CSTP-23 R

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

November 2, 1999

ALL AGREEMENT STATES
MINNESOTA, OKLAHOMA, PENNSYLVANIA, WISCONSIN

OTHER INFORMATION: REQUEST FOR TECHNICAL INFORMATION (SP-99-074)

The Nuclear Regulatory Commission (NRC) received the enclosed letter, dated October 25, 1999, from the U.S. House of Representatives Committee on Commerce. The letter requests a response to 45 questions. Two of the questions, numbers 42 and 43, require information from Agreement States so that a complete response can be provided by NRC.

As stated in question 42, please identify whether you have a definition, and provide the definition for the following terms: waste; disposal; effluent; byproduct material; transfer; and release limits. If you have other terms similar to the above or that may be related to the release of radioactive material, please provide those definitions.

Question 43 contains several parts and we are limiting our request to you to only identify what, if any, radiological criteria (e.g., total activity, activity per unit area, or dose rate) that pertain to the unrestricted release of solid materials are used in any State standards, guidance, or State license authorizations. If the criteria differentiate between surficial and volumetric contamination, please identify that fact.

Due to the need to promptly respond, we would greatly appreciate your response by November 8, 1999. Please also note that to assist in our continuing effort to solicit public input on the release of solid materials, we also seek additional information on your current Agreement State program practices. A list of these questions is enclosed. We will appreciate your response to these questions by November 12, 1999. Please direct your responses and any questions to Tom O'Brien, Telephone: (301) 415-2308 or E-mail: tjo@nrc.gov, Office of State Programs, USNRC, Washington, DC 20555-0001.

This information request has been approved by OMB 3150-0029, expiration 04/30/2001. The estimated burden per response to comply with this voluntary collection request is 3 hours. Forward any comments regarding the burden estimate to the Information and Records Management Branch (T-6 F33), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, and to the Paperwork Reduction Project (3150-0189), Office of Management and Budget, Washington, DC 20503. If a document does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information.

Frederick C. Combs, Deputy Director
Office of State Programs

Enclosures:
As stated

6/13

INFORMATION REQUEST ON RELEASE OF SOLID MATERIALS

We are seeking information on your current Agreement State program practices with respect to the release of solid materials (including soil), that have surface and/or volumetric contamination. The enclosed table excerpts criteria for release of sites for unrestricted use that Agreement States submitted to NRC in response to an All Agreement States Letter dated September 20, 1993 (SP-93-139). This reflects the current information we have on your State's release criteria for both Atomic Energy Act (AEA) and naturally occurring radioactive materials (NORM). Please note that this attached table was inadvertently transmitted with All Agreement States Letter dated October 29, 1999 (SP-99-073). Your response to the six questions below, with respect to surficial and/or volumetric contamination of solid materials containing AEA material or NORM, would be greatly appreciated by November 12, 1999.

1. How were your State's radiological criteria derived and to what type of materials (e.g., medical, pipe scale) do they apply? If Regulatory Guide 1.86 was used as a basis please indicate so, if another technical basis was used, please provide that basis.

2. How are your State's radiological criteria applied (e.g., through guidance, licensing actions, regulations)?

3. What surveying/monitoring methodologies are used? If NUREG/CR-5849 or MARSSIM are used, please indicate so. If a State developed or another method is used, please provide that method.

4. What type of instruments (e.g., manual versus automated, hand-held versus stationary, barrel counters versus conveyor systems) and what sensitivity (i.e., lower limit of detection) values are used as selection criteria for instruments used in demonstrating compliance with the radiological criteria provided in response to Question 1?

5. If your release criterion is zero, how do you have your licensees determine that a solid to be released is not radioactive or meets the zero criterion?

6. If any State licensees currently have volumetric release authorization, please identify the licensees and whether the quantities released are tracked, summarize the scope of these authorized activities, and provide the criteria used in granting the authorization.

Enclosure:
As stated

UNRESTRICTED RELEASE CRITERIA
(as of September 1993)

STATE	AEA	NORM	SOIL
Alabama	NRC Criteria	No criteria	Texas Criteria (see TX)
Arizona	NRC Criteria - Regulatory Guide 1.86	Background by license condition	Arizona Regs[1] - equivalent to the 10 CFR Part 20 water limits converted to pCi/gm + <10 μR/hr at 1 meter
Arkansas	Arkansas Regs - equivalent to the 10 CFR Part 20 H_2O limits converted to μCi/gm	Arkansas Regs-5/15[2]	Arkansas Regs - as appropriate for AEA material or NORM
California	Background or dose that results in less than $1x10^{-4}$ lifetime cancer risk (CA Proposition 65 limits)	CRCPD Criteria 5/15	old Part 20 H_2O limits converted to pCi/gm
Colorado	NRC Criteria Regulatory Guide 1.86 + EPA's Uranium Mill Criteria at 40 CFR 192.12 (5/15) for uranium mills.	No Criteria	EPA's Uranium Mill Criteria (5/15) for Ra-226 or perform a risk assessment
Florida	NRC Criteria Regulatory Guide 1.86	No Criteria	Case-by-case evaluation
Georgia	NRC Criteria Regulatory Guide 1.86	CRCPD Criteria 5/15	None for AEA material
Illinois	Illinois Regs Surface - 32 IAC 340 Appendix A - limits are similar to Reg Guide 1.86 RAM except source material - 32 IAC 330, Appendix A (exempt conc. Limits) Source material - 5 pCi/gm of soil averaged over the first 15 below the surface and 5 pCi/gm averaged over 15 cm thick layers more than 15 cm below the surface (5/5)	Illinois Regs - radium - 5 pCi/gm of soil averaged over the first 15 cm of soil and 5 pCi/gm averaged over 15 cm thick layers more than 15 cm below the surface (5/5)	Illinois Regs as appropriate for AEA material or NORM + the exposure rate of 100 cm from the surface shall not exceed background (exposure rate criteria also apply to materials other than soil)
Iowa	NRC Criteria or modified EPA Uranium Mill Criteria (.e.g., 5/5 instead of 5/15)	EPA Uranium mill criteria (5/15)	No regs except for NORM

[1]Arizona Radiation Regulatory Agency staff indicated that they expected to promulgate these regulations in the very near future.

[2] ≤5 pCi/gm of soil in the first 15 cm of soil and ≤ 15 pCi/gm in any layer of soil more than 15 cm below the surface.

STATE	AEA	NORM	SOIL
Kansas	NRC Criteria Regulatory guide + ALARA	CRCPD Criteria (5/15)	Case-by-case determination or CRCPD Criteria (5/15)
Kentucky	NRC Criteria Regulatory guide 1.86	Draft KY NORM regs - 5 pCi/gm or less	Site specific evaluation based on 100 mrem/yr + ALARA
Louisiana	NRC Criteria Regulatory guide 1.86 + <10mrem/yr	LA regs for land contaminated with Ra-226 or Ra-228 with radon emanation rates > 20 pCi/hr 5/15: if < 20 pCi/hr, 30 pCi/gm averaged over a maximum depth of 15 cm	No criteria
Maine	NRC Criteria	CRCPD and EPA Uranium mill criteria (5/15)	CRCPD criteria (5/15)
Maryland	NRC Criteria Regulatory guide 1.86	Background	Any NRC Criteria + ALARA
Mississippi	NRC Criteria	< 5 pCi/gm and restrictions on Radon flux rate	Miss Regs - equivalent to the 10 CFR Part 20 H_2O limits converted to μCi/gm + EPA Uranium Mill Criteria (5/15)
Nebraska	NRC Criteria	No criteria	Background
Nevada	Background	Background	Background
New Hampshire	NRC Criteria	No criteria	Case-by-case determination
New Mexico	NRC Criteria Regulatory guide 1.86	< 50 uR/hr including background	Background or Case-by-case determination
New York	<10 mrem/yr + ALARA excluding background	< 10 mrem/yr and ALARA excluding background	<10 mrem/yr + ALARA excluding background
North Carolina	NRC Criteria	Case by case determinations	<MDL on suitable instrument

