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NUCLEAR ENERGY

ENGINEERING

DIVISION

CURC PUBLIC COUNTERT ROOM

January 22, 1979

71-6697

Mr. Charles E. MacDonald, Chief Transportation Branch Division of Fuel Cycle and Material Safety U.S. Nuclear Regulatory Commission Washington, D. C., 20555

Reference: Certificate of Compliance 6697

Dear Mr. MacDonald:

The General Electric Company, Vallecitos Nuclear Center (VNC), has for several years made shipments of radioactive materials in the G.E. Model 8500 shipping container. Over this period a number of minor changes have been made in the blueprints for this container. These changes are editorial (e.g., changes in print titles, changes in paint color) or reflect minor changes in dimensions which reflect the "as built" characteristics of the container system. None of the changes have any safety significance and have no effect on our previous safety evaluations as submitted to the NRC.

Accordingly, VNC is submitting copies of the updated versions of the prints listed in Certificate of Compliance 6697. In addition, as Attachment A to this letter there is a listing of each revision to these prints with explanations, where appropriate, demonstrating their lack of safety significance.

In addition, three additional prints should be added to the Certificate. Section 5 (a)(3) of the Certificate recognizes the optional modification of the Model 8500 to include a slot in the bottom of the cask cavity. The purpose of the slot, as noted in our submittals, is to provide a locking mechanism when combined with a modified 2R container which facilitates the opening of the 2R container. Print 135C5982 shows this modified 2R container. It is identical to the previously evaluated 2R container (Print 161F443 Rev. 5) except for the addition of an ear at one end of the container which fits into the cask slot. The addition of the ear has no safety significance.

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Mr. Charles E. MacDonald

Print 106D3830 describes a second type of 2R container. Again, it is identical to the 2R described in Print 161F443 Rev. 5 except for size. It is designed to hold a 60 ml bottle rather than the usual 240 ml bottle. Print 153C4613 describes a tungsten liner which is used with the smaller 2R container to provide additional shielding and spacing to the center of the cask cavity.

In view of the above, VNC requests that the following editorial changes be made to Certificate of Compliance 6697:

- The second sentence of the third paragraph of Section 5(a)(2) should be modified to read: "...to a rectangular pallet made of aluminum." The fourth sentence should read:"....2R type, steel insert, shown on G.E. Drawing No. 161F443 Rev. 5, or 135C5982, or 106D3830 (the latter should be used with the liner, 153C4613)."
- The first sentence of Section 5(a)(3) should be modified to read: "...Drawings Nos.: 277E696, Rev. 6; 277E712, Rev. 6; 174F482, Rev. 5; and 161F443, Rev. 3 (or 106D3830 and 153C4613)." The second sentence should be revised to read: "...Drawings Nos.: 289E795, Rev. 3; 195F169, Rev. 2; 289E796, Rev. 5; and 135C5982."

As these changes are minor in nature, VNC is enclosing a check in the amount of \$2800 pursuant to 10CFR170.31(11)(B).

Sincerely,

G. E. Cunningham

Sr. Licensing Engineer

VCC

Encl.

ATTACHMENT A

SUMMARY OF DRAWING CHANGES

I. Drawing No. 277E696 Rev. 2

NRC Certificate of Compliance No. 6697 Revision 2, dated April 13, 1977 lists this print erroneously as 277E695 Rev. 2. The certificate should be revised to list the correct number.

- Rev. 3: This revision changed the title of the print to reflect the nomenclature "Model 8500" adopted for the container (it was previously the "Model 5500 U"). This revision has no safety significance.
- Rev. 4: This revision changed the reference outer diameter for the cask from 6.95 inches to 7.00 inches. This change is nominal for fabrication purposes and has no safety significance.
- Rev. 5: This revision added the word "Assembly" to the print title. It is also provided for a plastic pallet (the original pallet was wooden) which has since been discontinued.
- Rev. 6: This change added the word "Model" to the print title and changed the reference for Part #6 to print #153C4502. This, in effect, changed the pallet from plastic to aluminum. This change is recognized in Section 5(a) (2) of the Certificate of Compliance.

