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SUBJECT: Forwards revised response to Items 1 & 6 of NRC RAI dtd 970911 re proposed TS amend for SG tube sleeving.Encl 3 contain changes to TS Bases that support requested TS amend. Proprietary rept encl.Rept withheld,per 10CFR2.790(b)(1). *See Proposed Change to Specs.*

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102-04292-JML/SAB/GAM  
May 26, 1999

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- References:
1. Letter 102-03325-WLS/SAB/JRP, dated April 18, 1995, from William L. Stewart, APS, to NRC, "Technical Specification Amendment Request - Sleeving Process for Steam Generator Tube Repair"
  2. Letter 102-03938-JML/AKK/JRP, dated May 23, 1997, from James M. Levine, APS, to NRC, "Revised Technical Specification Amendment Request Sleeving Process for Steam Generator Tube Repair"
  3. Letter dated September 11, 1997, from Kristine M. Thomas, NRC, to James M. Levine, APS, "Request for Additional Information Regarding Proposed Technical Specification Amendment for Steam Generator Tube Sleeving for the Palo Verde Nuclear Generating Station (TAC Nos. M98920, M98921 and M98922)"
  4. Letter 102-04025-JML/SAB/RMW, dated October 7, 1997, from James M. Levine, APS, to NRC, "Response to Request for Additional Information Regarding Proposed Technical Specification Amendment for Steam Generator Tube Sleeving"
  5. Letter 102-04186-JML/AKK, dated September 27, 1998, from James M. Levine, APS, "APS Response to Request for Additional Information Regarding Proposed Technical Specification Amendment for Steam Generator Tube Sleeving"

Dear Sirs:

Subject: Palo Verde Nuclear Generating Station (PVNGS)  
Units 1, 2 and 3  
Docket Nos. STN 50-528/529/530  
Proposed Amendment for Steam Generator Tube Sleeving: Revised  
Responses to NRC Request for Additional Information and Revised  
Proposed Amendment

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Change: NRC PDR

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Proposed Amendment for Steam Generator Tube Slewing: Revised Responses to  
NRC Request for Additional Information and Revised Proposed Amendment

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In Reference 1, APS submitted a request to NRC for a Technical Specification amendment that would allow the installation of ABB-Combustion Engineering (ABB-CE) tube sleeves as an alternative to plugging defective steam generator (SG) tubes at PVNGS. In Reference 2, APS submitted a superseding revision to the original request for steam generator tube slewing in response to NRC concerns with sleeve-to-tube weld indications found in ABB-CE sleeves at Prairie Island Nuclear Plant in 1996. In Reference 3, the NRC sent APS a request for additional information (RAI) related to APS' SG tube slewing amendment request. In Reference 4, APS notified the NRC that the response to the RAI would be delayed in order to assess ongoing industry and NRC activities that could impact the responses. In Reference 5, APS submitted responses to the Reference 3 NRC RAI.

In the time since the RAI responses were submitted in Reference 5, APS has developed new information related to the SG tube slewing amendment request. Enclosure 1 to this letter contains revised responses to the NRC RAI questions 1 and 6 (Reference 3) that supersede the previous responses submitted in Reference 5. In addition, provided in Enclosure 2 to this letter is a revised SG tube slewing amendment request that supersedes the previous requests. Enclosure 2 contains the following sections that support the proposed Technical Specification amendment:

- A. Description of the Proposed Technical Specification Amendment
- B. Purpose of the Technical Specification
- C. Need for the Technical Specification Amendment
- D. Safety Analysis for the Proposed Technical Specification Amendment
- E. No Significant Hazards Consideration Determination
- F. Environmental Consideration
- G. Marked-up Technical Specification Pages
- H. Retyped Technical Specification Pages

Enclosure 3 contains changes to the TS Bases that support this requested TS amendment. Enclosure 4 contains the supporting Combustion Engineering report CEN-630-P, Revision 02, dated June 1997, "Repair of 3/4" O.D. Steam Generator Tubes Using Leak Tight Sleeves." This revision supersedes previous revisions. Please note that this report contains information considered to be proprietary to CE. Included in Enclosure 4 is an affidavit from CE requesting that this report be withheld from public disclosure pursuant to 10 CFR 2.790(b)(1).

