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SECRETARY
RULEMAKINGS AND
ADJUDICATIONS STAFF

Secretary
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Attn : Rulemakings and Adjudications Staff

5 November 2002

Re : Proposed Rule : 10 CFR Part 40 Transfers of Certain Source Material by Specific Licensees (RIN 3150-AG64)

Dear Sirs :

Corhart Refractories is a U.S. business unit of both Saint-Gobain SEFPRO, an international manufacturer of refractories for use in the glass and fiber glass industries, and Saint-Gobain Industrial Ceramics, an international manufacturer of specialty metallurgical refractories and corrosion-/abrasion-resistant ceramics for the materials handling and chemical process industries. Both of Corhart's locations routinely handle zircon (ZrSiO₄) and zirconia (ZrO₂) materials which contain low levels (<0.05% total, by weight) of naturally-occurring radioactive materials (NORM), specifically, uranium (U) and thorium (Th). Although none of our operations are related to the production or utilization of nuclear energy, our Louisville facility is a specific licensee of the Nuclear Regulatory Commission (NRC) through its Agreement with the Commonwealth of Kentucky because some minerals used in our processes have, on occasion, exceeded the 10 C.F.R. 40 licensing threshold. As a result, we are directly affected by the proposed rulemaking.

We support the Commission's objective of protecting the public from unreasonable and unnecessary exposures to radioactivity from licensed materials. We strongly agree that a dose-based approach should be established to ensure that commodities or wastes derived from licensed materials do not cause public doses to exceed established protective levels.

However, the pre-notification and approval for all transfers of unimportant quantities of source materials from licensees, as proposed, is overly broad. It subjects many useful commodities to unnecessary pre-notification, would impose unacceptable delays in commercial transactions involving useful industrial commodities, and would create an unfair trade advantage to foreign competitors in the zirconia industry. These adverse effects could be avoided by ensuring that the transfer rule is narrowly drafted to focus on *wastes that are expressly derived from licensed materials*. If the Commission wishes to extend the transfer rule to *commodities*, however, we do not believe that a sufficient technical basis has been established, in NUREG 1717 or elsewhere, to support a determination that zircon or zirconia cause worker or public doses of concern.

Our company is an active member of the Zirconium Environment Committee (ZEC), a group of zircon / zirconia users and producers dedicated to educating both users and regulators about NORM and to developing management practices to best ensure that exposures are maintained as low as reasonably achievable. We have interacted with the NRC through the Part 40 Jurisdictional Working Group and meetings with individual Commissioners. We also have interacted with the Conference of Radiation Control Program Directors (CRCPD) and

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the U.S. Environmental Protection Agency (EPA). Our experience with the Commission and the Part 40 Group confirms that NRC desires to exercise its jurisdiction over unimportant quantities in a thoughtful, deliberative and scientifically-based manner. In this regard, we support NRC's retaining jurisdiction over all source materials with appropriate dose-based controls applied to materials of genuine concern. Accordingly, we offer the following specific comments to the proposed rulemaking :

1. This proposed regulation is premature and is not technically supported. The NRC-chartered Part 40 Jurisdictional Working Group has been grappling with the complicated issue of whether to, and how to, regulate materials having low concentrations (<0.05%) of source materials (primarily U + Th). Such regulation has the potential for enormous practical and economic impact on several major industries and upon the regulators themselves by dramatically expanding the universe of regulated materials. From reports of recent meetings of this Group, it is not clear that the need for regulating all such materials currently exempt under 10 C.F.R. 40.13(a) has been established. The Group's March, 2002 Meeting Summary suggests that such action may prove to be unnecessary:

Dennis Sollenberger discussed his work on the analysis of NUREG-1717, "Systematic Radiological Assessment of Exemptions for Source and Byproduct Materials." Dr. Sollenberger has been analyzing the remaining information we received from the Office of Nuclear Regulatory Research, two references in the NUREG, and information NRC has received from industry representatives. Dr. Sollenberger discussed some of his preliminary findings, such as uncertainties regarding particle size, conservatism in calculations which are not realistic, error in original reference, etc. *Generally, he does not believe there is a significant health and safety concern that warrants regulatory action. Dr. Sollenberger's goal is to identify where uncertainty exists and bound what is and is not good data in the references. He would also like to evaluate the results with newer ICRP dose methodology.* He is talking with industry representatives, and stated that if anyone had additional information to provide, he would like to review it.

Id (emphasis supplied). The Part 40 Group's final determinations are not public at this time. Therefore meaningful comment on the justification for the proposed rule is not possible. Because the underlying technical basis (NUREG 1717 – the document cited in technical support of the proposed rule) for the proposed rule is still under review, because the preliminary indications from the NRC Working Group suggest that increased controls over unimportant quantities may not be needed, and because neither the Commission nor the public have been able to review the technical Group's conclusions, the transfer rule is premature and should be stayed until all relevant information is available for review and meaningful comment.

