

PDR 71-6698

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May 21, 1980
CRJ/80/57/ETS

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

Dear Mr. MacDonald:

Ref: 1. Docket No. 71-6698

2. William J. Dircks, USNRC, letter to Jack D. Rollins, NAC, with Order to Show Cause, April 6, 1979
3. John R. Donnell, NAC, letter to Charles E. MacDonald, USNRC, October 31, 1979
4. William J. Dircks, USNRC, letter to John R. Donnell, NAC, with Order Amending Certificate and Terminating, in Part, Order to Show Cause, December 12, 1979
5. Charles E. MacDonald, USNRC, letter to James R. Clark, NFS, with copies to John R. Donnell, NAC, December 31, 1979. FCTC. RHO 71-6698

Applicant.....
Check No. 6770.....
Amount, Fee Category 1119.....
Type of Fee... 1520.....
Date Check Rec'd. 5/11/80.....
Received By.....

The Nuclear Assurance Corporation hereby requests an amendment to Certificate of Compliance No. 6698, Revision 9, dated December 12, 1979, and Termination in Total of the Order to Show Cause, dated April 6, 1979. The requested amendment covers the following:

1. Changes in the Description noted in Section 5(a)(2) first paragraph to "215 inches in length and 72.3 inches in diameter" and in the second paragraph to "Six trunnions, two rotating trunnions located ahead of the lower impact limiter and four lifting trunnions attached to the upper flange and covered during transport by the upper impact limiter."
2. Change the drawing number noted in Section 5(a)(3) to Nuclear Assurance Drawing No. 301-211-F1, Rev. 0 (Sheets 1 through 5).
3. Change Section 5(b)(2) to "Maximum quantity of material per package. Not to exceed a decay heat generation of 11.5 kW and . . ."

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THIS DOCUMENT CONTAINS
POOR QUALITY PAGES

4. Change Section 6 to "The cask shall be shipped with coolant in the cask cavity except that coolant is optional for shipments limited to 5(b)(1)(iv) components. In addition, coolant is optional for shipments limited to fuel assemblies when the maximum decay heat generation per package is 2.5 kW. When the coolant is used, the operating procedures for loading the cask shall require that 24 gallons of coolant shall be drained off from the water-filled cavity."
5. Insert Section 7 as "The coolant, when present, is considered part of the package contents. The radioactive contamination limits specified in 10CFR Paragraph 71.35(a)(4) do not apply."
6. Renumber Sections 7, 8, 9, 10, 11, 12, and 13 to 8, 9, 10, 11, 12, 13, and 14, respectively.
7. Delete Section 14 of Rev. 9, Certificate No. 6698.

Structural and Thermal Analysis Reports are enclosed to support the requested amendment.

The Structural Report includes a complete General Information section and Structural Evaluation for the cask in the modified configuration as shown on Drawing No. 301-211-F1, Rev. 0 (Sheets 1 through 5). The Structural Evaluation includes an analysis which demonstrates that the cask inner shell will not buckle under normal and hypothetical accident conditions specified in 10CFR Part 71. The Thermal Report includes a complete thermal evaluation of the cask in the modified configuration. The General Information (Section 1.0), Structural Evaluation (Section 2.0) and the Thermal Evaluation (Section 3.0) have been submitted in accordance with the format of Regulatory Guide 7.9, Rev. 1. It is Nuclear Assurance's intent to consolidate all the previous submittals, including the present, as requested by your letter to Mr. Clark, dated December 3, 1979 (Ref. 5).

Nuclear Assurance Corporation Drawing No. 301-211-F1, Rev. 0 (Sheets 1 through 5), Shipping Cask - Spent Fuel, NAC-1 has been developed to show the safety features considered in the analysis of the cask modifications and also safety features of those portions of the cask which have not been changed. Detailed construction dimensions which were shown on Nuclear Fuel Services, Inc. Drawing No. E10080, Rev. 19 (Sheets 1 through 4) that are unnecessary to support the licensability or analysis of the cask have not been included on Drawing 301-211-F1, Rev. 0.

Due to the magnitude of the impact limiter change, the following summary lists the associated changes affecting other features of the cask.

1. The existing cask impact limiters (lid, top and bottom) and trunnions will be removed and replaced by a removable top and bottom impact limiter.