STATE	AEA	NORM	SOIL
North Dakota	North Dakota Regs - NDRHR Appendix F - similar to Regulatory guide 1.86 for surfaces Ram except source material - Chapter 33-10-03, Schedule A (exempt conc. limits) Source material - 5pCi/gm averaged over the first 15 cm below the surface and 5 pCi/gm averaged over 15 cm thick layers more than 15 cm below the surface (5/5)	25 uR/hr screening level, then < 5 pCi/gm in any 15 cm of soil. Radium - Chapter 33-10-03, Schedule A (exempt concentration limits)	As appropriate for NORM or AEA material + the exposure rate at 100 cm from the surface shall not exceed background (exposure rate criteria also apply to materials other than soil)
Oregon	NRC Criteria Regulatory guide 1.86 + ALARA, 1981 BTP, CRCPD Criteria (5/15)	Background + ALARA, 1981 BTP, CRCPD Criteria (5/15)	Background + ALARA, 1981 BTP, CRCPD Criteria (5/15)
Rhode Island	NRC Criteria	No Criteria	No Criteria
South Carolina	NRC Criteria NUREGs 0586 & 5512	Currently drafting regs	No Criteria
Tennessee	NRC Criteria Regulatory guide 1.86 + 1981 BTP	< 5 pci/gm above background and CRCPD criteria (5/15), 1981 BTP Option 1	same as NORM Criteria
Texas - TNRCC & DOH	Texas Regs Part 21 - Texas H_2O water limits converted to μCi/gm. Limits for certain RAM are specified in Part 21	Texas Regs Part 21 for Ra-226 or Ra-228 (5/15) and Part 46 (surfaces) Reg Guide 1.86 limits for U-materials	Texas Regs - Parts 21 or 46 as appropriate for AEA material or NORM
Utah	NRC Criteria	1981 BTP, EPA Uranium mill criteria (5/15), NUREG 5512	1981 BTP, EPA's Uranium Mill Criteria (5/15), NUREG-5512
Washington	NRC & CRCPD Criteria (5/15)	Currently developing criteria	Case-by-case determination

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U.S. House of Representatives
Committee on Commerce
Room 2125, Rayburn House Office Building
Washington, DC 20515–6115

October 25, 1999

The Honorable Greta Dicus
Chairman
Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, Maryland 20852

Dear Chairman Dicus:

We are writing to inform the Nuclear Regulatory Commission (NRC) of an unprecedented act taken by one of the Commission's agreement states to license the release of a large volume of products containing radioactive byproduct material into interstate commerce. We are asking for an immediate investigation of the license and an expeditious response to the undersigned to the attached questions so that we may further review its legality. This is particularly significant because the Department of Energy (DOE) – from whom this contaminated material emanated – and nuclear reactor plants undergoing decommissioning would like to release hundreds of thousands of tons of contaminated byproduct material into interstate commerce over the next several years. This has never been allowed before.

In March of this year -- without public notice or comment -- the State of Tennessee approved a license amendment which purported to authorize Manufacturing Sciences Corporation (MSC), a wholly owned subsidiary of BNFL, Incorporated, to release into general interstate commerce 6,000 tons of nickel metal volumetrically contaminated with technetium, a radioactive material that is a byproduct of the process of producing or utilizing special nuclear material. The nickel is a product of the operations of the gaseous diffusion plant at the Oak Ridge nuclear weapons facility operated by the DOE. The license amendment would authorize for the first time since the passage of the Atomic Energy Act the totally unrestricted transfer or sale by a radioactive waste processing company of massive and continuing amounts of radioactive byproduct material without any labeling or use restriction requirements. It also marks the first time that licensed material has been allowed to be released into interstate commerce without a license from the NRC itself.

MSC's plan is to sell the nickel as scrap without notice as to its radioactive properties. As such, it would be incorporated into steel and other nickel-containing products sold for general

use. Such a release appears to violate numerous NRC regulations which were developed specifically to prohibit the uncontrolled release by radioactive byproduct material into general commerce. These regulations implement a decades-long and still-existing policy of the Atomic Energy Commission and its successors to keep radioactive byproduct material out of the hands of the general public for safety and national security reasons. Additionally, such releases have been vehemently opposed by the American public for some time. In fact, as the NRC itself recognized, in 1992, Congress ordered the NRC in the Energy Policy Act to halt its attempt to set a "below regulatory concern" standard for the unrestricted release of such materials after a public uproar. (*See* 64 Fed. Reg. 35094.)

It also appears that the NRC regulations forbid states from taking such an action on their own. Agreement states, which do license some restricted uses of byproduct material, have been specifically banned since their creation from licensing the unrestricted release of byproduct material. (*See* 10 CFR 30.3; 10 CFR 150.15.) Tennessee is an agreement state of the NRC under the provisions of Section 274 (b) of the Atomic Energy Act. Its agreement with the NRC incorporates the ban against licensing the unrestricted release of byproduct material. Article III, Agreement between Atomic Energy Commission and the State of Tennessee, Aug. 21, 1965. As described in more detail in the attached staff memorandum, we have found no subsequent statutory or regulatory authority for Tennessee to issue the MSC license amendment.

Since the enactment of the Atomic Energy Act in 1946, the NRC has banned the release of radioactive byproduct material into interstate commerce without a specfic license from the NRC. Byproduct material is defined in the Act and the NRC regulations as radioactive material (except special nuclear material) that is a byproduct of the process of producing or utilizing special nuclear material. (*See* 42 U.S.C. 2014 (e).) The NRC's regulations governing these licenses for release are detailed and extremely restrictive. They require, for example, that byproduct be contained in a product <u>only</u> because its radioactive properties are necessary to the product, not as a contaminant of the product. Each product to be licensed is identified by name and has its own standards. Extensive warning labels are required before transfer from an NRC licensee to a non-licensee is allowed for both individual products and bulk transfers. (*See* 10 CFR Parts 30-35.)

The reason for these tight controls was clearly stated by the NRC in 1962, when it issued its agreement state regulations prohibiting those states from regulating the use of byproduct material that would go into general commerce.

> The uncontrolled distribution of atomic materials in products designed for distribution to the general public, such as consumer type devices, and the ultimate <u>uncontrolled release</u> of these material into the environment, <u>involve questions of national policy which have not yet been resolved</u>." ("Exemptions and Continued Regulatory Authority in Agreement States under Section 274," 27 Fed. Reg. 1351, Feb. 14, 1962.) (Emphasis added.)

In brief, the NRC intended to know -- and control -- exactly who was using byproduct material.

To date, those national policy issues identified in 1962 have not been resolved in favor of broader releases. All attempts by the NRC to set national standards for additional unrestricted releases by regulation have been met with significant opposition from the public. Nor has the NRC changed its regulations governing agreement states to allow the states, such as Tennessee to assume the responsibilities for licensing the release of byproduct material into general commerce.

The regulations not only cover MSC, the initial transferor of byproduct material into interstate commerce, but also every subsequent possessor or purchaser who is using byproduct material for commercial purposes. A specific license to manufacture, process, produce, package, repackage, or transfer any quantity of byproduct material for commercial distribution to persons exempt from licensing is required. This would cover all the scrap dealers, steel mills and any other manufactures or distributors of commodities and products that contain the contaminated nickel. Those parties are required to label their products with its radioactive content prior to distribution, demonstrate that the byproduct material will not be released to the environment, and undergo a variety of other prohibitions prior to sale. (*See* 10 CFR 32.14 (a)(6).) The license also requires a commitment from the licensee that the material will not be applied to a human being, that it is identified as radioactive, that it is not incorporated into any product intended for commercial distribution, and that it be labeled "Radioactive Material – Not for Human Use – Introduction Into Foods, Beverages, Cosmetics, Drugs, or Medicinals or Into Products Manufactured for Commercial Distribution is Prohibited – Exempt Quantities Should Not be Combined." (*See* 10 CFR 32.18-19.)

This regulatory structure is completely in keeping with the policy to keep all byproduct material out of the hands of the general public that pervades the NRC's rules, even in the restricted release areas in which agreement states are authorized to regulate. For example, agreement states regulate the use of byproduct material in devices designed for certain enumerated industrial processes. But the NRC requires that each device be labeled, tracked, tested for leakage, returned only to the manufacturer for repair and that it be disposed of only by returning it to the manufacturer or other person licensed to receive it. These devices specifically cannot be abandoned or exported. (*See* 10 CFR Part 31.)

Even the Commission's Regulatory Guide 1.86 (Termination of Operating Licenses for Nuclear Reactors), which -- although there are questions as to its legitimacy discussed in more detail in the attached memorandum -- many point to as the basis for the release of contaminated metal, is limited to nuclear plant operating licenses which remain under the control of the NRC. The NRC itself must approve the release of all such equipment and scrap under this guidance document.

As a result of the staff's review of the Atomic Energy Act and the NRC's extensive regulations governing the unrestricted release of byproduct material, we are at a loss to determine

under what authority Tennessee issued this license amendment. There are strong indications, however, that the NRC and Tennessee are taking the position none of these stringent regulations apply to MSC, but that its unrestricted release of byproduct material into commerce is some alternate form of "waste disposal" or "effluent" release from an operating nuclear facility that the state can regulate under Part 20 of the NRC's regulations. (Regulatory Guide 1.86 is based on this interpretation.)

