

**From:** [Garcia Santos, Norma](#)  
**To:** [Kuprenas, Michael A CIV USN NNPP \(USA\)](#)  
**Subject:** 9788  
**Date:** Thursday, March 19, 2020 10:06:00 AM

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Good morning,

I will provide the comments to the team. Just to clarify that the documents had not gone through technical editing, for the sake of time, but thanks for providing the edits.

Please let me know if you will be working the rest of the day and tomorrow. I would like to set up a meeting with you and the reviewers, if necessary.

Thanks,

*Norma Garcia Santos*

Project Manager  
Division of Fuel Management  
Office of Nuclear Material  
Safety and Safeguards  
U.S. Nuclear Regulatory Commission

Telephone No.: 301-415-6999

Email: [Norma.Garcia-Santos@nrc.gov](mailto:Norma.Garcia-Santos@nrc.gov)

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**From:** Kuprenas, Michael A CIV USN NNPP (USA) <michael.kuprenas@navy.mil>  
**Sent:** Thursday, March 19, 2020 9:01 AM  
**To:** Garcia Santos, Norma <Norma.GarciaSantos@nrc.gov>  
**Subject:** [External\_Sender] RE: RE: 9788

Norma,

These are the comments that Naval Reactors has on the draft Certificate of Compliance and Safety Evaluation Report:

For the Certificate of Compliance:

1. The last sentence of paragraph 5.(a)(2) is missing a period
2. Please add as an additional condition between the current conditions 13 and 14 stating: "For SSN 688 Class packages, there are two submarines (SSN701 and SSN 711) that are not authorized for shipment under this Certificate of Compliance." These submarines have been modified and need to be evaluated prior to prepared for shipment. This language is currently in the DOE CoC.
3. In paragraph 5.(a)(1) "SN 688" should be "SSN 688"
4. In the Supplements section the letter number for the XXXXXX should be C20-00660

For the Safety Evaluation Report:

1. The page number for page 2 is inconsistent with the rest of the table of contents, i.e., ii vice 2.
2. Both the table of contents and the text of the SER include two sections numbered 1.2.
3. The section numbering in the table of contents changes from page 2 to 3, i.e., page 2 ends with 2.8 and page 3 begins with 2.5.1.
4. The table of contents is missing 4.0 CONTAINMENT EVALUATION
5. Edit paragraph 1.1.a to say "...portion **of the** pressure..."
6. Section 1.2 states that the resin may be solidified in place. This is allowed for SSN 688 packages, but not for S5G, and should be deleted.
7. The water volume described in the section 1.2 is the water volume in the reactor vessel vice in the package. Suggest revising the sentence for clarity to "The reactor vessel is defueled, no fissile material (except trace) is present, and fluids were drained leaving only residual water in various locations of the plant (maximum of 1200 gallons total)."
8. In the section of the top of page 5 describing fracture toughness, there appear to be some words missing. Suggest revising to "...fine grain steels, ~~enough~~ **which have sufficient fracture toughness**, to prevent..."
9. In section 3.5 Codes and Standards, edit the first sentence to state "...personnel performed..."
10. Both paragraphs of section 2.4.2 state that catalyst was added to ensure that hydrogen levels are below 5%. While catalyst will be added, it is not necessary to maintain hydrogen concentrations below 5%. Hydrogen content is below 5% based on sampling of previous packages and a comparative analysis to those sampling results.
11. Section 2.4.3 on puncture states that bounding acceleration and deformations were determined. These were not calculated for the puncture (and are not required to be).
12. In section 2.6, instead of "containment" this section uses "confinement". Suggest changing it to containment for consistency within the SER. Also, this section states that the package boundary welds are full penetration welds. This is not correct; while some welds are full penetration, the SARP identifies that many are partial penetration welds, e.g., section 2.7.1.2.4.1.2.
13. The subsections under section 2.8 are not properly numbered, e.g., 2.5.1, 2.4.2, etc. This is also incorrect in the Table of Contents beginning on page 3.
14. In several places in the SER, e.g., sections 2.4.5 and 2.7.6, the SER refers to analysis in the SARP of submergence to a "specific depth". The SARP used 300 feet as the submergence depth and there is no issue with stating this value in the SER.
15. Section 2.5 Evaluation Findings should be numbered as section 2.9.
16. Section 3.1.2, could be clarified to state that a decay heat of 9 W was used vice stating a decay heat of less than 10 W.
17. Edit the last sentence of the first paragraph of section 3.1.3 to read " ...scenario **are is** discussed..."
18. There is an extra space after the parenthesis in section 3.1.4.
19. In section 3.3, the statement that considering all surfaces of the package would increase temperature and pressure is not believed to be correct. While it is true that the SARP did not include insolation on the all sides of the package, it also did not include radiation from all sides. Since insolation would be small on the bottom of the package, the extra radiation from the bottom surface would result in decreased temperatures and pressure. Similarly, since the

sun would only shine on one end of the package, including both insolation and radiation from the flat ends of the package would likely decrease temperatures. NR does agree that small differences either way would not affect the conclusion of the SARP.

20. Edit the second line of the second paragraph of section 4.2 to read "...test ports are sealed and..."
21. Section 5.2.2 is unclear in the new contents of this package. The S5G reactor compartment disposal package is unique. This might be clearer if stated as "There is no significant neutron source from the S5G reactor compartment disposal package."
22. For clarity regarding shielding and dose rates edit the last line of section 5.3.1 to read "... provide additional shielding. This assumption will increase the calculated dose rates."
23. Edit the last line of section 5.4.1 on page 14 to read "...acceptable **for** ~~because~~ the following..."

Mike Kuprenas  
(202) 781-6060

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**From:** Garcia Santos, Norma <[Norma.GarciaSantos@nrc.gov](mailto:Norma.GarciaSantos@nrc.gov)>  
**Sent:** Wednesday, March 18, 2020 3:12 PM  
**To:** Kuprenas, Michael A CIV USN NNPP (USA) <[michael.kuprenas@navy.mil](mailto:michael.kuprenas@navy.mil)>  
**Subject:** [Non-DoD Source] RE: RE: 9788

Good evening,

Thanks for letting me know. I can pass these along to the team and set up a teleconference to discuss these items.

Have a nice rest of the day.

*Norma Garcia Santos*

Project Manager  
Division of Fuel Management  
Office of Nuclear Material  
Safety and Safeguards  
U.S. Nuclear Regulatory Commission

Telephone No.: 301-415-6999  
Email: [Norma.Garcia-Santos@nrc.gov](mailto:Norma.Garcia-Santos@nrc.gov)