II. Drawing No. 277E712 Rev. 1

- Rev. 2: This revision changed the title of the print to reflect the "Model 8500" nomenclature (previously "Model 5500-U").
- Rev. 3: This revision summarized a number of minor changes in the wooden overpack. These were: (1) the overpack cap was increased in diameter from 8 inches to 8-1/2 inches and the thickness was increased from 1-1/2 inches to 1-3/4 inches; (2) the cask lid holes which receive the closure hex nuts were enlarged from 1-1/2 inches in diameter to 2 inches and from 1-1/2 inches in depth to 1-3/4 inches (the bolt holes remained the same size); and (3) the cutout in the overpack lid was increased in depth from 1/2 inch to 3/4 inch to accommodate the lifting bail on the cask lid. The result of these changes was to increase the height of the assembled package from 20-1/2 inches to 20-3/4 inches. No thickness of plywood were changed sufficiently to cause any significant change in the performance of the overpack during the 1475 F fire.
- Rev. 4: This revision added primer and finish paint specifications to the print.
- Rev. 5: This was a change in pallet reference identical to Rev. 5 to 277E696.
- Rev. 6: This revision added the "ords "Model" and "Protective" to the print title. The following changes were also made: (1) the tolerance for the height of the overpack cavity was changed from 11+ 1/16 inches to 11+ 1/8 inches; (2) Part #8 (the base of the overpack cap) was added to the parts

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II. Drawing No. 277E712 Rev. 1 (continued)

listing; and (3) Part #9 (an optional part required to maintain the 11 + 1/8 inches cavity tolerance) was added to the parts list with an explanatory note. The change in tolerance has no practical effect on the overpack. The added listings are only clarifications.

This revision also references the aluminum pallets as was the case with Rev. 6 to 277E696.

III. Drawing No.174F482, Rev. 1

Rev. 2: This revision changes the title to reflect the Model 8500 nomenclature.

Rev. 3: This revision includes a number of minor dimensional changes to the cask: (1) the lid flange diameter was changed from 6.95 inches to 6.72 inches; (2) the diameter of the step in the cask body where the lid is seated was changed from 4.97 inches to 4.96 inches; (3) the diameter of the uranium in the lid was changed from 4.62 inches to 4.64 inches; (4) the height of stainless steel sleeve lining the cavity (including the part covered by the lid) was changed from 7.75 to 7.90 inches; (5) the locating pin bolt circle diameter was changed from 5.83 inches to 5.81 inches; (6) Parts 12 and 14 were combined to permit one-piece construction of the cask lid; (7) the cask lid diameter of 4.78 inches was called out; (8) the 7.00 inch cask diameter was added; and (9) the length of the outer stainless steel sleeve was changed from 9.62 inches to 9.65 inches. None of these minor dimensional changes could have any safety significance.

Rev. 4: This was a general revision, totally administrative in nature, to show the cask and lid separately. Details on the gasket (Part 6) were added as was an isometric drawing of the cask.

Rev. 5: The print name was changed to "Model 8500 Shipping Cask".

IV. Drawing No. 289E795, (No revision listed)

Rev. 1: This revision showed the change from the wooden pallet to the now obsolete plastic pallet.

Rev. 2: This revision changes the reference dimension assembly height from 20-1/2 inches to 21 inches and changed the cask height from 10.52 inches to 10.57 inches.

Rev. 3: This revision changed the title of the print from "8400 Shipping Container 8500 Model "to" Model 8500 Shipping Container Assembly, Subseries 8400".

This revision also changed the pallet reference to the aluminum pallet. The same comments apply as to Rev. 6 of 277E696.

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V. Drawing No. 289E796, (No revision listed)

- Rev. 1: This revision increased the cavity height of the overpack (the cutout to accommodate the cask lid lifting bail) and showed the overall 1/4 inch increase in the overpack height and the length of the assembly rods. These are similar to the changes in the overpack shown in Rev. 3 of 277E712.
- Rev. 2: The words "Standard Lid" were added to the print title.
- Rev. 3: The seal hole in each assembly rod (Part #3) was increased from 1/16 inch to 1/8 inch. The color and brand of the exterior paint was also changed.
- Rev. 4: This was a revision of a note on the print concerning painting instructions (color, brand, and number of coats).
- Rev. 5: This revision incorporated the same dimensional and explanatory changes as listed in Rev. 6 of 277E712. In addition, the print title was changed to include the term "Subseries 8400" and all print references were changed to "Subseries 8400 Cask".

VI. Drawing No. 195F169, Rev. 1

Rev. 2: This revision changed the print title to "Model 8500 Shipping Cask, Subseries 8400".

VII. Drawing No. 161F443, Revision 2

- Rev. 3: This revision added a note to the details requiring a 60° thread lead and a note to specify smooth, high quality threads. In addition, a change was made in the cap to increase the clearance diameter to 2.475 inches. This change was required to avoid metal-to-metal contact between the cap and the "0" ring sealing surface.
- Rev. 4: This revision added the dimension $2.39 \pm .01$ inches to the inside diameter of the tube. Notes were also added to specify "Microseal 100-1 threads only" and to require the weld to be "liquid leak tight".
- Rev. 5: This revision changed the print title to "Model 8500 2R Containment System". In addition, the note on the weld was changed from requiring the weld to be liquid tight to requiring it to be helium leak tight ($<5x10^{-8}$ atm cm⁻³/sec.). A note was added to require external marking of the 2R to show that it contains radioactive material and to show a serial number.