This theory is not supported by the law or NRC's own regulations. First, the Part 20 regulations control exposure to ionizing radiation resulting from "routine" activities conducted under licenses issued by the NRC, not exposures resulting from the uncontrolled use of radioactive material in commercial products by non-licensees. (*See* 56 Fed. Reg. 23390, May 21, 1991.) Second, in the Atomic Energy Act and throughout the NRC's regulations, "disposal" is defined as "isolation" of radioactive materials. Unrestricted release does not appear to promote "isolation." (*See, e.g.*, 42 U.S.C. 2021b (7).) Although 10 CFR 20.2002 allows a licensee to obtain a license for an alternate forms of "disposal," there is no evidence that free release is an alternate form of disposal. Indeed, when Congress amended the Atomic Energy Act to require the NRC to identify "methods for the disposal of low-level radioactive waste other than shallow land burial, and establish and publish technical guidance regarding licensing of facilities that use such methods," Congress listed those technical requirements as "site suitability, site design, facility operation, disposal site closure, and environmental monitoring, as necessary to meet the performance objectives established by the Commission for a licensed low-level radioactive waste disposal facility." (42 U.S.C. 2021h (emphasis added).) Free release cannot meet any of these technical requirements, and every single one of the alternate methods identified by the NRC involved isolation of the radioactive material. ("Licensing of Alternative Methods of Disposal of Low-Level Radioactive Waste," NUREG-1241, December 1986.)

Finally, it is difficult to view the release of tons of nickel metal as bearing any similarity to gaseous and liquid effluents or "readily soluble" solids allowed to be emitted into the environment from an operating facility under the Part 20 regulations. (*See e.g.*, 10 CFR 20.2003.) Part 20 sets exposure limits for plant workers and an effective annual dose for members of the public deemed to be continuously at the boundaries of the plant for a year when effluents leave the plant. In publishing its proposed Part 20 revisions in 1985, the NRC described the public dose as being received in the following manner:

> If effluents containing radionuclides are released, external exposures occur directly from the passing plumes, from radionuclides in the environs, or from radionuclides taken into the body by inhalation or by ingestion of water or locally produced foodstuffs. (50 Fed. Reg. 51992, 52011.) (Emphasis added.)

This bears no relationship to contaminated products being deliberately transferred to the public through the normal stream of commerce.

The NRC, in its recent issues paper issued as a first step to another attempt to set a rule to allow the unrestricted release of certain byproduct material into interstate commerce, says its purpose is only to provide "consistency" for solid material releases with the allowable gaseous and liquid effluent release provisions. (*See* 64 Fed. Reg. 35090.) Not only does the NRC already have a regulation for the release as sewage of small amounts of "readily soluble" solids, it has yet to explain how a product deliberately created by a licensee for transfer is an "effluent" resulting from its "routine" operations that will leave the boundary in some sort of natural movement.

Even were the NRC somehow to determine that the State of Tennessee did have authority to issue this license, then we also must ask whether the Commission, under the provision in 42 U.S.C. 2021 (g) and (j), should begin consideration of proceedings to suspend all or part of its agreement with Tennessee because the state has acted in a manner incompatible with the NRC's "Statement of Principles and Policy for the Agreement State Program Policy Statement on Adequacy and Compatibility of Agreement State Programs" (hereafter cited as "Agreement State Policy"). That policy and the implementing Directive 5.9 set identical release limits as a program element that must be implemented as one of the legally binding requirements for an Agreement State to maintain a program that is compatible with NRC's regulatory program." (State Agreement Policy; Directive 5.9, Objectives.) The directive states that "concentration and release standards" are a Category A program element, for which it is mandatory that the states adopt identical standards. NRC has already admitted in its issues paper that it has no standard. Therefore, Tennessee has set its own separate release standards for contaminated nickel.

Compatibility is defined as "program elements necessary to meet a larger nationwide interest in radiation protection <u>generally limited to areas of regulation involving radiation protection standards and activities with significant transboundary implications</u>." ("Agreement State Policy," Subsection III (B).) State radiation control programs are compatible only when they do "not create conflicts, duplications, gaps, or other conditions that would jeopardize an orderly pattern in the regulation of agreement material on a nationwide basis." ("Compatibility," Subsection III (E).) To achieve compatibility, state standards for release limits "should be essentially identical to those of the Commission." ("Agreement State Policy," Subsection III (E) (A).)

Because the NRC has set no release standard for volumetrically contaminated materials and is in the process of beginning a rulemaking to establish that release standard, Tennessee cannot establish a standard in an individual license amendment and maintain compatibility. If it is allowed to do so, other states are free to set more or less restrictive standards, resulting in regulatory chaos. The Agreement State Policy also requires that the public have "opportunity for early involvement in significant regulatory program decisions" and that "radiation control programs should be based on a common regulatory philosophy including the common use of definitions and standards." This is clearly a "significant regulatory program decision" done without any public involvement.

We are seeking to determine whether the NRC is carrying out its statutory responsibilities pursuant to its established regulations. To that end, we ask that you respond to this letter and the attached questions by Monday, November 15, 1999. We also ask that this letter and attached memorandum and questions be placed into the public record of the Commission's consideration of this matter. Please have your staff contact Edith Holleman, Minority Counsel, at (202) 226-3400 if you have any questions.

Sincerely,

JOHN D. DINGELL RANKING MEMBER COMMITTEE ON COMMERCE	RON KLINK RANKING MEMBER SUBCOMMITTEE ON OVERSIGHT AND INVESTIGATIONS	EDWARD J. MARKEY RANKING MEMBER SUBCOMMITTEE ON TELECOMMUNICATIONS, TRADE, AND CONSUMER PROTECTION

Attachments

REQUESTS AND QUESTIONS
FOR THE NUCLEAR REGULATORY COMMISSION

1. Please provide a copy of the complete agreement between the Nuclear Regulatory Commission (NRC) and the State of Tennessee issued pursuant to Section 274 (b) of the Atomic Energy Act, including any amendments issued subsequent to the original 1965 amendment.

2. Please provide a copy of the complete license issued by the State of Tennessee to Manufacturing Sciences Corporation (MSC), including any amendments issued subsequent to the original 1965 amendment.

3. In 1962, when the NRC first promulgated its regulations setting out agreement states' authority to regulate some aspects of byproduct material use and disposal, the Commission reserved for itself – and denied to the states – the authority to license, or exempt from licensing, the transfer of possession or control over any "equipment, device, commodity or other product containing source, byproduct or special nuclear material that could be "distribut[ed] to the general public." (10 CFR 150.15.) The reason was clearly stated:

   > The uncontrolled distribution of atomic materials in products designed for distribution to the general public, such as consumer type devices and the ultimate uncontrolled release of these materials into the environment, involve questions of national policy which have not yet been resolved. It is for this reason that the Commission is retaining control over such products. (21 Fed. Reg. 1351, Feb. 14, 1962.)

   Does the NRC still retain control over such products and the "ultimate" uncontrolled release of those materials? If the answer is in the negative, please explain and provide supporting documentation.

4. Have the questions of national policy referred to in the 1962 *Federal Register* notice been resolved? Please provide copies of any documents that support a statement of resolution.

5. In 1969, the term "general public" was deleted from 10 CFR 150.15. The rewritten section prohibited transfer of byproduct material to "all other persons exempted" from an NRC license. Did this change reduce or expand the number of persons and/or products covered by the prohibition? Please explain and provide supporting documentation.

6. Byproduct material is defined by statute as "radioactive material (except special nuclear material) that is a byproduct of the process of producing or utilizing special nuclear material." (42 U.S.C. 2014(e).) Under 10 CFR 30.71, technetium-99 is listed as a byproduct material. Since January 1, 1999, has the NRC removed technetium-99 from

the byproduct material list? If the answer is in the affirmative, please provide supporting documentation.

7. The Department of Energy has 6,000 tons of nickel barrier from its gaseous diffusion plant in Oak Ridge, Tennessee, which contains technetium-99. This contaminated material resulted from the uranium enrichment process undertaken at this plant. Is the technetium a "byproduct of the process of producing or utilizing special nuclear material"? If not, please describe what it is and provide any documentation supporting a different definition.

8. MSC intends to melt the nickel barrier, remove some, but not all, of the technetium-99, and sell the resulting product to whomever wishes to purchase it. Is this nickel a product containing byproduct material as defined by 42 U.S.C. 2014(e) and 10 CFR 30.71?