The proposed amendment in Enclosure 2 has been reviewed and approved by the Plant Review Board (PRB) and the Offsite Safety Review Committee (OSRC) in accordance



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Proposed Amendment for Steam Generator Tube Slewing: Revised Responses to  
NRC Request for Additional Information and Revised Proposed Amendment

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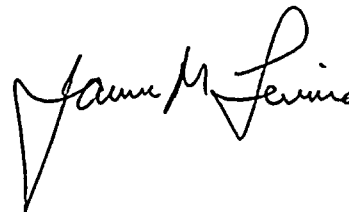
with the PVNGS Quality Assurance Program. In addition, this amendment request is consistent with other SG tube slewing licensing actions that have been approved by the NRC for various nuclear facilities such as Kewaunee, Beaver Valley, Prairie Island, Waterford, Arkansas Nuclear One and San Onofre.

APS requests that the enclosed technical specification amendment request be reviewed and approved by July 31, 1999, with an allowance of 45 days for implementation of the approved amendment. Regulatory approval by that date will allow the option of slewing defective steam generator tubes during the Unit 1 refueling outage that is currently scheduled to begin in September 1999.

By copy of this letter, this submittal is being forwarded to the Arizona Radiation Regulatory Agency (ARRA) pursuant to 10 CFR 50.91(b)(1).

This letter does not make any commitments to the NRC. Please contact Mr. Scott Bauer at (602) 393-5978 if you have any questions or would like additional information regarding this matter.

Sincerely,

A handwritten signature in black ink, appearing to read "James M. Levine". The signature is fluid and cursive, with a large initial "J" and a stylized "L".

Enclosures

JML/SAB/GAM

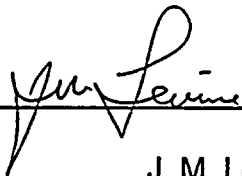
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COUNTY OF MARICOPA   )

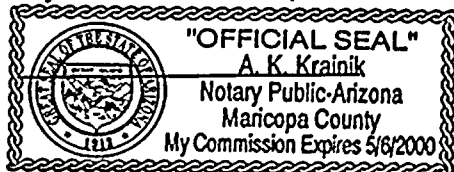
I, J. M. Levine, represent that I am Senior Vice President - Nuclear, Arizona Public Service Company (APS), that the foregoing document has been signed by me on behalf of APS with full authority to do so, and that to the best of my knowledge and belief, the statements made therein are true and correct.

  
\_\_\_\_\_  
J. M. Levine

Sworn To Before Me This 26 Day Of May, 1999.

  
\_\_\_\_\_  
Notary Public

My Commission Expires



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**ENCLOSURE 1**

**Revised Response to Items 1 and 6  
of NRC Request for Additional Information  
dated September 11, 1997  
Regarding Proposed Technical Specification Amendment for  
Steam Generator Tube Sleaving**



## Revised Responses to NRC RAI Questions 1 and 6

### NRC Request 1

The proposed Technical Specification (TS) changes describe eddy current inspection criteria for steam generator (SG) tubes without particular reference to sleeve inspections. Without explicit inspection criteria in the TS, the requirements for the initial sample scope and subsequent expansion criteria for sleeve inspections would be based on existing TS requirements (e.g., 3% initial sample scope). The staff believes that the proposed TS do not provide adequate inservice inspection (ISI) of sleeved steam generator tubes, and that the inspection and expansion criteria in the EPRI Steam Generator Tube Examination Guidelines should be satisfied, as a minimum, for all sleeved tubes. Please provide appropriate wording in the TS reflecting this criteria. For reference, a previously adopted table incorporated in the TS for another licensee is attached.