The proposed rule would, in effect, preempt the careful deliberations, decisions and recommendations of that Group by immediately establishing the precedent for the NRC to regulate previously exempt materials. It is strongly suggested that the Part 40 Group be allowed to complete its assigned task before proceeding with such a rulemaking

2. The effects of the proposed rule on licensees is not clear ; NRC may have underestimated the number of affected entities. The proposed rule, as drafted, would require written permission by a licensee prior to transferring low-concentration (0.05% U+Th) materials

to exempt persons. Whether low-concentration materials originating from other non-licensed material are included in the scope of the rulemaking is not clear from the language of the rule. Similarly, whether the proposed rule is intended to supersede existing license conditions governing authorized uses and transfers in accordance with the terms of a specific license, is also not clear.

One of the considerations for issuing a license is the intended, authorized use and the ultimate disposition of the licensed materials, particularly where commodities such as zirconia refractory are involved. Our Kentucky license describes the authorized use of the regulated materials. In past years, the license at this particular site has indicated "for possession and use in the manufacture of refractory brick." As it now stands, such a license condition constitutes "written approval" from the licensing authority for an authorized use. In effect, the proposed rule serves to condition authorized uses, including manufacturing commodities transferred to exempt persons, that are already embodied in existing licenses to a case-by-case basis. As a result, NRC's "Regulatory Flexibility Certification" that assumes only a handful of licensees per year (six) requiring permission for transfers would be a gross under-estimate. Based on current production figures in a depressed market, our licensed manufacturing facility could be required to submit several hundred requests for transfer approval annually to the Commission for refractory product shipments.

The additional costs to us as applicants for transfer approval -- if required for each shipment of refractory block or brick, transferred -- would be significant. In this regard, the cost/benefit analysis of Executive Order 12866 has not been properly undertaken by the Commission. .

4. NUREG 1717 does not present information consistent with NRC Information Quality Guidelines consistent with the Office of Management and Budget guidelines and NRC guidelines as required by Section 515 (a) of Public Law 106-554. NUREG 1717 asserts that doses of up to 40mSv/yr (4,000mrem/yr) occur primarily from inhaled dusts for workers handling zircon flour. This analysis has been confirmed to be overly conservative and unrealistic in light of industry data and more up-to-date (ICRP 68) dosimetry. As discussed above, Dr. Dennis Sollenberger's (NRC/OSTP) findings of significant errors and substantial overestimates of doses relates specifically to the zircon information presented in NUREG 1717. In public meetings of the Part 40 Group, and before the CRCPD SR-5 (TENORM) Task Force, it was made clear that the overestimates in NUREG 1717 are the result of errors within the original documents selected, cited, and used in compiling NUREG 1717.

Industry data provided to both the CRCPD and to the NRC by the ZEC confirms that occupational doses from zircon dusts would not be expected to exceed 1mSv/yr (100mrem/yr) provided minimal existing industrial hygiene regulations (OSHA) and other common guidelines (ACGIH) are met for respirable particulate in industrial settings. Note that in industrial plants performing minerals processing, ceramics manufacturing, and in foundries, the principal inhalation hazard of concern is from crystalline silica that is regulated at a permissible exposure level of 0.1 mg/m³ (8-hr TWA). Accordingly, NUREG 1717 overstates potential worker doses by a factor of 40! Because NUREG 1717 dramatically overestimates exposures to zircon and zirconia and NRC's Part 40 Group has affirmed that the document is over-conservative and in some

places, erroneous, the information in NUREG 1717 is not consistent with NRC Information Quality Guidelines consistent with the Office of Management and Budget guidelines and NRC guidelines as required by Section 515 (a) of Public Law 106-554.

Because the Commission Voting Record and the Preamble to the proposed rule confirm that NUREG 1717 forms substantially the entire technical basis for the proposed rule, and NRC's own analysis confirms that the document is replete with errors, we hereby request the Commission to correct the information presented in NUREG 1717 in accordance with NRC Information Quality Guidelines consistent with the Office of Management and Budget guidelines and NRC guidelines as required by Section 515 (a) of Public Law 106-554.

5. The proposed rulemaking creates unfair trade advantages in the zirconia industry. Consider the case of a zirconia manufacturer in the domestic U.S. who is subject to pre-notification and approval for each transfer of refractory zirconia articles to an exempt person (glass manufacturer or steel mill). Because foreign zirconia producers would not be subject to the pre-notification and approval, foreign zirconia articles could be imported as unimportant quantities without undue delay in shipping or increased transaction costs. In this regard, the proposed rule would directly undermine domestic zirconia production and favor foreign competition in an already economically stressed industry.