9. In its contract with BNFL, the Department of Energy has described the contaminated nickel as "process equipment" that may be recycled and released as scrap metal by MSC, an NRC-licensed facility. (*See* East Tennessee Technology Part (ETTP) Three-Building Decontamination and Decommissioning (D&D) and Recycle Project Contract, August 25, 1997, Attachment A, pp. 23, 33-34.) Please explain why recycling and release as scrap metal does not constitute the "transfer" of a product containing byproduct material to exempt persons does not require a license from the NRC under Part 30.3. Please provide supporting documentation.

10. Is it the NRC's understanding that the nickel contaminated with technetium-99 which will be released by MSC into interstate commerce without any restrictions on use may find its way into a host of consumer products, such as tableware, orthodontic braces, caps for baby food jars, cans used for food and beverages, automobiles, intrauterine devices, hip replacement devices, and all other products that incorporate steel and/or of various types?

11. As of January 1, 1999, by regulation (published in 10 CFR 150.1 *et seq.*), the NRC has prohibited agreement states from exempting persons from the Commission's licensing and regulatory requirements in 10 CFR Parts 30-40 who carry out the following activity: "The transfer of possession or control by the manufacturer, processor, or producer of any equipment, device, commodity, or other product containing source material or byproduct material whose subsequent possession, use, transfer and disposal by all other persons are exempted from licensing and regulatory requirements of the Commission under Parts 30 and 40 of this chapter." (10 CFR 150.15.) That prohibition is repeated in 10 CFR 30.3. Has there been any regulatory revision of this prohibition since January 1, 1999? Please provide copies of any such revisions.

12. Article III of the agreement between the NRC and the State of Tennessee incorporates the prohibition cited in 10 CFR 150.15 and 10 CFR 30.3 as a limitation on the State's authority. Has there been any revision of Article III that now allows the State of

Tennessee to exempt persons from the Commission's licensing and regulatory requirements under Parts 30 and 40 who are undertaking the activities listed in 10 CFR 150.15? Please provide copies of any such revisions.

13. The MSC nickel containing the byproduct material appears to be one or more of the following: "equipment, device, commodity, or other product containing source material or byproduct material." (10 CFR 150.15.) Please describe which of the above categories are applicable to the MSC nickel. If it is the NRC's position that none applies, please explain and provide supporting documentation.

14. Under its license amendment, the State of Tennessee has permitted MSC to transfer "possession or control" of metal containing technetium-99 to anyone who wishes to purchase or otherwise use it. Are those persons "exempt from the licensing and regulatory requirements of the Commission under Parts 30 . . . of this chapter"? If they are, under what authority does Tennessee issue such a license? If the answer is in the negative, please explain and provide documentation.

15. The transfer of byproduct material by NRC licensees to exempt persons is prohibited in 10 CFR 150.15 and 10 CFR 30.3 without certain licenses from the NRC itself. Is it the NRC's position that the sale or transfer of byproduct material by MSC to exempt persons is not covered by these regulations? If so, please explain and provide supporting documentation.

16. NRC regulations in 10 CFR 30.14 (c) and (c) requires that anyone introducing any concentration of byproduct material into a "product or material" must have a "specific license issued by an agreement State, the Commission, or the Atomic Energy Commission expressly authorizing such introduction." Persons who put the material in a product "knowing or having reason to know" it will be transferred to exempt persons have a specific prohibition. This appears to cover both MSC and any subsequent purchaser of the MSC nickel who plans to incorporate it into another product or commodity, such as a carload of nickel scrap or steel or nickel products. How does the NRC or the State of Tennessee plan to determine that each one of these processors and manufacturers has a "specific license" to incorporate this material into their products? Please explain and provide supporting documentation.

17. 10 CFR 30.14 further limits the introduction of byproduct material in less than exempt concentrations into both industrial and consumer products to those applications in which the byproduct material is used for its radioactive purposes. This can only be done by a holder of an NRC or agreement state license. The byproduct material released by MSC will be inserted into many products by numerous persons. Will it be released only for applications in which it will be used for its radioactive purposes by licensees with "express authorization" in their license to do so? If not, please explain why these regulations do not apply and provide supporting documentation.

18. The specific license requirements for the introduction of byproduct material into a product or material – even in exempt concentrations – and the transfer of ownership or possession to an exempt person are governed by 10 CFR 32.11. These requirements are numerous and specifically provide that the material not be incorporated into any product designed for application to a human being. Are these regulations applicable to persons obtaining byproduct material from MSC? If they are not applicable to persons who obtain byproduct material from MSC, please explain why and provide documentation.

19. 10 CFR 30.11 specifically prohibits the introduction of byproduct material into other products that are designed "for application to a human being." Some of the potential uses for the nickel containing byproduct material are earrings, orthodontic braces, hip replacement devices and intra-uterine devices. Are these products designed for application to a human being? If not, please explain why not and provide supporting documentation.

20. 10 CFR 32.18 establishes the requirements for obtaining a license to release byproduct material in exempt quantities for commercial distribution to a person without a license. Does MSC's license amendment allow it to release byproduct material in exempt quantities for commercial distribution to a person without a license? If the answer is in the affirmative, please explain and provide supporting documentation.

21. According to 10 CFR 32.18, prior to transfer from a licensee to a person exempt from licensing, the byproduct material must be in the form of processed chemical elements, compounds, or mixtures, tissue samples, bioassay samples, counting standards, plated or encapsulated sources or similar substances, be identified as radioactive and to be used for its radioactive properties, cannot be incorporated into any manufactured or assembled commodity, product, or device intended for commercial distribution.

    (a) Will the MSC nickel containing byproduct material be in one of the above forms? If so, state which one and provide documentation of that form.

    (b) Will the MSC byproduct material be identified as radioactive? If the answer is in the affirmative, please provide documentation of the labeling requirements or other methods of identification. If the answer is in the negative, please explain why this material is not required to be identified as radioactive and provide supporting documentation.

    (c) Will the MSC byproduct material be used for its radioactive properties? If the answer is in the affirmative, please provide documentation of that use. If the answer is in the negative, please explain why this material is not required to be used for its radioactive properties and provide supporting documentation.

(d) Will the MSC byproduct material be incorporated into a commodity intended for commercial distribution? If the answer is in the negative, please explain and provide supporting documentation.

22. Under 10 CFR 32.18-.19, the applicant must submit, and the NRC approve, prototype labels and brochures for each container of byproduct material which include the following statements: (a) the material is exempt from licensing; (b) the label will bear these specific words: "Radioactive Material -- Not for Human Use -- Introduction Into Foods, Beverages, Cosmetics, Drugs, or Medicinals, or Into Products Manufactured for Commercial Distribution is Prohibited -- Exempt Quantities Should Not be Combined"; and (c) set forth appropriate additional radiation safety precautions and instructions about handling, use, storage, and disposal of the radioactive material.

Does the MSC license amendment permitting release of the DOE nickel contaminated with byproduct material mandate any of these labeling requirements? Please explain your response and provide supporting documentation.

23. As described in the MSC license amendment, does the 6,000 tons of nickel containing byproduct material to be transferred by MSC contain in total more or less than the exempt quantity of technetium listed in 10 CFR 30.71? Please explain and provide supporting documentation.

24. 10 CFR 32.19 requires that no more than 10 individual packages containing exempt quantities of byproduct material shall be contained in an outer package or sold or transferred in a single transaction to an exempt person. Does MSC's license to transfer byproduct material contain that restriction? If not, please explain and provide supporting documentation.

25. Is NRC Regulatory Guide 1.86 -- which the NRC is using to release surface-contaminated metal from decommissioned nuclear power plants -- a regulation under the Administrative Procedure Act? What force of law does it have? Please explain and provide supporting documentation.

26. Regulatory Guide 1.86 cites no statutory or regulatory authority for its implementation, but in its recent issue paper, the NRC stated that Regulatory Guide 1.86 was compliant with the case-by-case reviews for alternative disposal provided for under the Part 20 regulations. (*See* 64 Fed. Reg. 35090, 35092, 35095, June 30, 1999.) In the Atomic Energy Act and in the NRC's implementing regulations, "disposal" is defined as "isolation" of a radioactive waste. (*See e.g.*, 42 U.S.C. 2021h; 10 CFR 61.2; 62.2; and 110.2.)

Please explain under what authority the NRC classified the unrestricted release of byproduct material into interstate commerce as "disposal" providing "isolation" of

radioactive waste under the above-cited statute and regulations. Provide supporting documentation.