2. Four (4) lifting trunnions will be installed on the outside circumference of the cask lid flange.
3. Four (4) valve port protection devices will be installed on the lid flange and bottom flange. An integral part of the valve port includes a cover which cannot be installed until the valve handle is in the closed position.
4. Two (2) rotating trunnions will be installed on the bottom flange.
5. A false bottom will be added to provide maximum cask seating area.
6. Cowlings will be added adjacent to the top and bottom impact limiters to maintain thermal insulation during the fire accident case.
7. The cask tie-down system has been revised to accommodate the changes in location of the trunnions.

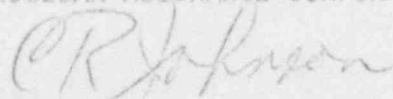
The requested amendment does not impact the criticality analysis or shielding analysis presented in the original Safety Analysis Report. The existing operating procedures utilized by each facility handling the NFS-4/NAC-1 cask will be revised to reflect the operational changes imposed by this amendment. In NAC's judgment, this amendment improves the safety of the NFS-4/NAC-1 shipping cask and meets or exceeds all requirements of applicable regulatory guides and federal regulations.

In accordance with the schedule of fees published on Page 7223 of the Federal Register, Volume 4, Number 35, dated February 21, 1978, a check for the amount of \$5,500 is submitted with this license amendment request.

Upon completion of your initial review, Nuclear Assurance Corporation requests that we be permitted to conduct a verbal presentation of this amendment at your convenience.

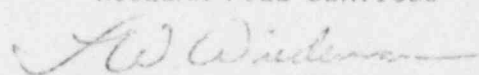
Sincerely,

NUCLEAR ASSURANCE CORPORATION



Charles R. Johnson
Vice President

NUCLEAR FUEL SERVICES



L. W. Wiedemann
Transportation Engineer

CRJ:cnr

Enclosures

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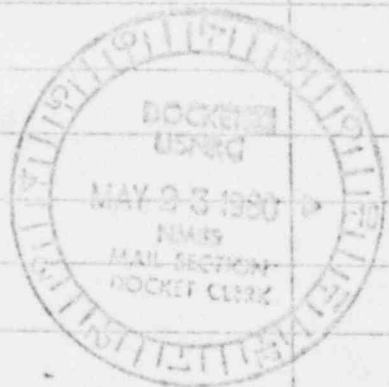
PDR 71-6698
PURCHASE ORDER

NUCLEAR ASSURANCE CORPORATION
24 EXECUTIVE PARK WEST
ATLANTA, GEORGIA 30329
(404) 325-4200

DATE 5/20/80	DATE REQUIRED 5/21/80
P.O. NUMBER Nº 1788	
TERMS Payment included	
SHIP VIA N/A	
F.O.B. N/A	

TO Nuclear Regulatory Commission Washington, D. C. 20555	SHIP TO Nuclear Assurance Corporation 24 Executive Park West Atlanta, Georgia 30329
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QTY.	UNIT	DESCRIPTION	UNIT PRICE	AMOUNT
1		NAC-1 Spent Fuel Shipping Cask License Amendment Request	\$5,500.00	\$5,500.00
		TOTAL		\$5,500.00



RN/Quarles
5/21/80
10:13 AM

Safety Related; Quality Assurance Required Yes No

INSTRUCTIONS

1. Please sign green acknowledgement copy and return it once.
2. Show purchase order number on all packages, invoices, shipping papers and correspondence.
3. Submit invoices to N.A.C., 24 Executive Park West, Atlanta, Georgia 30329

Project & Acct. No. 301-211

Direct inquiries to:
Thomas J. Tilinski

Approved: *Al Woodell*
Controller

CONDITIONS COVERING THIS ORDER AND AGREED TO BY SELLER UPON ACCEPTANCE:

1. **SHIPPING:** Seller shall immediately advise purchaser of shipping schedule on all items covered by this Order. No allowance will be made for packing, cartage, or crating unless specifically authorized in this Order. Enclose one copy of Packing List with each shipment. Packing list shall list separately each item in this shipment. Each item shall be tagged with proper item numbers as required by this Purchase Order. Items enclosed in protective coverings shall be identified outside the coverings. List of last item(s) shipped shall indicate final shipment for this Order. Purchaser amount will be accepted as final and conclusive on shipments. No substitutions shall be made on this Order without written authority.
2. **ORDER NUMBER:** The Order Number shown on this Purchase Order shall be shown on all invoices, communications, packing lists, containers, and bill of lading. Purchase Order and Item Number should be shown on all packing lists and invoices.
3. **INVOICES:** Legible copy of Bill of Lading and Packing Slip showing the weight of each shipment against this Order shall accompany invoices in triplicate and all charges covering prepaid freight for Purchaser's account are to be shown as a separate item on the invoice, supported by original and two legible copies of paid freight bill.
4. **PRICE:** If the Seller's regular market price in the Buyer's city shall be lower on the date of shipment than the price stated in this agreement, the Seller agrees to give the Buyer the benefit of such lower price.
5. **PAYMENT:** Delay in receiving invoices or any other data requirements in number of copies specified, or errors and omissions on either, will be considered just cause for withholding payment without loss of cash discount privilege. All discount periods will begin on the date that Purchaser receives materials.
6. **PATENTS:** Seller shall at its sole expense hold harmless Purchaser and/or its agent from and against, and shall defend, any suit or proceedings brought against Purchaser and/or its agent, based on a claim that the manufacture, use or sale of any equipment, or any part thereof, supplied under this Purchase Order constitutes infringement of any patent, copyright or proprietary information rights of others, and Seller shall pay all damages and costs awarded therein against the Purchaser and/or its agent. Seller shall at its own expense, either procure for Purchaser the right to use said equipment or part, or modify it so it becomes substantially equal but non-infringing; or remove said equipment and refund the purchase price and the transportation, installation and associated costs thereof.
7. **WARRANTIES:** Seller hereby warrants to Purchaser that each item of equipment sold by it hereunder: (a) shall be new; (b) shall conform in all respects to the drawings, specifications and terms of this Purchase Order; and (c) shall be free from defects in design, material and workmanship until the expiration of twelve (12) months after the date on which it was placed into service for the purpose for which it was purchased. If any such item of equipment, or any part thereof, fails to meet the foregoing warranties and Purchaser so notifies Seller within a reasonable time after such failure, Seller shall thereupon promptly correct such failure at its sole expense including all shipping costs associated with such correction.
8. **INDEMNITY:** Seller shall indemnify Purchaser against any and all injury, death, damage and loss to persons or property caused by items furnished or services performed by Seller pursuant to this Order, whether performed on the premises of Seller or Purchaser or elsewhere.
9. **FABRICATION AND MATERIAL COMMITMENTS:** Unless otherwise authorized in writing by Buyer, Seller shall not make commitments for materials nor fabricate in advance of time necessary to permit shipment on delivery dated.
10. **TERMINATION:** Buyer may terminate this Order for its convenience, in whole or in part, by written or telegraphic notice at any time. If this order is terminated for convenience, any claim of Seller shall be settled on the basis of reasonable costs it has incurred in the performance of this order.
11. **DELAYS:** If Seller shall fail or refuse to proceed with this Order, or if Seller shall fail to make delivery, or Buyer to accept delivery, according to the delivery schedule, the other party may cancel the then remaining balance of this Order unless the delay is an excusable delay as hereinafter defined. An excusable delay shall not constitute a default hereunder. The term "excusable delay" as used in this paragraph means any delay in making or accepting deliveries which result without fault or negligence on the part of the party involved and which is due to causes beyond its control including without being limited to, acts of God or of the public enemy, any preference, priority or allocation order issued by the Government or any other act of the Government, acts of the other party hereto, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, unusually severe weather, and delays of a supplier due to such causes. Each party shall promptly notify the other of any such delay and the causes thereof.
12. **EXPEDITING AND INSPECTION:** At the discretion of Purchaser this Order shall be subject to physical expediting, inspection and the right to witness all tests by Seller involved in performance of this Order. Seller is liable for all transportation charges accrued from receipt and return of rejected material.
13. **ASSIGNMENT:** Seller shall not assign this Order or any rights under this Order and any monies due or to become due hereunder without the prior written consent of Purchaser, and no purported assignment by Seller shall be binding on Purchaser without such consent.
14. **COMPLIANCE WITH LAWS:** Seller agrees to comply with the applicable provisions of any federal, state or local law or ordinance and all orders, rules and regulations issued thereunder, any provisions, representations or agreements, including the Equal Opportunity Clause (Executive Order 11246 as amended by Executive Order 11375) set forth in 41 CFR Chapter 80, required thereby to be included in the contract resulting from acceptance of this order are incorporated herein by reference.



**NUCLEAR
ASSURANCE
CORPORATION**

Safety Analysis of
Modified NAC-1
Spent Fuel Shipping Cask

