The

Radioactive Exchange[®]

To promote the exchange of views and information on radioactive waste management

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Volume 5 No. 5

ENVIRONMENTAL GROUPS, STATES, FILE BRIEFS, CHALLENGING EPA HLW RULE

On Thursday, March 27, a coalition of environmental groups, including the Natural Resources Defense Council and the Environmental Policy Institute, and the States of Texas, Minnesota, Maine and Vermont filed briefs in the United States Court of Appeals for the First Circuit in support of their challenge to the Final High-Level Waste Standard issued by the Environmental Protection Agency (EPA). Texas and Minnesota both filed separately while the states of Maine and Vermont filed with the environmental coalition. Texas arguments are basically dealing with procedural matters, while the other briefs raise several substantive issues. Most all are related either to the "special sources of groundwater" and the general groundwater provisions included in the standard.

The Environmental Group Brief

The Brief jointly filed by the NRDC, EPI, the Conservation Law Foundation of New England and the states of Maine and Vermont argue that:

-- the groundwater and individual pro-(See P-A in the HLW Focus)

March 31, 1986

JOINT HEARINGS ON MIXED WASTE ATTRACTS KEY SENATE LEADERS

Mixed-waste may constitute only a small portion of the volumes of waste generated in the U.S. but the lack of a consistent regulatory scheme is definitely attracting significant Senate attention. Attending the March 25 hearing on the issue convened by Senate Environmental and Public Works Subcommittees on Nuclear Regulation and Environmental Pollution, were Senator Stafford, who Chairs the full Committee, Senator Simpson, Chair of the Nuclear Regulation Subcommittee and Senator Domenici who, among other responsibilities, Chairs the Budget Committee. In addition Senator Glenn was the lead witness offering testimony strongly urging that RCRA regulations apply to mixed waste generated at DOE facilities and calling for passage of his bill, S 892, that would meet this objective.

The high level of attention did not, however, evoke any new initiatives from representatives of DOE, NRC or EPA regarding resolution of the current jurisdictional conflict. (See Mixed Waste pg. 2)

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(Mixed Waste from pg. 1)

In fact, DOE drew the ire of Chairman Simpson by sending Mr. John R. Barker of DOE's Office of Environmental Audit and Compliance to the hearing rather than the newly appointed Assistant Secretary for the Environment, Mary Walker.

The other federal witnesses participating were John Davis, Director of NRC's Office of Nuclear Material and Safeguards, accompanied by Bob Browning, Director of the Waste Division, and Marcia Williams, Director of EPA's Office of Solid Waste.

Glenn Opposes By-product Redefinition

In his testimony recommending that the Senate Committee Act to have RCRA apply to mixed waste generated at DOE facilities, the Ohio Senator emphasized that "in [his] view...it is not an exaggeration to say that the environmental problems at our DOE nuclear weapons production facilities have reached the dimension of a national scandal." He recognized Secretary Herrington's recent initiatives to address the problem (EXCHANGE, Vol. 5, No. 4), but added there were no shortcuts, and mitigation of the results of DOE action will take "billions of dollars."

In addition to requesting that the Committee act to support his legislation, he called specific attention to DOE's proposed redefinition of by-product material issued in November of '85. In this proposed redefinition DOE introduced the concept of "direct process wastes" and "indirect process waste." "Direct process wastes" would be those wastes which are "direct, necessary and an inherent consequence of the process of producing and utilizing special nuclear material," and would be included in the Atomic Energy Act (AEA) ''Indefinition of by-product material. direct process waste," wherein the contained radioactivity is a indirect consequence of the process of producing special nuclear material, would include wastes that would contain by-product material and hazardous waste. The byproduct portion of this "indirect process waste" would fall under AEA jurisdiction, the hazardous portion under RCRA.

He emphasized that this redefinition would, if made final, allow LLRW to be classified as a by-product material even though most of the "waste may be composed of hazardous waste constituents." He stated his adamant opposition to this proposal, reminding the Committee that NRC has stated that the proposed redefinition "would effectively remove from NRC and Agreement State jurisdiction the disposal of wastes with significant radiological hazards that have heretofore been under [their] regulatory control."

He concluded his statement by calling for the application of RCRA "to all mixed waste except where there are 'deminimus' quantities of non-radiological hazardous material," and the passage of his legislation.