27. Is the MSC facility an NRC licensee undergoing decommissioning?

28. In 1986, the Congress ordered the NRC to "identify methods of the disposal of low-level radioactive waste other than shallow land burial, and establish and publish technical guidance regarding licensing" of those facilities. Technical requirements for those methods are outlined in the statute. They include "site suitability, site design, facility operation, disposal site closure, and environmental monitoring, as necessary to meet the performance objectives established by the Commission for a licensed low-level radioactive waste disposal facility." (42 U.S.C. 2021h.) (Emphasis added.)

    Please explain how the unrestricted release of byproduct material into interstate commerce as an alternative method of disposal meets the "performance objectives established by the Commission for a licensed low-level radioactive waste disposal facility" and provide supporting documentation.

29. The resulting NRC report on alternative methods of disposal was published in December 1986. Entitled "Licensing of Alternative Methods of Disposal of Low-Level Radioactive Waste"(NUREG-1241), the study began by stating that all "siting, design, operations, closure, and the monitoring criteria" of Subpart D (Technical Requirements for Land Disposal Facilities) of 10 CFR 61 (Licensing Requirements for Land Disposal of Radioactive Waste) should apply. Subpart D limits off-site releases of radioactive material to those which is released "to the general environment in ground water, surface water, air, soil, plants, or animals." (*See* 10 CFR 61.41.)

    Please explain how the unrestricted release of byproduct material into interstate commerce is an alternative method of disposal limiting off-site release of radioactive material to those contained "in ground water, surface water, air, soil, plants, or animals." Provide supporting documentation.

30. 10 CFR 20.2002 allows the NRC only to license alternative forms of "waste disposal." Please explain how unrestricted release qualifies as an alternative form of waste disposal, based on definition in the statute, regulations and NRC report cited in the previous questions. Provide supporting documentation.

31. The 1986 alternate method report reported on five types: below-ground vaults, above-ground vaults, earth-mounded concrete bunkers, mined cavities and augured holes and specifically refers to Subpart D, 10 CFR 61. Please explain how unrestricted release of byproduct material into interstate commerce compares with the criterial applied to these listed alternate methods of disposal and provide supporting documentation.

32. 10 CFR Part 20 covers all persons licensed by the Commission to "receive, possess, use, transfer, or dispose of byproduct . . . material . . . under Parts 30 through 35." (10 CFR 20.1002.) Is there any other section in Part 20 that exempts MSC from the requirements of Parts 30-35? If the answer is in the affirmative, please explain and provide supporting documentation.

33. 10 CFR 20.1302 allows for some radioactive material from the normal operations of a licensee to be released in gaseous and liquid effluents. At the boundary of the licensee's restricted area, these releases must meet certain standards. Effluent is most commonly defined as "waste material (as smoke, liquid industrial refuse, or sewage) discharged into the environment especially when serving as a pollutant." Does the NRC or the State of Tennessee have a different definition of "effluent" that would include products or commodities sold into interstate commerce? Please explain and provide supporting documentation.

34. In its recent issues paper, the NRC stated that although Part 20 provided for the release of air and liquid effluents from licensees' operations, it was "inconsistent" because it did not have a standard for a release of solid material, presumably as an effluent.

    Please explain how 6,000 tons of nickel to be sold into interstate commerce can be defined as a solid "effluent" emanating from a licensee's normal operations and released for natural dispersion at the boundary of the licensee's restricted area similar to the gaseous and liquid effluents. Provide supporting documentation.

35. In the same issues paper, the NRC stated that Part 20 does not have a provision for the release of solid material. This does not appear to be accurate, as 10 CFR 20.2003 allows for the disposal by release of "licensed material" into sewerage if it is "readily soluble" in water.

    Please state whether this provision allows solid material to be released under certain conditions and provide supporting documentation.

36. Please explain how, under Part 20, MSC would release its solid byproduct material at the boundary of its restricted area and how it will carry out the other provisions requiring monitoring of those releases for persons "continuously present" at the boundary of the licensee's restricted area. Provide supporting documentation.

37. In its contract with BNFL, the Department of Energy has described the contaminated nickel as "process equipment" that may be recycled and released as scrap metal by MSC, an NRC-licensed facility. (*See* East Tennessee Technology Part (ETTP) Three-Building Decontamination and Decommissioning (D&D) and Recycle Project Contract, August 25, 1997, Attachment A, pp. 23, 33-34.) Please explain how recycling and release as scrap metal qualifies as the disposal of waste. Provide supporting documentation.

38. Since 1992, has the NRC promulgated through the regulatory process under the Administrative Procedure Act an unrestricted release standard for solid material of any type that contains byproduct material in any form? If the answer is in the affirmative, please provide supporting documentation.

39. Based on the above response, has the NRC established a legally binding release standard for solid material of any type containing byproduct material in any other process? Please explain and provide supporting documentation.

40. If there are such release standards, under what statutory and/or regulatory authority did the NRC issue them?

41. Section 274(j)(1) of the Atomic Energy Act allows the Commission to terminate or suspend all or part of its agreement with a state if it finds that the state's program is not compliant with the statute. Section 274 (g) requires that radiation standards be "coordinated and compatible." (*See* 42 U.S.C. 2021 (g) and (j)(1).) In September of 1997, the NRC adopted its "Statement of Principles and Policy for the Agreement State Program Policy Statement on Adequacy and Compatibility of Agreement State Programs." It was published in the *Federal Register* after extensive public comment. (*See* 62 Fed. Reg. 46517, Sept. 3, 1997.)

Specifically, compatibility is defined in the policy as "program elements necessary to meet a larger nationwide interest in radiation protection generally limited to areas of regulation involving radiation protection standards and activities with significant transboundary implications." (*See* "The Commission Policy," Subsection III (B).) State radiation control programs are compatible only when they do "not create conflicts, duplications, gaps, or other conditions that would jeopardize an orderly pattern in the regulation of agreement material on a nationwide basis." (*See*"Compatibility," Subsection III (E).) State standards for release limits "should be essentially identical to those of the Commission, unless Federal statutes provide the State authority to adopt different standards." (*See* "Basic Radiation Protection Standards," Subsection III (E) (A).)

Several years ago the NRC attempted to establish a level of byproduct contamination "below regulatory concern" that would allow the release of solid byproduct material. In 1992, Congress ordered the NRC to halt that rulemaking. In June of this year, the NRC published in the *Federal Register* an issue paper on the release of solid materials at licensed facilities. In that paper, the Commission states that it "has no specific regulatory requirements regarding release of solid material," and that it wants "to establish a regulatory framework more consistent with existing NRC requirements on air and liquid releases."

(a) Are those accurate statements as of this date?

(b) How does the State of Tennessee have an "essentially identical" standard to one promulgated by the NRC for the release of solid material containing byproduct material when there is no standard? Please explain and provide supporting documentation.

42. Under the agreement state policy, radiation control programs should be based on a common regulatory philosophy including the common use of definitions and standards. "They should be not only effective and cooperatively implemented by NRC and the Agreement States, but also should provide uniformity and consistency in program areas having national significance."

Do the NRC, Tennessee and the other agreement states have common definitions for such words as "waste," "disposal," "effluent," "byproduct material," "transfer" and "release limits"? Please provide those definitions

43. This policy, under the authority of Section 274 (j)(1) of the Atomic Energy Act, requires that the NRC must consider suspending or terminating its agreement with agreement states if their release standards are not compatible with the NRC's and the other agreement states. Please describe the release standards for solid material containing byproduct material of the other agreement states and answer the following questions:

(a) Is it possible for any agreement state to set a completely different standard for the release of solid material containing byproduct material? Please explain and provide any supporting documentation.

(b) Is it possible for any or all other states to ban the import of MSC nickel released under the Tennessee license from entering their states? Please explain and provide any supporting documentation.

(c) Would such actions by other states in response to Tennessee's setting of a standard for the unrestricted release of byproduct material "create conflicts, duplications, gaps, or other conditions that would jeopardize an orderly pattern in the regulation of agreement material on a nationwide basis"? If the answer is in the negative, please explain why different state standards for release "create conflicts, duplications, gaps, or other conditions that would jeopardize an orderly pattern in the regulation of agreement material on a nationwide basis."

44. The agreement state policy also requires that "Regulations and regulatory decisions should be based on assessments of the best available information from affected and interested individuals and organizations, as well as on the best available knowledge from research and operational experience. . . . The public should have an opportunity for early involvement in significant regulatory program decisions." (Subsection C (1) .)

By everyone's evaluation, the unrestricted release of 6,000 tons of byproduct material into interstate commerce is a "significant regulatory program decision." The public received no notice or the opportunity to comment on the MSC license amendment. Is this in keeping with the policy statement cited above? Please explain.