Further, several TS sections (4.4.4.2; 4.4.4.3.b; 4.4.4.3.c and 4.4.4.4.b) will be affected and need to be modified when a separate table is generated for sleeve inspections.

### APS Response

The proposed steam generator tube sleeving amendment has been revised to include explicit tube sleeve inspection criteria by providing a table similar to the one attached with the NRC Request for Additional Information (RAI) and by modifying pertinent TS sections. One deviation from the table recommended by NRC is that the PVNGS table does not contain an accommodation for different sleeve types since PVNGS will use only the ABB-CE sleeves. The revised TS amendment request is provided as Enclosure 2 with this submittal. (Note: The NRC RAI refers to TS section numbers prior to implementation of Improved TS at PVNGS.)



## Revised Responses to NRC RAI Questions 1 and 6

### NRC Request 6

The current TS Limiting Condition for Operation (LCO) 3.4.5.2.c specifies an allowable leakage of 1 gpm for the total primary-to-secondary leakage through all steam generators and 720 gallons per day through any one steam generator. The NRC staff position regarding operational leakage limits is that allowable operational leakage limits should be reduced to 150 gallons per day through any one steam generator when sleeving of steam generator tubes is performed. Please revise the TS accordingly.

### APS Response

The proposed steam generator (SG) tube sleeving amendment has been revised to include a limit of 150 gallon per day leakage through any one SG. This limit will apply to all SGs, not just to SGs that have tube sleeves installed. This action is being taken to avoid confusion that would potentially result from having two sets of leakage criteria apply to a unit where one SG has tube sleeves installed and the other SG does not. The revised TS amendment request is provided as Enclosure 2 with this submittal.

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**ENCLOSURE 2**

**Proposed Amendment to  
PVNGS Technical Specifications  
to Allow Steam Generator Tube Sleeves**





## A. DESCRIPTION OF THE PROPOSED AMENDMENT

The proposed amendment would revise the Palo Verde Nuclear Generating Station (PVNGS) Technical Specification (TS) Limiting Condition of Operation (LCO) 3.4.14 and TS Sections 5.5.9 and 5.6.8 to allow the use of steam generator (SG) tube sleeves as an alternative to plugging defective SG tubes. The sleeves to be installed are discussed in Combustion Engineering, Inc. (CE or ABB-CE) proprietary report CEN-630-P, Revision 02, dated June, 1997, provided with this submittal as Enclosure 4.

Specifically, the TSs would be revised as follows:

- 1) In Specification 3.4.14, "RCS Operational Leakage," the primary to secondary leakage limits in LCO 3.4.14.d of 1 gallon per minute (gpm) through all steam generators and LCO 3.4.14.e of 720 gallons per day (gpd) through any one steam generator will be replaced with a limit of 150 gpd through any one SG.
- 2) Section 5.5.9, Steam Generator Tube Surveillance Program, would be expanded to include tube sleeves in the steam generator surveillance program.
- 3) Section 5.5.9.1, Steam Generator Sample Selection and Inspection, would be changed to clarify that the steam generator tubes and tube sleeves are to be inspected versus the entire steam generator.
- 4) Section 5.5.9.2, Steam Generator Tube Sample Selection and Inspection, would be expanded to two sections, 5.5.9.2a and 5.5.9.2b, to include tube sleeve inspection criteria in addition to the existing tube inspection criteria. A new Table 5.5.9-3 would be added to provide explicit tube sleeve inspection selection criteria. A minimum tube sleeve inspection sample size of 20% would be specified.
- 5) Section 5.5.9.3, Inspection Frequencies, would be changed to include the inspection frequency requirements for tube sleeves, in addition to the current requirements for tubes. A new requirement would also be added to perform a preservice inspection of all tubes that have been repaired by sleeving.
- 6) Section 5.5.9.4, Acceptance Criteria
  - a. Section 5.5.9.4.a would be revised as follows, and rearranged to alphabetical order:
    - i. The definition of "Degraded Tube" would be expanded to also define degraded sleeve. The existing degraded tube criteria would apply to a degraded sleeve.
    - ii. The definition of "Defect" would be expanded to refer to the repair limit in addition to the plugging limit.