EPA, NRC, DOE Statements

The testimony and responses to questions raised by the attending Senators, provided by the respective federal agency representatives, were about what was expected (or There was at least one "surprise." less). EPA's Marcia Williams remarked that "locational" siting standards for or facilities accepting hazardous waste for disposal may not be completed until the 1990's. In reported discussions held last week on the "Hill", EPA staff was saying such siting regulations would be available by 1988 (See EXCHANGE, Vol. 5, No. 4).

Though not quite a surprise, NRC John Davis, for the first time in public revealed that NRC staff "no longer supports any of the previous legislative approaches [to resolving the jurisdictional conflict] while seeking to reach a technical solution in coordination with EPA."

According to earlier reports (EXCHANGE, Vol. 5, No. 4), one of the technical options being considered is prohibiting the disposal of mixed waste at LLRW disposal sites.

On other issues of interest the federal representatives took the following positions:

DOE's Mixed Waste & By-product Definition As stated above Senator Glenn made the Committee aware of NRC's arguments against the new definition and EPA expressed it's disagreement with the DOE proposal. Tn response to a question from the Chair regarding Senator Glenn's legislation that would require that RCRA apply to wastes generated at DOE facilities, Mr. Barker from DOE replied that the Department had taken no position on the bill. In her statement Ms. Williams explained that EPA is working with DOE to develop "a regulatory variance to waive RCRA rules [with regard to their application for mixed wastes] when compliance would cause a net increase in risk." This concept, she remarked, is also being explored as a possible way of addressing regulatory conflicts over mixed wastes at NRC-licensed facilities. She expressed the view that current NRC, DOE and EPA conflicts over the proposed "by-product" definition can be resolved.

Commercial Mixed Waste NRC and EPA agreed that the jurisdictional conflict over mixed waste needed to be resolved. EPA and NRC both called for legislation to address the issue but, as noted previously, NRC backed away from "earlier proposed 'egislative approaches." EPA's Marcia Williams did present two options to resolve the conflict: (1) to set up a regulatory scheme that would assign each of the three agencies, DOE, NRC and EPA jurisdiction over specific waste streams based on the primary concern about the waste stream; and (2) continue to allow multiple jurisdiction but "enable delegation of permitting and enforcement to one agency and provide for that agency, in turn, to delegate to implementation to the States." With respect to the first option, the EPA Office Director pointed out that it would be difficult to decide on the criteria upon which jurisdiction would be assigned, and also added that because RCRA is dynamic program, this approach could require "a waste stream evaluation each time there is a new RCRA hazardous waste characteristic or waste listing." Ms. Williams explained that the second option could be accomplished by either delegating RCRA permitting to NRC, or delegating AEA licensing to EPA. The choice of delegation would be based on the orimary concern with the waste stream. Both options, and either delegation would require new legislation.

NRC has not expressed support for either option because of the late date, 1988-1990, that EPA expects to release siting or "locational" standards for sites accepting waste streams which include hazardous materials. So, even if the NRC was delegated RCRA permitting authority, the necessary regulations would not be ready until that late date. This would mean that states required to develop disposal sites under the Low-Level Radioactive Waste Policy Amendments Act of 1985 (LLRWPAA) would not be able to set site criteria in order to develop a site to meet the Act's milestones.

NARM Waste Ms. Williams stated that the disposal of NARM waste could not be resolved current authorities. under Noting that the primary concern of NARM waste is radioactivity, she explained that the logical disposal site for this waste "is at an NRC-licensed facility." However, since NRC under the AEA has no current. regulatory authority over NARM waste, it does fall under RCRA regulation. To resolve this dilemma would require legislation that would either allow EPA to grant a waiver for NARM waste or amend the AEA to include NARM.

Current Regulation EPA and NRC both agreed that no health and safety problems have been discovered at the three currently operating facilities where "mixed waste" has been accepted for disposal. EPA's Williams remarked that incineration seems like an appropriate option for scintillation vials.

State, Industry, Environmental Viewpoints

The second panel of witnesses to address the Committee Chairmen included, US Ecology President Jerry Scoville; Executive Director of the Rocky Mountain Compact Len Slosky; Sherman Naymark, Chairman of Quadrex Corp.; and, Dr. Richard Reba, representing the Society of Nuclear Medicine and the American College of Nuclear Physicians.