6. Unintended negative consequences seem particularly likely with this proposed rulemaking. In an effort to allow the NRC flexibility to exercise reasonable discretion, there is a certain amount of ambiguity in the text of this proposed rule. There are a number of issues discussed in the supporting information which do not appear in the proposed rule (e.g. no specific maximum exposure limit is specified even though procedural trigger levels of 0.25mSv/yr and 1mSv/yr are discussed). There are a number of other issues not addressed at all (e.g. blanket approvals for certain products/applications, or a potential new lower concentration/exposure limit below which NRC approval is neither necessary nor required). There seems to be little recognition of the difference between occupational exposures and those for the general public. We also can imagine interpretations of this proposed rule that might be more restrictive than our own current reading of NRC intentions. Simply put, we are convinced that the NRC has not recognized many of the possible ramifications of this rulemaking.

For example, consider our own case. In the past, this facility has used small amounts of licensed material (baddeleyite) as a minor ingredient to supplement the performance-critical zirconia content to certain of our fusion-cast refractory products. We carefully controlled the products to insure that they remained exempt--below the 0.05% source material limit. In recent years we have, in fact, been able to utilize exempt raw materials. Volatile conditions in the global zircon/zirconia market, however, could foreseeably compel us to reinstate the use of licensed raw materials. Our products are shipped to hundreds of customers annually, ranging from small art glass studios to Fortune 100 corporations, at locations around the world. If the NRC chose to not offer some sort of blanket approval (as noted in item 2 above), we would be compelled to seek written permission for each shipment (most orders require multiple shipments). Our requests alone would, within 1-2 weeks, exceed the 6 annual requests anticipated in the

“Regulatory Flexibility Certification” section of the rulemaking proposal. We know of at least two other licensed manufacturers, one a supplier of ours, who would be similarly affected by this rulemaking. Assuming that other licensees face similar situations, it is easy to visualize gridlock in the NRC approval process, both at the Federal level and in the Agreement states.

There is a further potential complication. Because we recycle our scrap product through our process, it is likely that some level of U and/or Th which originated in licensable material would persist in products for some time after its use was discontinued. What concentration of source atoms ends the need for approval? We feel that the NRC has grossly underestimated both the number of affected, or potentially affected, licensees, the number of approval requests that they will receive from affected licensees and the costs incurred by the affected licensees.

Individual requests for NRC permission, even when essentially identical and utilizing existing test data, would increase our costs. Like most manufacturers today, our profit margins are extremely thin and any additional cost can adversely affect our competitiveness and, therefore, our existence. In our case, our sole domestic competitor is currently not a licensee. Likewise, foreign competitors would not be subject to this rule. The net result would be to endanger both our domestic and international competitiveness and, ultimately, the ability of this facility to continue to operate. Adding the spectre of bureaucratic delays to this mix would only exacerbate this situation..

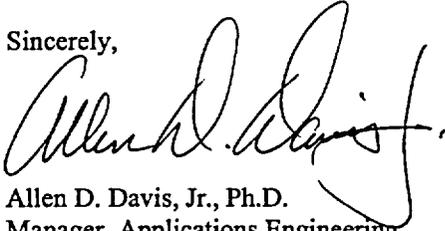
Other industries, besides the refractory ceramics industry, utilize materials with “unimportant quantities” of source materials. Most face the same financial and competitive situations noted above. The following presents a partial list of industries where licensees would be potentially affected under this rulemaking:

- Mining and mineral beneficiation—of zircon and/or rare earths; of phosphates
- Metallurgy—Superalloy foundries for jet/ turbine engines (crucibles, mold sand, alloy components); thoria-dispersed nickel; melter sensors; welding rods (especially TIG welding); depleted uranium armor-piercing projectiles
- Electronics—rare earth magnets; dielectric and piezoelectric ceramics; thoriated or rare earth containing laser glasses; sensors for the glass and steel industries (e.g. oxygen sensors, level sensors, etc.)
- Chemicals—zirconium, thorium and rare earth chemical processing, U-containing catalysts

It is important to know that many of these industries provide products or services directly or indirectly related to national security and defense. Therefore, it is a cause for concern that this proposed rule could harm the ability of U.S. companies to remain competitive and, at the same time, increase the dependence upon foreign companies for our national defense and security.

In summary, as an affected licensee, we acknowledge the Commission’s good intentions to tighten controls over licensed materials, but object to this rulemaking as being premature in light of the unfinished work of the Part 40 Group and as being substantially based on information that is inconsistent with Information Quality standards pursuant to Section 515 (a) of Public Law 106-554.

Sincerely,



Allen D. Davis, Jr., Ph.D.
Manager, Applications Engineering

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Commissioner Diaz
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