

issue of no significant hazards consideration, which is presented below:

1. The proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

The physical difference between the 4-finger full strength control element assemblies (FSCEAs) and the PSCEAs involves using Inconel rather than B₄C (boron carbide) over 100% of the active control section of each CEA finger. In addition, the PSCEAs use Inconel tubing to encase solid Inconel slugs, which cover the entire control section of the control element assembly (CEA). The current PLCEAs (also have only 4-fingers) use solid Inconel rods for only the lower half of each finger and B₄C pellets in the top 15 inches (10%) of the control section of the CEA. Although failure of the solid Inconel region due to neutron fluence would be less likely than a typical clad design, the differences in swelling between the Inconel slugs encased by Inconel clad for the PSCEAs will be minor and result in a minimal impact on clad integrity. With the exception of the neutron absorber, the cladding design used for the PSCEAs is similar to the cladding of the full strength CEAs (FSCEAs). The geometry, cladding materials, and the spider assembly that supports the CEA fingers are essentially the same for the 4-finger FSCEAs and the PSCEAs. The principal difference results from the Inconel slugs contained in the PSCEAs being heavier than the B₄C pellets used in the FSCEAs. Even though the weight of a 4-finger PSCEA is greater than the weight of a 4-finger PLCEA or a 4-finger FSCEA, this weight difference is bounded by the 12-finger FSCEAs which are operated by the same CEA drive mechanism system.

The PSCEAs use Inconel as a neutron absorber in the entire control section of each CEA finger and will be operationally used the same way as the PLCEAs. In particular, the insertion restraints that are defined by the power dependent insertion limits (PDILs) for the PLCEAs will remain the same for the PSCEAs. This existing requirement will not result in any significant operational impact on the PSCEAs since the solid Inconel cylinder in the bottom 50% (operating range of the PDILs) of the PLCEAs has essentially the same reactivity worth as that of the PSCEAs.

In addition, renaming the full length CEAs and part length CEAs to full strength CEAs and part strength CEAs, respectively, and providing definition for the PSCEAs will not impact the safe operation of the plant. The terminology will be appropriately changed in any related document, equipment tag, or indication on a control panel.

The PLCEAs are not credited in the accident analyses for accident mitigation. The PSCEA design eliminates an accident scenario involving the insertion of a PLCEA past the PDIL, which results in an axial shift in power due to the upper region of the PLCEAs which has no neutron absorber. This condition will not occur with the PSCEAs because they are filled with neutron absorber over 100% of the control section of each finger.

Concerning TS Limiting Condition for Operation (LCO) 3.1.5, Condition B, proposed change; there are three position indicator channels available for each CEA. Current TS Bases state that, "At least two of the following three CEA position indicator channels shall be OPERABLE for each CEA." Additionally the TS Bases states, "If only one CEA position indicator channel is OPERABLE, continued operation in MODES 1 and 2 may continue, provided, within 6 hours, at least two position indicator channels are returned to OPERABLE status; or within 6 hours and once per 12 hours, verify that the CEA group with the inoperable position indicators are either fully withdrawn or fully inserted while maintaining the insertion limits of LCO 3.1.6, LCO 3.1.7 and LCO 3.1.8." The TS Bases make no restriction or condition limiting only one CEA within a subgroup to having only one CEA position indication channel. Current analyses already assume that more than one CEA in a subgroup could have only one position indicator OPERABLE. Modifying the wording for Condition B, of LCO 3.1.5, will not affect the likelihood or consequences of a CEA drop, slip, ejection, or misalignment. This change will still require at least one position indication channel be available for each CEA.

Consequently, the proposed change does not involve a significant increase in the probability or consequences of an accident.

2. The proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

The proposed changes do not introduce any new mode of plant operation and the PSCEAs, like the PLCEAs, are not relied upon for accident mitigation. The PSCEAs will be operated in exactly the same manner in which the PLCEAs are operated. The existing operating restrictions for the PLCEAs will apply to the PSCEAs. In particular, the power dependent insertion limit (PDIL) restrictions identified in the Core Operating Limits Report (COLR) will remain the same for the PSCEAs. The PSCEA design uses Inconel over the entire control section of each CEA finger, which will prevent the potential undesired flux redistribution currently associated with the misoperation of PLCEAs. Therefore, the analysis associated with the undesired flux redistribution misoperation for the PLCEAs will be eliminated from PVNGS [Palo Verde Nuclear Generating Station] safety analyses. PSCEA misoperation events are bounded by the existing PLCEA and FSCEA misoperation safety analyses.

In addition, renaming (within the Technical Specifications) the "full length CEAs" and "part length CEAs" to "full strength CEAs" and "part length or part strength CEAs," respectively, and providing a definition for the PSCEAs will not impact the safe operation of the plant. The terminology will be appropriately changed in any related document, equipment tag, or indication on a control panel.

Concerning TS LCO 3.1.5, Condition B proposed change, CEA position indication channels have no control function and provide input to the CEA Calculators

(CEACs) and Core Protection Calculators (CPCs) for generation of a penalty factor. This change will still require at least one position indication channel be available for each CEA. Allowing Condition 'B' of LCO 3.1.5 to apply to more than one CEA per group does not create the possibility of a different type of malfunction than previously evaluated in the UFSAR [Updated Final Safety Analysis Report].

Therefore, the proposed amendment will not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. The proposed change does not involve a significant reduction in a margin of safety.

The design of the PSCEAs is very similar to the FSCEAs except for the neutron absorber within each finger of a PSCEA. The PSCEAs do not have as strong of a neutron absorber (Inconel) as that which is contained in the FSCEAs (B₄C). There is a weight difference which results from the Inconel slugs contained in the PSCEAs being heavier than the B₄C pellets used in the FSCEAs. Even though the weight of the 4-finger PSCEAs is greater than the weight of the 4-finger PLCEAs, the CEA drive mechanism and support components shall operate within their design bases. Therefore, the PSCEAs can be considered adequate for safety-related applications. Consequently, the differences in design between the current PLCEAs and the PSCEAs do not adversely impact safe operation.

The PLCEAs are not relied upon for shutdown margin or accident mitigation and no new requirements will apply to the PSCEAs. However, the design of the PSCEAs is effectively eliminating the concern associated with the insertion of the PLCEAs past the PDILs which could result in an undesirable shift in neutron flux to the top of the core due to the region within the PLCEAs that do not have neutron absorber. The PSCEAs have neutron absorber throughout their entire control section, which prevents a neutron flux shift to the top of the core if inserted past the PDIL, when compared to that of the PLCEAs.

In addition, renaming the "full length CEAs" and "part length CEAs" to "full strength CEAs" and "part length or part strength CEAs," respectively, and providing definition for the PSCEAs will not impact the safe operation of the plant. The terminology will be appropriately changed in any related document, equipment tag, or indication on a control panel.

Concerning TS LCO 3.1.5, Condition B, proposed change, the current licensing bases already consider having more than one CEA in a CEA group with only one available position indication. The TS Bases for LCO 3.1.5, Condition B state that, "At least two of the following three CEA position indicator channels shall be OPERABLE for each CEA." Additionally the Bases states, "If only one CEA position indicator channel is OPERABLE, continued operation in MODES 1 and 2 may continue, provided, within 6 hours, at least two position indicator channels are returned to OPERABLE status; or within 6 hours and once per 12 hours, verify that the CEA group with the inoperable position indicators are either fully