US Ecology's Jerry Scoville, who tried in

vain to get Congress to act on resolving the jurisdictional conflict within the context of the LLRWPAA, plainly stated that in his view not a lot could be done until mixed waste was clearly defined. He reemphasized his Company's position that NRC should be vested with the authority to regulate all radioactive wastes, including NARM wastes, and that they be delegated the permitting authority to regulate mixed wastes.

Dr. Reba explained that because none of the three operating disposal facilities currently accept scintillation vials, the medical community is now dependent on one facility -- the Quadrex plant -- for the treatment and disposal of a majority of this waste. Emphasizing that this has put the medical community in a vulnerable position, he also urged that the conflict be resolved by having NRC designated as the lead agency.

Dr. Naymark explained that Quadrex's facility is currently accepting most of the medical community's scintillation vial waste and could accommodate an increase of 50% over what it is now processing. He remarked that his company's process "is an ecologically sound one...no radioactivity and toxicity need be buried... thus avoiding the "mixed waste burial dilemma."

David Berick of the Environmental Policy Institute expressed support for Senator Glenn's bill requiring that RCRA be applied to DOE facility waste streams. In his view the problem over the regulation of mixed waste was not with the current laws, but the way they were being implemented. He supported the "retention of dual authority," and urged that both agencies develop regulations to segregate mixed waste and develop specific mixed waste regulations.

Len Slosky, representing the Rocky Mountain Compact and the State of Colorado, expressed opposition to DOE's proposed byproduct definition and support for Senator Glenn's legislation. He explained the Mountain Board's solution to Rocky resolving the NRC-EPA jurisdictional conflict:

o EPA should be required to promulgate

performance standards for low-level radioactive waste facilities which are consistent with 10 CFR 61.

- There should be a consolidated permitting process which applies both NRC and EPA standards. NRC (or the appropriate agency of an Agreement state) should be the lead permitting agency.
- o State authorities over low-level radioactive waste facilities should not be preempted.

When each of these witnesses was asked whether they would support the prohibition of the disposal of mixed waste at LLRW disposal sites, each responded with a polite "no." Len Slosky pointed out that if this occurred, it would probably require the development of a second LLRW disposal site in his region.

The Brookhaven Report

Another interesting aspect of this hearing the inquiry by Senator Simpson was regarding the validity of the "Brookhaven Report" (NUREG/CR-4406) which established the volume of mixed waste as somewhere around three percent. Every witness testifying was asked to give their view of this report, as if to establish it as a possible basis on which to proceed toward some resolution of the problem. Except for Jerry Scoville, the witnesses were generally of the view that the report was a good start but not an exhaustive compilation of what mixed waste was being generated. EPI's David Berick expressed his reservations about any report that was based on a survey of generators. US Ecology President Jerry Scoville remarked that accurate information could not be obtained until everyone agreed upon a definition of LLRW.

Next Step?

The hearing ended with little indication of the next step. Staffers remarked that the prohibition against mixed waste at LLRW burial facilities will continue to be explored. The next Congressional inquiry will occur on April 10 with a joint hearing convened by the relevant subcommittees of the House Commerce Committee. However, this session will only cover the DOE and mixed waste issue. ******

ORNL STUDY IDENTIFIES LONG-RANGE R&D AGENDA FOR LLRW MANAGEMENT

A recently released report by Oak Ridge National Laboratory ranks "Systems Analysis to Develop Decision Methodology" as the top long term R&D priority for commercial low-level waste management. Work on alternative processes for dismantling; decontamination and decommissioning; ion exchange; incinerator and disposal technologies were ranked as the next four top R&D priorities. These R&D priorities, along with eleven others, (a total of sixteen) are contained in Volume 1. "Recommendations for Technology Developwith Potential to Significantly ments Improve Low-Level Radioactive Waste management" of the four volume report "Low-Level Radioactive Waste from Commercial Nuclear Reactors." The reported findings are based on a survey of operating nuclear reactors, and a workshop held in August 1985, that was designed to be a concentrated study of LLRW R&D needs. The resulting prioritization of R&D needs was done from the "federal viewpoint." Any identified R&D that was considered "simple, short-term, low-technology, or non-generic work" was not viewed as a federal priority but as something to be handled by the private sector.