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- iii. The definition of "Plugging Limit" would be changed to include a repair limit, and also include the plugging or repair limit criteria for ABB-CE leak tight sleeves. The plugging or repair imperfection depth for the CE leak tight sleeves would be 35%.
  - iv. The definition of "Tube Inspection" would be changed to explicitly exclude sleeved areas (sleeve inspection would be defined separately, as described below).
  - v. The definition of "Preservice Inspection" would be changed to also include preservice inspection requirements for steam generator tubes that have been repaired by installing sleeves.
  - vi. A definition for "Tube or Tubing" would be added as clarification.
  - vii. A definition for "Tube Repair" would be added. This definition would reference the Combustion Engineering, Inc. (CE or ABB-CE) topical report CEN-630-P, "Repair of 3/4" O.D. Steam Generator Tubes Using Leak Tight Sleeves," Revision 02, June 1997.
  - viii. A definition for "Sleeve Inspection" would be added.
- b. Section 5.5.9.4.b, which defines an operable steam generator, would be changed to include repaired tubes in addition to plugged tubes.
- 7) Table 5.5.9-2, Steam Generator Tube Inspection, would be revised to allow repair of defective tubes as an alternative to plugging. The reference to section 50.72(b)(2) of 10 CFR Part 50 would be editorially rearranged to 10 CFR 50.72(b)(2).
  - 8) A new Table 5.5.9-3, Steam Generator Sleeve Inspection, would be added to specify inspection requirements for steam generator tubes that have been repaired by tube sleeving.
  - 9) Section 5.6.8, Steam Generator Tube Inspection Report, would be changed to require reporting repaired tubes in addition to reporting plugged tubes.

In addition, the page numbers for TS Section 5, which need to be revised to accommodate the additional pages for this proposed amendment, would be editorially revised to reflect the subsection level so that any future Section 5 additions/deletions would affect fewer page numbers.



## **B. PURPOSE OF THE TECHNICAL SPECIFICATION**

Each PVNGS Unit utilizes two steam generators to transfer heat from the high pressure (nominally 2250 psig) primary reactor coolant system (RCS) to the lower pressure (nominally 980 psig) secondary coolant system. This heat transfer takes place across the steam generator U-tubes, which also provide the pressure boundary between the RCS coolant flowing inside the tubes and the secondary coolant outside the tubes.

As described in the TS Bases, the limit in TS 3.4.14.d of 1 gallon per minute (gpm) total primary to secondary leakage through all steam generators produces acceptable offsite doses in the steam line break accident analysis. Violation of this LCO could exceed the offsite dose limits for this accident analysis. The limit in TS 3.4.14.e of 720 gallons per day (gpd) for RCS leakage through the tubes of any single steam generator allocates the total 1 gpm allowed primary to secondary leakage equally between the two generators. The proposed TS limit of 150 gpd per steam generator is much more restrictive than both of these current TS 3.4.14.d and e leakage limits.

Section 5.5.9 of the TSs contains the requirements for inservice inspection of steam generator tubes to ensure that the structural integrity of this portion of the RCS will be maintained. The inservice inspection program for the steam generators is essential in order to maintain surveillance of the conditions of the tubes in the event that there is evidence of mechanical damage or progressive degradation due to design, manufacturing errors, or inservice conditions that lead to corrosion or imperfections. Inservice inspection of steam generator tubing also provides a means of characterizing the nature and cause of tube degradation so that corrective measures can be taken. This proposed amendment would expand the steam generator surveillance program to include repair by sleeving and the inservice inspection requirements for tube sleeves.

Section 5.6.8 of the TS prescribes the steam generator tube inspection reports that must be submitted to the NRC to keep them apprised of the condition of the steam generators. This proposed amendment would expand the reporting requirement to include information regarding steam generator tube sleeving inspections and repairs.

