

Central Files

October 28, 1982

Mr. M. R. Eshelman
Director of Engineering
Newport News Industrial Corporation
230-41 Street
Newport News, Virginia 23607

Dear Mr. Eshelman:

Subject: Acceptance for Referencing of Licensing Topical Report
EI/NNI-77-7-P, Revision 1

The Nuclear Regulatory Commission (NRC) has completed its review of the Newport News Industrial Corporation licensing topical report EI/NNI-77-7(P) entitled "RWR-1 Radwaste Volume Reduction System - Revision 1," dated October 1980. This report describes the RWR-1 volume reduction system for application to radioactive wastes produced at nuclear electrical generating stations. This process utilizes a fluidized bed to calcine liquids and incinerate solids within a common chamber but with separate modes of operation. Typical waste stream data from boiling water reactors and pressurized water reactors are examined. Decontamination factors (DFs) across the system are presented. Anticipated releases are computed for normal and abnormal operations. The system components, instrumentation and controls, materials of construction, and operating characteristics are described. A safety analysis indicates that neither pressure excursion, fire nor the occurrence of an anticipated abnormal event, presents a significant hazard. Our Safety Evaluation is enclosed.

Based on our review of EI/NNI-77-7(P), Revision 1, and the responses to NRC's requests for additional information, we conclude that:

- (1) The fluid bed dryer system can safely process liquid radioactive wastes, filter sludges, resins and compactible trash. The adequacy of the capacity of fluid bed dryer system is dependent upon the design of the liquid radwaste system, the concentration and volumes of feed solutions to the RWR-1 system and will be evaluated for individual license applications.
- (2) The design, construction and quality group classification of the RWR-1 system is in accordance with Regulatory Guide 1.143.
- (3) The design, construction and quality group classification of the off-gas filter system is in accordance with Regulatory Guide 1.140.
- (4) The overall fluid bed dryer system DFs are 10 for particulates and 2.5×10^3 for radioiodine.

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- (5) A determination of the capability of the system to maintain releases within 10 CFR Part 20 and Appendix I to 10 CFR Part 50 must be evaluated in conjunction with the entire plant since the releases will depend on the specific plant design.
- (6) Operation of the RWR-1 system can occur with in-plant ALARA criteria of Regulatory Guide 8.8 being met.
- (7) Operation of the RWR-1 system can occur without jeopardizing the operation of the remainder plant or the safety of the general public. However, accident evaluations will be required on a plant-specific basis.
- (8) The operation of the RWR-1 system can occur within NRC fire protection criteria. However, detailed compliance will be addressed, based upon Technical Position CMEB 9.5.1 on a plant-specific basis.

As a result of our review, we find the Newport News Industrial Corporation licensing topical report EI/NNI-77-7(P), Revision 1 dated October 1980, as augmented by Newport News responses to NRC's requests for additional information, is acceptable for referencing in light water reactor licensing applications to the extent specified and under the limitations stipulated in the licensing topical report and our safety evaluation enclosed herewith. Applicants utilizing the RWR-1 system are to include in their license application that information identified in the topical report and the enclosed evaluation as plant specific or requiring plant specific review. When the subject topical report is referenced in a licensing application, the reference must include both the proprietary and non-proprietary versions.

We do not intend to repeat our review of the safety features described in the report and found acceptable in the attachment, except to assure that the material presented is applicable to the specific plant involved.

In accordance with established procedure (NUREG-0390), it is requested that Newport News Industrial Corporation publish accepted proprietary and non-proprietary versions of the licensing topical report within three months of receipt of this letter. The accepted versions must include this letter and the enclosed evaluation, following the title page. The report must also incorporate the information provided in the response to NRC's request for additional information submitted by Newport News Industrial Corporation letter from M. R. Eshelman to J. R. Miller (NRC) dated March 1, 1982. The report identification symbols must have a -A suffix.

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Should NRC criteria or regulations change such that our conclusions as to the acceptability of the report are invalidated, Newport News Industrial Corporation, and/or the applicants referencing the topical report, will be expected to revise and resubmit their respective documentation or submit justification for the continued effective applicability of the topical report without revision of their respective documentation.

Sincerely,

ORIGINAL SIGNED BY:

Cecil O. Thomas, Acting Chief
Standardization and Special
Projects Branch
Division of Licensing

Enclosure:
As stated

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C. O. Thomas
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