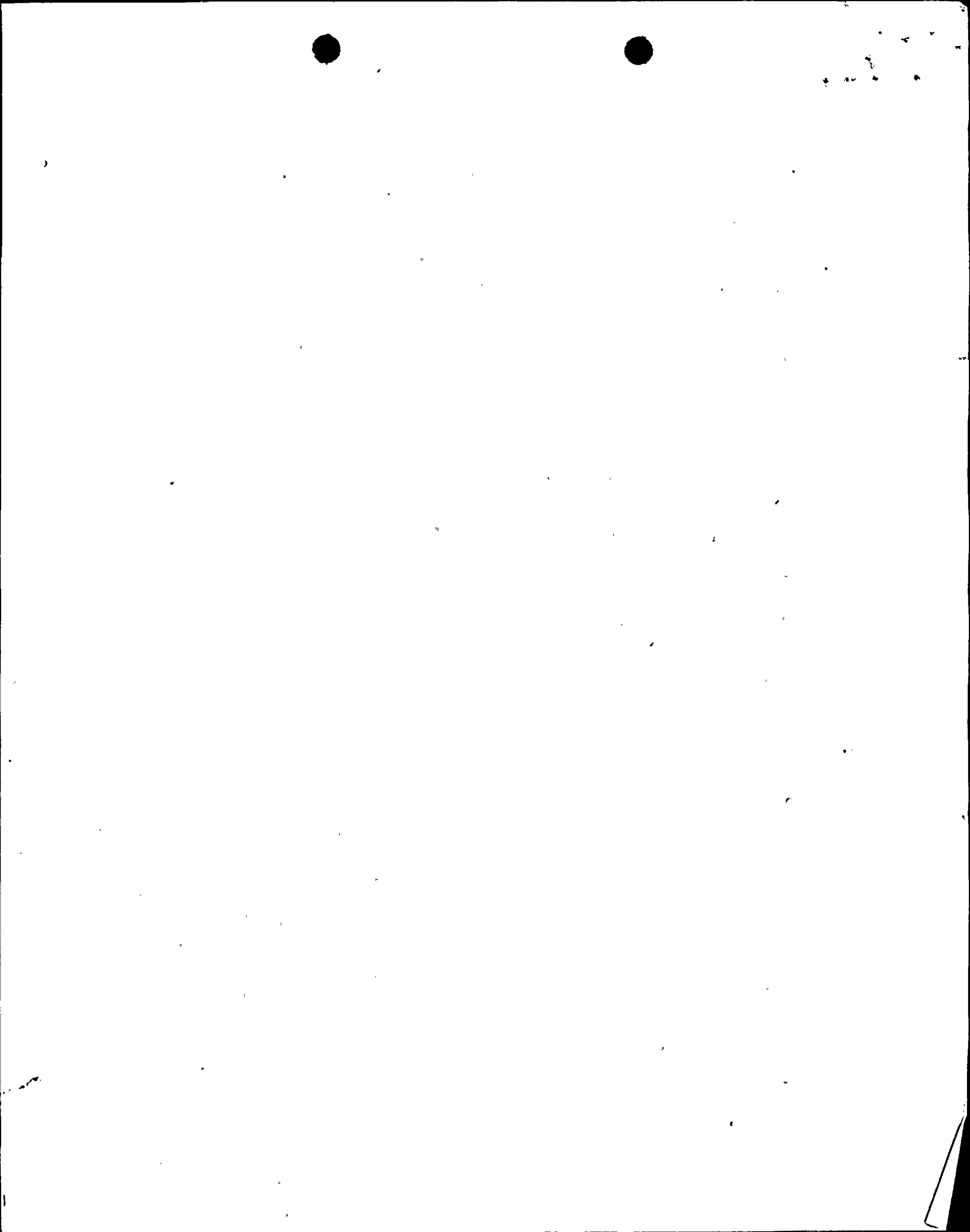
The NRC has previously evaluated this change in Generic Letter 85-19 and determined that it results in deleting unnecessary reporting requirements. Additionally, the Technical Specification requiring reactor shutdown is no longer considered necessary on the basis that proper fuel management by licensees and existing reporting requirements in the Code of Federal Regulations should preclude ever approaching the limit. This change deletes reporting requirements and unnecessary shutdown requirements.

A new or different kind of accident is not created since Technical Specification limits on primary coolant specific activity remain unchanged.

- (3) Use of the modified specification would not involve a significant reduction in a margin of safety.

The changes being proposed by FPL do not relate to or modify the safety margins defined in and maintained by the Technical Specifications. Therefore, the proposed changes would not involve any reduction in a margin of safety.

Based on the above, we have determined that the amendment request does not (1) involve a significant increase in the probability or consequences of an accident previously evaluated, (2) create the probability of a new or different kind of accident from any accident previously evaluated, or (3) involve a significant reduction in a margin of safety; and therefore does not involve a significant hazards consideration.





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