45. Under this policy the agreement states are required to provide the NRC with information about their regulations and license conditions. When and how did the NRC receive information concerning the MSC license amendment?

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U.S. House of Representatives
Committee on Commerce
Room 2125, Rayburn House Office Building
Washington, DC 20515–6115

October 25, 1999

MEMORANDUM

TO: The Honorable John D. Dingell, Ranking Member
Committee on Commerce

The Honorable Ron Klink, Ranking Member
Subcommittee on Oversight and Investigations

The Honorable Edward Markey, Ranking Member
Subcommittee on Telecommunications, Trade, and Consumer Protection

FROM: Commerce Committee Democratic Staff

SUBJECT: Tennessee's Lack of Authority under Section 274 (b) of the Atomic Energy Act to License the Unrestricted Release of Radioactive Byproduct Material

Summary

In March of 1999, the State of Tennessee approved a license amendment for Manufacturing Sciences Corporation (MSC) permitted the unrestricted sale of 6,000 of nickel metal contaminated with technitium, a radioactive byproduct of the process of producing or utilizing special nuclear material. The contaminated nickel resulted from the uranium enrichment process carried out at the Oak Ridge gaseous diffusion plant by the Department of Energy (DOE). MSC believes that it has a process that will reduce the amount of byproduct contamination in the nickel, but it cannot eliminate it.

Agreement states of the Nuclear Regulatory Commission (NRC) are prohibited from licensing the unrestricted release for general use of any quantities of radioactive byproduct material by the Commission's regulations as published in 10 CFR 150.15 and 10 CFR Parts 30. These regulations are completely in keeping with the policies set long ago by the Atomic Energy Act, the Congress, and the Nuclear Regulatory Commission to tightly control the use of byproduct material and keep it out of interstate commerce except by specific NRC license.

Since the NRC first promulgated its regulations in 1962 setting out agreement states' authority to regulate some aspects of byproduct material use and disposal, the Commission has reserved for itself -- and denied to the states -- the authority to license, or exempt from licensing, the transfer of possession or control over any "equipment, device, commodity or other product containing source, byproduct or special nuclear material that could be "distribut[ed] to the general public." (10 CFR 30.3.) The reason was clearly stated:

> The uncontrolled distribution of atomic materials in products designed for distribution to the general public, such as consumer type devices and the ultimate uncontrolled release of these materials into the environment, involve questions of national policy which have not yet been resolved. It is for this reason that the Commission is retaining control over such products. (21 Fed. Reg. 1351, Feb. 14, 1962.[1])

The resulting rule specifically imposed Commission licensing requirements on the following activity:

> The transfer of possession or control by the manufacturer, processor, or producer of any equipment, device, commodity, or other product containing source, byproduct, or special nuclear material, intended for use by the general public. (10 CFR Part 150.15 (a)(6) (1962 version).)

Those national policy questions have not been settled to this day, and the regulations remain basically as they were first written with some clarifying changes that expanded further the NRC's control. Tennessee's agreement with the NRC incorporates the ban against state licensing of the release of byproduct material to exempt purposes. Article III, Agreement between Atomic Energy Commission and the State of Tennessee, Aug. 21, 1965.

In 1969, the Commission deleted "for use by the general public" because of difficulties in definition. It was replaced by "all other exempted persons," an even broader definition of prohibited transferees. Currently, persons in agreement states are not exempt from the Commission's licensing or regulatory requirements for the following activities:

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[1]The prior history of the Atomic Energy Commission's and the NRC's refusal to allow any other party to transfer byproduct material to exempt persons is well discussed in 21 Fed. Reg. 16 (Jan 11, 1956); 23 Fed Reg. 8428 (Oct. 31, 1958); 26 Fed. Reg. 7886 (Aug. 2, 1961; and 26 Fed. Reg. 9174-76 (Sept. 29, 2961)). The last of these published prior to the 1962 rule prohibiting state control over byproduct material sales and transfers to exempt persons stated that the Commission needed to consider "whether continued Federal control over such products is needed to assure that appropriate limits are maintained on the total quantity of atomic energy material entering into our general environment." It determined that such control was necessary, a ruling that has not been revoked.

(a)(6) The transfer of possession or control by the manufacturer, processor, or producer of any equipment, device, commodity, or other product containing source material or byproduct material whose subsequent possession, use, transfer, and disposal by all other persons are exempted from licensing and regulatory requirements . . . . (10 CFR Part 150.15.) (Emphasis added)

In 1992, the Commission attempted to set standards of contamination that would be "below regulatory concern" and, therefore, allow the unrestricted release of the contaminated material. As the NRC recognized, there was such tremendous public opposition that the Congress ordered in the Energy Policy Act of 1992 that the rulemaking be halted. (*See* 64 Fed. Reg. 35094.)

In short, it appears that Tennessee cannot license MSC transfer a commodity or product (nickel) containing byproduct material (technetium) to a person exempt from NRC or agreement state licensing authority without a specific license to do so from the NRC itself. Under these regulations, MSC is therefore barred from selling the nickel to a scrap dealer, for example, or a mini-mill, or any other party without an NRC license. The Commission may obtain an injunction to prevent such a violation, and there are criminal penalties for "willful violations" of these regulations. (*See* 10 CFR 30.63-64.)

The NRC's regulations for a license to release any quantity of byproduct material to unlicensed recipient are extensive and strict as described in more detail below. The most important restriction is that the byproduct material must be used for its radioactive qualities. There are specific requirements for each device incorporating byproduct material. Warning labeling requirements are often required. For licensees who sell individual, otherwise exempt quantities byproduct material in a bulk form, such as in processed chemical elements, to exempt persons, the byproduct material must be used for its "radioactive properties" and cannot be incorporated into any "commodity . . . intended for commercial distribution." Each exempt quantity must contain a label stating that it is radioactive, not for human use or to be introduced into "Products Manufactured for Commercial Distribution." (*See* 10 CFR 30.18 and 32.18-19.)

The MSC license on its face violates these regulations. The byproduct material in the bulk nickel is not being used for its radioactive properties; it is a contaminant that cannot be removed. And, MSC's publicly stated intent is to sell this contaminated bulk nickel specifically for its incorporation into products manufactured for commercial distribution, some of which will be designed for human use and application, and others which will contain food and beverages. All of these actions are in direct violation of the NRC's regulations.

NRC's Licensing and Labeling Requirements

NRC's licenses for the unrestricted release of byproduct material are governed by the very stringent regulations in 10 CFR Parts 30-35. These regulations govern the actions of both the

NRC and its agreement states. From their initial publication, Part 30-35 regulations have concentrated on establishing exempt products, product specifications, requirements for testing and labeling and restrictions on use for products available to the public consumer. (*See* 27 Fed. Reg. 1351.) This has not changed to the present time. Except for specifically identified devices produced under a separate NRC license, (*see, e.g*, 10 CFR Part 31), almost all transfers of byproduct material into general commerce are banned without a license from the NRC itself.

For any owner or possessor of a product containing byproduct material to be exempt from the licensing requirements for the transfer of byproduct material under Part 30, that material in the product to be transferred must be in concentrations less than specified <u>and</u> "introduced into the product or material by a licensee holding a specific license issued by an agreement State, the Commission or the Atomic Energy Commission expressly authorizing such introduction." (*See* 10 CFR 30.14.) Moreover, this exemption specifically does not authorize "for purposes of commercial distribution the production, packaging, repackaging, or transfer or byproduct material or the incorporation of byproduct material into products intended for commercial distribution." And no person may transfer materials in certain individual quantities (which we believe the nickel will meet) "knowing or having reason to believe that such quantities of byproduct material will be transferred to persons exempt . . . except in accordance with a license issued under [Sec.] 32.18 . . . which license states that the byproduct material may be transferred by the licensee to persons exempt. . . ." (*See* 10 CFR 30.18.)

It does not appear that MSC can meet any of these requirements. Byproduct material was not introduced into its product by a licensee with specific authorization to do so, but was the actual result of the process of producing or utilizing special nuclear material. It is intending that its product be commercially distributed, and it knows that the byproduct material will be transferred to persons exempt, *i.e.*, scrap dealers, steel mills, manufacturers and, ultimately, the general public. Therefore, MSC requires a specific license under 10 CFR 32.18 to transfer its material to exempt persons.