Highlights: Summary of R&D Priorities

The sixteen R&D priorities identified along with highlights of the ORNL commentary provided in the report are:

1. Systems analysis to develop decision methodology: Generally, the waste management processes are considered separately rather than as integrated systems. Integration of these technologies would result in more efficient, safer, and more cost-effective waste management systems.... The indecision that now characterizes choice of technology applications could be largely relieved by development of a program (or programs) which would select the "best technology" based on operator inputs of the unique characteristics relating to the problem area.

2. Alternative processing for dismantling, decontaminating and decommissioning: area was identified as This being particularly urgent because of the planned obsolescence of numerous nuclear facilities. Much information is needed concerning available technologies and the new types of LLRW materials that will be produced in large quantities in the near future. First, a study is needed to predict the scope of dismantling-decommissioning activities for the entire nuclear industry to avoid possible unpleasant surprises and technology shortfalls. Then a concerted effort is needed to improve the available technologies and to develop new ones in time to meet projected needs.

3. Ion exchange: Areas where research and development is needed are: (a) pretreatment of liquid waste streams; (b) improvement of the ion exchange resins; (c) development of split-stream processing concepts; (d) improved capacity for mixed wastes containing hazardous chemicals; (e) regeneration, which may create more waste volume but may also simplify ultimate resin disposal; (f) solidification of ion exchange materials for final disposal; (g) disposal options such as co-containerization with filter cartridges, etc.; and (h) methods for reducing the volume of the spent resins (e.g., microwave heating).

4. Incinerator technology: This was identified as the most widely considered new application in the technology survey. Some federal research assistance in this area could prevent the misapplication of inferior technology and result in considerable savings of time and money Cost comparison studies are needed for small units at a single generator site vs. multiple units at a central location. Regional siting under the Compact system needs to be compared to location at the disposal facility. The economic effects of various incinerator designs and their acceptability to generators, regulators, and the general public need to be

determined.... Methods are also needed for examining the ash resulting from incineration of LLRW to determine the methods of fixation required for disposal.... A prototype "package" unit for utility LLRW could be designed from the newly developed standards, to lower the cost and simplify incinerator operation.

5. Disposal technology: Because of the impending need to establish a number of new disposal sites (due to the Compact legislation), R&D in this area is urgently needed.... The interaction and transport of waste forms in the final disposal environment are important areas for research.... One of the major unknown areas involves the effects of water on longterm waste form stability. A scientific basis is needed for deciding how much water is appropriate for optimum long-term disposal site performance.

6. Demonstration of advanced technologies: It is recommended that the federal programs create a formal liaison with EPRI, and perhaps others, to assure that advantages of an LLRW technology demonstration program will accrue to the commercial LLRW generators.

7. Technical assistance: Institutional and industrial generators of LLRW need technical assistance to offset the effects of constantly changing requirements from public, political, and regulatory sources.

8. Below regulatory concern materials: Development of more sensitive instruments for measuring very low radiation levels to give confidence that BRC material would not cause future problems when disposed of at a site not regulated for LLRW. New methods are needed for separating from LLRW the classes of material that could be proven to be no more hazardous than material now stored in sanitary landfills.... Technical assistance to the commercial sector is needed to establish 2 nCi/g as the standard "deminimus" radiation level.

9. Medical treatment techniques: There are a number of mechanical treatment areas where the LLRW generators could benefit from advanced R&D programs: bailing, supercompaction and remote handling/robotics technologies. The best approach would be a continuous long-term effort rather than short-term emphasis on only one or two technologies.

10. Monitoring and analysis procedures: More automation of waste monitoring is needed, as well as better methods for lowlevel radiation detection, particularly for measurements through various container materials.... The most critical need is for chemical species analyses on all the Resource Conservation and Recovery Act (RCRA) materials that are mixed with the LLRW.

11. Radical process improvements: Significant process improvements are needed, for example, in the operation of purification equipment. Also, the development of radionuclide-specific concentration methods could produce a "clean" stream suitable for recycling and a much smaller volume of material for further treatment or disposal.... A promising technology that needs R&D support is the use of microwave energy to destroy PVC waste materials.