## **C. NEED FOR THE TECHNICAL SPECIFICATION AMENDMENT**

This proposed amendment would revise the Palo Verde Nuclear Generating Station (PVNGS) Technical Specification (TS) Limiting Condition of Operation (LCO) 3.4.14 and TS Sections 5.5.9 and 5.6.8 to allow the use of steam generator (SG) tube sleeves as an alternative to plugging defective SG tubes. Operating experience throughout the industry has shown that, when allowable, repairing degraded SG tubes with sleeves instead of plugging the tubes can permit tubes to remain in service and reduce the impact on reactor coolant flow rates and SG heat transfer rates. Several specific defect locations observed in SG tubes at PVNGS, such as at the expansion transition above the tube sheet, the flow distribution plate, and the eggcrate supports, are considered candidate



locations for repair via sleeving. However, the current TSs require a tube that exhibits a through-wall defect of 40 percent or greater to be removed from service by means of a tube plug. The tube plug isolates flow through the tube, thereby removing the tube from service.

As tubes are plugged, the effective heat transfer area of the steam generator is reduced and the differential pressure across the steam generator is increased. This results in reduced coolant flow rate and SG heat transfer rate available for core cooling. The purpose of a tube sleeve is to repair specified tube defects instead of plugging the tube. The tube sleeve would maintain the original function and integrity of the tube. The sleeving methodology consists of inserting and welding a sleeve to the inside of the defective original tube, bridging the defect and forming a new pressure boundary. By spanning the degraded section of tube, the sleeve and sleeve joint maintain the structural integrity of the steam generator tube and prevent leakage should a through-wall breach develop in the tube wall at the original defect location. A tube that is sleeved will have significantly less effect on RCS flow and heat transfer through the SG than if the tube were plugged.

The proposed change to TS LCO 3.4.14.d and e will replace the leakage limits of 1 gallon per minute (gpm) primary to secondary leakage through all SGs and 720 gallons per day (gpd) through any one SG with a new limit of 150 gpd through any one SG. This new limit will provide additional assurance against tube rupture at normal and faulted conditions and provides additional assurance that cracks will not propagate to burst prior to detection by leakage monitoring methods and commencement of plant shutdown.

#### **D. SAFETY ANALYSIS OF THE PROPOSED TECHNICAL SPECIFICATION AMENDMENT**

The proposed amendment would revise the Palo Verde Nuclear Generating Station (PVNGS) Technical Specification (TS) Limiting Condition of Operation (LCO) 3.4.14 and TS Sections 5.5.9 and 5.6.8 to allow the use of steam generator (SG) tube sleeves as an alternative to plugging defective SG tubes. The sleeves are discussed in Combustion Engineering, Inc. (CE or ABB-CE) proprietary report CEN-630-P, Revision 02, dated June, 1997, provided with this submittal as Enclosure 4.

The proposed change to TS LCO 3.4.14.d and e will replace the leakage limits of 1 gallon per minute (gpm) primary to secondary leakage through all SGs and 720 gallons per day (gpd) through any one SG with a new limit of 150 gpd through any one SG. This is a more restrictive change. A TS limit of 150 gpd primary to secondary leakage through any one steam generator is significantly less than the initial conditions assumed in the safety analyses. The 150 gpd limit is based on operating experience as an indication of one or more propagating tube leak mechanisms. The Steam Generator Tube Surveillance Program described in TS Section 5.5.9 ensures that the structural integrity





of the SG tubes is maintained. The leakage rate limit of 150 gpd for any one SG provides additional assurance against tube rupture at normal and faulted conditions and provides additional assurance that cracks will not propagate to burst prior to detection by leakage monitoring methods and commencement of plant shutdown.