However, there is no evidence that MSC has a license for the release of this material to exempt persons under 10 CFR 32.18. This part contains several requirements that MSC cannot meet:

> (1) The byproduct material cannot be contained in any commodity designed for application to a human being. *We know that some of the potential uses of the nickel are for devices that are applied to human beings, such as orthodontic braces and intra-uterine devices.*
>
> (2) The byproduct material must be in the form of processed chemical elements, compounds, or mixtures, tissue samples, bioassay samples, counting standards, plated or encapsulated sources or similar substances, "<u>identified as radioactive and to be used for its radioactive properties, but is not incorporated into any manufactured or assembled commodity, product, or device intended for</u>

commercial distribution." (Emphasis added.) *The MSC byproduct nickel does not meet any of these requirements. It will not be in the proper form; it will not be identified as radioactive; it will not be used for its radioactive properties; and it will be incorporated into a commodity intended for commercial distribution.*

(3) The applicant must submit, and the NRC approve prototype labels and brochures for each container which include the following statements: (a) the material is exempt from licensing; (b) the label will bear these specific words: "Radioactive Material -- Not for Human Use -- Introduction Into Foods, Beverages, Cosmetics, Drugs, or Medicinals, or Into Products Manufactured for Commercial Distribution is Prohibited -- Exempt Quantities Should Not be Combined"; and (c) set forth appropriate additional radiation safety precautions and instructions about handling, use, storage, and disposal of the radioactive material. (*See* 10 CFR 32.18-19.) *Again, MSC's license from Tennessee includes none of these labeling requirements, although its product is intended for commercial distribution and its use in steel containers for food and beverages is anticipated.*

Part 32 also includes provisions for specific licenses to manufacture certain items containing byproduct material, such as self-luminous devices, radioactive drugs, gas and aerosol detectors and certain consumer products listed in 10 CFR 30.15.

Therefore, it appears all persons who add byproduct material -- no matter how much or how little -- to a product intended for unrestricted use by exempt persons are subject to the NRC's licensing requirements. This provision appears to include not only MSC, but anyone who ultimately uses DOE's contaminated nickel to manufacture commercial products.

It appears then that both individually and when read as a whole, the NRC's regulations ban all unrestricted transfers of any amount of byproduct material from a licensee to persons exempt from licensing without a specific license from the NRC itself. Those specific licenses are narrow and require many additional steps to be taken to protect the ultimate consumer.

Unrestricted Release of Byproduct Material as a Form of "Waste Disposal" or "Effluent Release" from the "Routine Activities" of an NRC Licensee

It appears more and more likely that both the NRC and Tennessee are attempting to avoid the stringent licensing restrictions of Parts 30-35 by determining that MSC's sale of nickel contaminated with technetium is a form of "waste disposal" under 10 CFR Part 20 (Standards for Protection against Radiation), Subpart K (Waste Disposal) or, in the alternative, is a solid "effluent" emitted during the plant's operations to the nearby public similar to gaseous and liquid effluents released into unrestricted areas by the plant. (*See, e.g*, 10 CFR 20.1302.)

When the major rewriting of Part 20 was begun in 1986, its stated purpose was to "provide the requirements for the protection of individuals who are exposed, both within and without of the workplace, to ionizing radiation from routine activities (normal operations) which are licensed by the NRC." (*See* 51 Fed. Reg. 1092, Jan. 9, 1989.) (Emphasis added.) It set worker exposures, public exposure limits from gaseous and liquid effluents released from the licensee's boundaries into unrestricted areas, and waste disposal. Part 20 governs all licensees, including those under Parts 30-35. It did not govern the deliberate production and/or release of radioactive material into interstate commerce for general use nor supersede those regulations. Not a single mention of such a purpose is made in the hundred-plus pages of the proposed rule.

Nonetheless, the NRC's recent issue paper, which it has published as a precedent to a rulemaking that would allow the unrestricted release of radioactively contaminated materials into interstate commerce, indicates that it is only proposing another "radiation protection" standard under 10 CFR Part 20 that set a release standard from a licensed facility for solid effluents similar to those for gaseous and liquid effluents. (*See* 64 CFR 35090, June 30, 1999.) If so, this will mark the first time in environmental history that tons of processed metal ingots are referred to as "effluent."[2]

There are numerous statutory and regulatory hurdles to these interpretations that require the acceptance of extremely creative legal theories and some leaps of legal faith. Additionally, the contaminated nickel is not a waste resulting from MSC's "routine activities." MSC's waste is whatever contaminants it manages to remove from DOE's nickel by its own clean-up process. As is stated in the BNFL contract with the Department of Energy, MSC is to take DOE's contaminated waste nickel, process it and attempt to get a license to sell it. (*See* East Tennessee Technology Part (ETTP) Three-Building Decontamination and Decommissioning (D&D) and Recycle Project Contract, August 25, 1997, Attachment A (hereafter "BNFL Contract, Attachment A"), pp. 22-3, 33, 37.)

Unrestricted Release of Byproduct Material as "Waste Disposal"

As stated above, Part 20 of NRC's regulations do not contemplate that a company that processes and partially cleans radioactively contaminated materials for unrestricted sale into interstate commerce is "disposing" of waste generated in its routine operations. The contract between BNFL and the Department of Energy does not describe the nickel resulting from the melting and processing of the barriers used in enrichment as waste. It describes it as "process equipment" which it is encouraged to recycle to "promote waste minimization." "Disposal" is described as another "dispositioning option." MSC will produce other wastes resulting from the use of its clean-up technology in its routine licensed operations. The Energy Department's

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[2]According to Webster's Dictionary, "effluent" comes from the "effluvium", the Latin word for the act of flowing out. It is defined as "waste material (as smoke, liquid industrial refuse, or sewage) discharged into the environment esp. when serving as a pollutant."

contract with BNFL describes these wastes in detail. They include "[a]ll radiological and chemical wastes generated as a result of metal processing beyond the primary melt." (*See* BNFL Contract, Attachment A, pp. 22-3, 33, 37.)

Low-level radioactive wastes are to be disposed of pursuant to 10 CFR Part 20. The Atomic Energy Act defines *disposal* as:

> "the permanent *isolation* of low-level radioactive waste pursuant to the requirements established by the Nuclear Regulatory Commission under applicable laws, or by an Agreement state if such *isolation* occurs in such agreement State." (42 U.S.C. 2021b (7) .) (Emphasis added.)

10 CFR 61 (Licensing Requirements for Land Disposal of Radioactive Waste), defines disposal as:

> ". . . [T]he *isolation* of radioactive wastes from the biosphere inhabited by man and containing his food chains by emplacement in a land disposal site." (10 CFR 61.2.) (Emphasis added.)

Elsewhere in the NRC regulations, disposal has similar meanings. It is defined as: "the *permanent isolation* of low-level radioactive waste pursuant to requirements established by the Nuclear Regulatory Commission under applicable laws, or by an Agreement State <u>if such isolation occurs in this Agreement State</u>. (10 CFR 62.2.) (Emphasis added.); and "*permanent isolation* of radioactive material from the surrounding environment" (10 CFR 110.2.). (Emphasis added.)

10 CFR Part 20, Subpart K (Waste Disposal) does not contain a new, more expansive definition of disposal but further reinforces the standard definition of isolation. Subpart K's specified methods of disposal allow licensees to dispose of radioactive waste by 1) transfer to an authorized recipient; 2) decay in storage; 3) release in liquid and gaseous effluents under NRC; release into sanitary sewers for small amounts of "readily soluble" material under certain limited condition; and treatment or disposal by incineration -- again under restrictive circumstances. An authorized recipient is defined as someone "specifically licensed to receive waste containing licensed material" for treatment prior to disposal; treatment or disposal by incineration; decay in storage or disposal. (*See* 10 CFR 20.2001-2005.)

Clearly, what Tennessee contemplated in the MSC license amendment was not "isolation" of any sort. Nor does Part 20 exempt licenses from the requirements of Parts 30-35 concerning release of byproduct material for use by exempt persons. (*See* 10 CFR 20.1002 (Scope).)

10 CFR 20.2002 ("Method for obtaining approval of proposed disposal procedures") does allow licensees to apply to use a method of disposal of radioactive waste not otherwise specified

-- and some incineration methods must be authorized under Part 20 (*see* 10 CFR 20.2004), but again it does not change the statutory definition of "disposal" as "*permanent isolation*." This section was not set up as a loophole for the commercial release of byproduct material.

The NRC has been studying alternative disposal methods since at least 1981. These have included mined cavity disposal, below-ground vaults, above-ground vaults, earth-mounted concrete bunkers, deep-well injection and hydrofraction, among others. In 1986, Congress ordered the NRC to "identify methods of the disposal of low-level radioactive waste other than shallow land burial, and establish and publish technical guidance regarding licensing" of those facilities. Technical requirements that such facilities must meet include "site suitability, site design, facility operation, disposal site closure, and environmental monitoring, as necessary to meet the performance objectives established by the Commission for a licensed low-level radioactive waste disposal facility." (42 U.S.C. 2021h.) (Emphasis added.)