12. Physical, chemical, thermal, and biological (PCTB) processes: After applicability studies to identify the most promising technologies, an R&D program needs to be instituted to develop the best applications to fit the LLRW generator situations.

13. Fundamental chemistry: Research on the fundamental chemistry of waste streams and final waste forms is needed.... Ion exchange resins is a specific area where fundamental chemistry research could make a significant difference.

14. Interim storage: For storage the R&D needs are: monitoring of stored material (particularly 'resins), radiolytic gas generation, radiation-enhanced degradation of polymeric materials, corrosion, disposal behaviour of materials that have been stored, effects of temperature and humidity on properties of cement waste forms, gas generation by biodegradation, long-terms maintenance problems, space, cots, and public opposition. 15. Modeling: Data for inputting into models and modeling codes for waste disposal facilities need to be developed.

16. Information transfer: Federal research was characterized by the commercial sector as "hidden in government reports." A federal journal should be developed that would facilitate technology transfer in the LLRW area. There is a special need for information exchange on solidifying agents and for continuing and improved LLRW surveys, which are very useful to the Compacts during the formative period. **

Views

HOST-STATE SELECTION IN THE SOUTHEAST COMPACT

William F. Newberry Office of the Governor State of South Carolina

Some have suggested that the four-year trauma of obtaining Congressional consent for the Southeast Low Level Radioactive Waste Compact was the easy part. Now the Southeast has to pass responsibility for disposal of low level waste to a willing member state by 1992.

The formula that will be used to designate the next host state, should designation be necessary, incorporates four principles. First, equity demands that a state's chances of hosting a facility should be in some proportion to its contribution to the problem, namely generation of low level waste. Second, as a practical matter, a state's eligibility should take into consideration the probability that the state can successfully site a facility, and the more suitable land a state has, the better its chances might be. Third, since all potentially suitable land may not be equal, the criteria should reflect some measure of a state's gross environmental suitability. Finally, since transportation of waste is a significant part of the overall disposal cost-- and perceived environmental risk-- the equation should consider the location of the various candidate areas with respect to the region's generators.

Each of the ten host state designation criteria is a measure of one of these disparate principles.

- 1. Projected volume of Class A waste.
- 2. Projected volume of Class B waste.
- 3. Projected volume of Class C waste.
- 4. Amount of "potentially" suitable area (PSA's).
- 5. Cumulative distances from all PSA's to generators for Class A waste.
- 6. Cumulative distances from all PSA's to generators for Class B waste.
- 7. Cumulative distances from all PSA's to generators for Class C waste.
- 8. Average population density of each state's PSA's.
- 9. Average density of highways in each state's PSA's.
- 10. Ratio of rainfall versus precipitation in each state's PSA's.

The Compact Commission's contractor, Dames & Moore of Pearl River, New York, scored each

state under each of the variables above using common scales. Each of 16 Commissioners, two from each state, distributed 100 weighting points among the criteria. With scores and weights the contractor has calculated the product for each state.

Those intolerant of compromise and ambiguity may have a lot to quibble over. The very character and definition of the variables could be further refined. For example, the "amount of potentially suitable land: is area left over after land with several obvious disqualifying characteristics is subtracted from the state's total." The number of these disqualifying characteristics was limited to some extent by the amount of money available to pay the contractor, although it is questionable whether a deeper study would have changed the relative state rankings under the variable. The "data bases" for scoring variables--like data bases everywhere--are not completely uniform and not totally documented. The sources of data were the subjects of a good deal of discussion and revision, finally being approved, though not roundly applauded by the Commission.

To complicate matters, there is no standard rule of thumb for assigning weights to the various criteria. Membership on the Commission is broad based, including elected and public officials, public health regulators and academicians. At one extreme, a Commissioner can size up his own back yard and that of others, then put all 100 points on a variable that points to his suspected rival. On the other hand, a Commissioner can ruminate for days on the metaphysics of the variables; relative merits, tortuously weighing the value of apples against oranges, disregarding his impact on the final outcome. There were three rounds of weighting, allowing each Commissioner to see how each of his colleagues voted. Only the final ballot counted.