The proposed changes to TS 5.5.9 will add inservice inspection requirements for SG tube sleeves. These requirements will ensure that installed SG tube sleeves will be inspected prior to initial operation and routinely thereafter, to assure the capability of each sleeve to perform its design function during each operating cycle. The tube sleeves will be the Combustion Engineering, Inc. (CE or ABB-CE) Leak Tight sleeves, as described in CE report CEN-630-P, "Repair of 3/4" O.D. Steam Generator Tubes Using Leak Tight Sleeves," Revision 02, dated June 1997. (This proprietary report is provided as Enclosure 4 with this submittal.) The tube sleeve dimensions, materials and joints are designed to the applicable ASME Boiler and Pressure Vessel code requirements. An extensive test program was performed that demonstrated that the sleeves will fulfill their intended function as leak tight structural members. Evaluation of sleeved tubes indicates no detrimental effects on the sleeve-tube assembly resulting from reactor coolant system flow, coolant chemistries, or thermal and pressure conditions. Structural analyses of the sleeve-tube assembly have established its integrity under normal and accident conditions. Mechanical testing using ASME code stress allowables was performed to support the analyses. Also, corrosion tests were performed and revealed no evidence of sleeve or tube corrosion considered detrimental under anticipated service conditions.

The proposed amendment would establish a sleeve plugging or repair limit of 35% of nominal wall thickness, which includes a 10% allowance for eddy current testing uncertainties and a 10% allowance for defect growth rate during a fuel cycle. This limit will ensure that the sleeves remaining in service will perform their design function.

A sleeved tube will exhibit greater hydraulic resistance and reduced heat transfer capability than an un-sleeved tube. However, these effects are much less than would be imposed by taking the tube out of service by plugging. Section 10.0 of CE report CEN-630-P describes the analyses to determine the hydraulic and heat transfer effects. Calculations using plant-specific information will identify sleeve-to-plug equivalency ratios.

The change to the SG reporting requirements in TS section 5.6.8 will ensure that the number of sleeved SG tubes will be reported to the NRC along with the number of plugged tubes. This is an administrative change that has no effect on the operation or maintenance of the plant.

#### **E. NO SIGNIFICANT HAZARDS CONSIDERATION**

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility does not involve a significant hazards consideration if



operation of the facility in accordance with a 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 the margin of safety.

A discussion of these standards as they relate to this amendment request follows:

Standard 1 – Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

The proposed change to TS LCO 3.4.14.d and e will replace the leakage limits of 1 gallon per minute (gpm) primary to secondary leakage through all SGs and 720 gallon per day (gpd) through any one SG with a new limit of 150 gpd through any one SG. This is a more restrictive change. A TS limit of 150 gpd primary to secondary LEAKAGE through any one steam generator is significantly less than the initial conditions assumed in the safety analyses. The 150 gpd limit is based on operating experience as an indication of one or more propagating tube leak mechanisms. The Steam Generator Tube Surveillance Program described in TS Section 5.5.9 ensures that the structural integrity of the SG tubes is maintained. The leakage rate limit of 150 gpd for any one SG provides additional assurance against tube rupture at normal and faulted conditions and provides additional assurance that cracks will not propagate to burst prior to detection by leakage monitoring methods and commencement of plant shutdown. Therefore, this change to TS LCO 3.4.14.e will not involve a significant increase in the probability or consequences of an accident previously evaluated.

The proposed changes to TS 5.5.9 will add inservice inspection requirements for SG tube sleeves. These requirements will ensure that all installed SG tube sleeves will be inspected prior to initial operation and routinely thereafter, to assure the capability of each sleeve to perform its design function during each operating cycle. The tube sleeves will be the Combustion Engineering, Inc. (CE or ABB-CE) Leak Tight sleeves, as described in CE report CEN-630-P, "Repair of 3/4" O.D. Steam Generator Tubes Using Leak Tight Sleeves," Revision 02, dated June 1997. (This proprietary report is provided as Enclosure 4 with this submittal.) The tube sleeve dimensions, materials and joints are designed to the applicable ASME Boiler and Pressure Vessel code requirements. An extensive test program was performed that demonstrated that the sleeves will fulfill their intended function as leak tight structural members. Evaluation of sleeved tubes indicates no detrimental effects on the sleeve-tube assembly resulting from reactor coolant system flow, coolant chemistries, or thermal and pressure conditions. Structural analyses of the sleeve-tube assembly have established its integrity under normal and accident conditions. Mechanical testing using ASME code stress allowables was performed to support the analyses. Also, corrosion tests were performed and revealed no evidence of sleeve or tube corrosion considered detrimental under anticipated service conditions. A sleeved tube will exhibit greater hydraulic resistance and reduced heat transfer capability than an