Those alternative methods of disposal were identified in December of 1986 in a publication entitled "Licensing of Alternative Methods of Disposal of Low-Level Radioactive Waste," NUREG-1241. The study began by stating that all "siting, design, operations, closure, and the monitoring criteria of Subpart D (Technical Requirements for Land Disposal Facilities) of 1 CFR 61 (Licensing Requirements for Land Disposal of Radioactive Waste) should apply. Off-site releases of radioactive material are limited to those which is released "to the general environment in ground water, surface water, air, soil, plants, or animals." (10 CFR 61.41.) Once again, unrestricted release into interstate commerce for commercial use is not sanctioned.

The NRC's Regulatory Guide 1.86, under which it has been releasing metals and other materials that are surface-contaminated into interstate commerce, is alleged to be issued under the authority of 10 CFR 20.2002. Based on the above statutory provisions, regulations and guidance, that appears to be an improper use of that section. 10 CFR 20.2002 requires that the "proposed manner and conditions of waste disposal" be described. It does not provide that the waste so disposed of is exempted from disposal requirements and thus miraculously avoids the licensing requirements for release of byproduct material to exempt persons.

The NRC can exempt its licensees from the requirements of Part 20 "if it determines the exemption is authorized by law and would not result in undue hazard to life or property." (10 CFR 20.2301.) It does not appear that this provision has been used or this determination has been made. The steel industry, for example, was not allowed to address potential damage to its property from this release. It has indicated that the inclusion of a steady stream of even slightly contaminated metals into their steel plants can accumulate to the point where their entire facilities are contaminated. The clean up and the subsequent loss of confidence of their customers could cost them billions of dollars.

Unrestricted Release of Byproduct Material as a "Solid Material Effluent"

In its issues paper entitled "Release of Solid Materials at Licensed Facilities," published on June 30, 1999 (64 Fed. Reg. 35090), the NRC takes the intriguing position that it needed to repair the Part 20 regulatory "inconsistencies" because it does not provide for the release of "solid materials" as it does for gaseous and liquid effluents generated from the normal operations of a licensee. "Effluent" is most commonly defined as "waste material (as smoke, liquid industrial refuse, or sewage) discharged into the environment especially when serving as a pollutant." (Webster's Dictionary.) Part 20 does not revise this common meaning. The gaseous and liquid effluents allowed for release in Part 20, are those that are released as a pollutant from an operating facility off-site into the nearby environment.

It does not appear that the NRC desires to be so consistent with these regulations that it plans to also provide for the release of "solid effluents" into the nearby environment to sit there waiting for dissipation through some as-yet-undefined natural process.

An even closer reading of Part 20 uncovers that there already is a provision for the disposal of certain small amounts of solid waste into the environment – just as there is for certain small amounts of gaseous and liquid waste – and no need for a change to achieve "consistency." 10 CFR 20.2003 allows the release of "readily soluble" licensed material into sanitary sewers if it does not exceed certain amounts. For some reason, this provision does not satisfy the NRC.

It appears that both individually and in their entirety, the NRC's regulations ban all unrestricted transfers of any amount of byproduct material from a licensee to persons exempt from licensing without a specific license from the NRC itself. Additionally, we have found nothing in the regulations that indicate that "disposal" of byproduct material is to be interpreted so broadly that unrestricted release into commerce is accepted form of "disposal."

Tennessee's Lack of Compatibility with NRC Regulations and Standards

It also appears that the State of Tennessee is taking actions incompatible with the NRC's regulations and standards that require the NRC to consider suspending or terminating its agreement with Tennessee.

In September of 1997, the NRC adopted its "Statement of Principles and Policy for the Agreement State Program Policy Statement on Adequacy and Compatibility of Agreement State Programs," hereafter "Agreement State Policy." It was published in the *Federal Register* after extensive public comment "to assure adequate protection of public health and safety." (*See* 62 Fed. Reg. 46517, Sept. 3, 1997.)

This policy requires that the NRC must consider suspending or terminating its agreement with the State of Tennessee because one of the three elements in Tennessee's program that must be compatible with the NRC's and the other Agreement States' program is not. The incompatibility results from the establishment by the State of Tennessee of radiation protection standards for the release of solid material volumetrically contaminated with technitium, a byproduct material. The NRC has not promulgated any regulations for such releases. This compatibility is required by Section 274j(1) of the Atomic Energy Act and cited at length in the policy statement. (*See* "Comment Summary," Subsection III (A).)

Specifically, compatibility is defined as "program elements necessary to meet a larger nationwide interest in radiation protection generally limited to areas of regulation involving radiation protection standards and activities with significant transboundary implications." (*See* "The Commission Policy," Subsection III (B).) State radiation control programs are compatible only when they do "not create conflicts, duplications, gaps, or other conditions that would jeopardize an orderly pattern in the regulation of agreement material on a nationwide basis." (*See* "Compatibility," Subsection III (E).) State standards for release limits "should be essentially identical to those of the Commission, unless Federal statutes provide the State authority to adopt different standards." (*See* "Basic Radiation Protection Standards," Subsection III (E) (A).) Since the NRC has set no release standard in this area and is in the process of beginning a rulemaking to consider those release standards, Tennessee cannot establish a standard in an individual license amendment.

Additionally, the Agreement States are required to provided a level of protection in its program elements, including standards, that "should be equivalent to, or greater than, the level provided by the NRC program." However, under the compatibility requirement, matters of health and safety are not to be considered. Those come under a different category. (*See* NRC, "Transmittal of Directive 5.9, Adequacy and Compatibility of Agreement State Programs.")

One of the objectives of Directive 5.9 was to "identify Commission regulations and program elements that must be implemented as legally binding requirements by an Agreement State to maintain a program that is . . . compatible with NRC's regulatory program. (*See* Directive 5.9, Objectives.)

One of the principles that pervades this statement is that "Regulations and regulatory decisions should be based on assessments of the best available information from affected and interested individuals and organizations, as well as on the best available knowledge from research and operational experience. . . . The public should have an opportunity for early involvement in significant regulatory program decisions." (Subsection C (1).) (Emphasis added.) Additionally, NRC and the agreement states have the responsibility to ensure that consistent and compatible radiation control programs are administered. Such radiation control programs should be based on a common regulatory philosophy including the common use of definitions and standards. They should be not only effective and cooperatively implemented by NRC and the

Agreement States, but also should provide uniformity and consistency in program areas having national significance.

> Such areas include those affecting interstate commerce . . . (Subsection C(4).) (Emphasis added.)

During the public comment period for this policy, one state specifically commented that it did not believe that Section 274 of the Atomic Energy Act required compatibility of programs or program elements except for requirements under the Uranium Mill Tailings Radiation Act. The policy specifically rejected that comment, stating that:

> It is the Commission's view that, pursuant to Section 274, an Agreement State's program should be compatible with the NRC's program for the duration of the Agreement for the following reasons:
>
> Subsection 274(g) authorizes and directs the Commission to cooperate with the States in the formulation of radiation protection standards "to assure that the State and Commission programs for the protection against hazards of radiation will be coordinated and compatible . . .
>
> Subsection 274(j)(1) calls on the Commission to suspend or terminate an Agreement State's program if "the state has not complied with one or more of the requirements" of the Section 274. The Commission believes that this phrase "one or more of the requirement," encompasses all requirements of Section 274, including the requirement for compatibility. ("Policy Statement, III. Policy Statement on Adequacy and Compatibility of Agreement State Programs," Subsection A.)

A second principle is that the NRC expects the Agreement states to "provide it with early and substantive involvement in the development of new Suggested State Regulations. NRC and Agreement States will keep each other informed about their individual regulatory requirements (e.g., regulations or license conditions). ("Policy State, II. Statement of Principles and Policy for the Agreement State Program," Subsection J.) NRC staff told Committee staff that they were totally unaware of Tennessee's actions until they received a letter from Reps. Dingell and Klink in August.

Nonetheless, in March of this year, without public notice or input, Tennessee, an NRC agreement state, established its own standard for the unrestricted release of metal contaminated with two radioactive isotopes, uranium and technetium-99.

The Commission apparently thought this to be a "program area having national significance" in the past as it attempted previously to set a national standard, but it failed because of widespread public opposition. As a result, neither the NRC nor any of its agreement states

have attempted to license on-going releases of such material. In fact, the NRC just began the pre-rulemaking process again by conducting public hearings to discuss setting a standard.