un-sleeved tube. However, these effects are much less than would be imposed by taking the tube out of service by plugging. Section 10.0 of CE report CEN-630-P describes the analyses to determine the hydraulic and heat transfer effects. Calculations using plant-specific information will identify sleeve-to-plug equivalency ratios. The proposed changes to the SG inservice inspection program will assure that sleeved SG tubes will meet the structural requirements of tubes that are not defective. The proposed sleeve plugging limit of 35% of nominal wall will ensure that the sleeves remaining in service will perform their design function. Also, installation of sleeves will not significantly effect the primary system flow rate or the heat transfer capability of the SGs. Therefore, this change to TS section 5.5.9 will not involve a significant increase in the probability or consequences of an accident previously evaluated.

The change to the SG reporting requirements in TS section 5.6.8 will ensure that the number of sleeved SG tubes will be reported to the NRC along with the number of plugged tubes. This is an administrative change that has no effect on the operation or maintenance of the plant and will not involve a significant increase in the probability or consequences of an accident previously evaluated.

Standard 2 – Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

The proposed change to TS LCO 3.4.14.d and e will replace the leakage limits of 1 gpm primary to secondary leakage through all SGs and 720 gpd through any one SG with a new limit of 150 gpd through any one SG. This is a more restrictive change that will provide added assurance against steam generator tube ruptures. Since the current allowable primary to secondary leakage is being reduced, this change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

The proposed changes to TS section 5.5.9 for the SG inservice inspection program will assure that sleeved SG tubes will meet the structural requirements of tubes that are not defective. Also, installation of sleeves will not significantly effect the primary system flow rate or the heat transfer capability of the SGs. Therefore, this change to TS section 5.5.9 will not create the possibility of a new or different kind of accident from any accident previously evaluated.

The change to the SG reporting requirements in TS section 5.6.8 will ensure that the number of sleeved SG tubes will be reported to the NRC along with the number of plugged tubes. This is an administrative change that has no effect on the operation or maintenance of the plant and will not create the possibility of a new or different kind of accident from any accident previously evaluated.



Standard 3 -- Does the proposed change involve a significant reduction in a margin of safety?

The proposed change to TS LCO 3.4.14.d and e will replace the leakage limits of 1 gpm primary to secondary leakage through all SGs and 720 gpd through any one SG with a new limit of 150 gpd through any one SG. This is a more restrictive change that will provide added assurance against steam generator tube ruptures. Since the current allowable primary to secondary leakage is being reduced, this change will not involve a significant reduction in a margin of safety.

The proposed changes to TS section 5.5.9 for the SG inservice inspection program will assure that sleeved SG tubes will meet the structural requirements of tubes that are not defective. Also, installation of sleeves will not significantly effect the primary system flow rate or the heat transfer capability of the SGs. Therefore, this change to TS section 5.5.9 will not involve a significant reduction in a margin of safety.

The change to the SG reporting requirements in TS section 5.6.8 will ensure that the number of sleeved SG tubes will be reported to the NRC along with the number of plugged tubes. This is an administrative change that has no effect on the operation or maintenance of the plant and will not involve a significant reduction in a margin of safety.

**F. ENVIRONMENTAL IMPACT DETERMINATION**

The proposed amendment i) involves no significant hazards consideration, ii) does not result in a significant change in the types or significant increase in the amounts of any effluents that may be released offsite, and iii) does not result in a significant increase in individual or cumulative occupational radiation exposure. Therefore, the proposed amendment is categorically excluded from an environmental assessment in accordance with 10 CFR51.22(c)(9).