As a hybrid the host state designation process is aesthetically imperfect and completely satisfied no one. The system was designed that way. No one variable, set of values or parochial interest will overwhelm the final determination. The Commission is optimistic that a satisfactory set of variables, weighted with the diverse wisdom of 16 individuals, and scored with data that is generally agreeable, will yield in the end a rank ordering of states that is fair, publicly defensible and legally sound.

Concurrent with the host state designation process, the Commission requires each eligible state (which excludes South Carolina) to submit a "Participation Plan" outlining what its conditions would be were it to host a facility. The Plans are due before the final round of weighting in the designation process. Each state will outline any surcharges or other incentives it would want, and will also get to speculate on how it might spend the new revenues. This participation track of the Host State Identification Plan was added not merely to keep states from feeling left out. The Commission reasoned that as the designation process moved ahead from the selection of criteria to refinement of the ranking process to actual weighting, the field of genuinely eligible states would gradually diminish and a few front runners might emerge. With a profitable potential offer resting on the table, a State thinking that designation was inevitable might feel that it could get a better deal by moving that the Commission accept its Plan, thus truncating the designation process.

Framers of the Host State Identification Plan also felt it was not totally implausible that when a State began weighing the environmental and political risks of hosting a next-generation low level waste facility against the monetary incentives, it might decide to tender an offer, regardless of the state's potential for designation. To discourage the submission of unrealistic or frivolous Plans--"for a million dollars a cubic foot and when Hell freezes over"--a state's Participation Plan is not an offer until it is so moved by a Commissioner from the originating state.

Under provisions of the Compact, the Commission must select the host state by this summer. If betting on such sport were legal, the hardened skeptics, whose number might include the

publisher of this periodical, would probably offer up good odds against us. It has been suggested that a state, under the auspices of its Governor and legislature, might participate with its neighbors for three years in the development and execution of this difficult process, only to walk away if it is selected in the end. The prospect implies a good deal of premeditated deception, and alleges that the public officials that have been involved have a cynical disregard for the value of public commitment.

There are also practical reasons for the Commission's cautious optimism. A drop-out state would immediately feel the pinch of out-of-region surcharges; its reactors might lose sited region allocations; and its generators would regress to the previous era of scrambling for a willing recipient for their waste. The state might be denied access to existing facilities altogether until it caught up with the milestones laid out in the 1985 Act. The state would have virtually no chance of being accepted as a good faith partner in another compact, and would still be faced with all the unpleasantries involved in opening a low level waste disposal facility--a facility whose costs to generators and their customers would be considerable higher than a regional facility. And the state would do this without the bargaining power to extract impact and liability assistance from its neighbor states. Finally, the authority of such a solo state to prohibit others from using its site--which would have been the reason for them leaving the Compact in the first place--is even more in doubt since the Low-Level Radioactive Waste Policy Amendments Act does not recognize single state exclusionary authority.

It is primarily a statewide public that would ascribe some importance to whether a low level waste site was regional or statewide. At the state level the focus would be on the integrity of the process that led to the selection decision rather than on a comparison of environmental risk between a regional and a state-only facility. At the local level of siting, where interest is more intense, a dump is a dump. In any event, it would not be clear that a capital poor minifacility receiving shipments sporatically into perpetuity would be less risky than a larger site of limited tenure, where handling, disposal and monitoring regimes are routinized.

The Commission assumed from the outset that each of its eight member states had at least one parcel of two hundred acres that could pass muster for siting under Part 61. In order to save several hundred thousand dollars of gratuitous geological screening, the burden to prove otherwise was placed on any state that felt it was a hardship case. No state has begged for exclusion. When these big generating states, seven of which were among the nation's top 13 waste producers in the U.S. in 1984, joined the Southeast Compact they didn't merely sign up for disposal capacity at Barnwell. They made a decision that the downside of hosting a low level waste facility multiplied by the probability of that happening did not outweigh the alternatives.

Not to overplay their foresight or courage. The alternatives were not that attractive. And each Southeastern state does make an argument or two why it should be less likely a contender than another state. The job of crafting an agreeable host state formula has been to roll all those arguments into a single package, collectively evaluate the strength of each argument, do the math, and agree to live by the outcome.

IN THE CONGRESS...THE COMPACTS

On Thursday, March 25, the Government Printing Office (GPO) released the "official printed version" of the Low-Level Radioactive Waste Policy Amendments Act of 1985 (PL 99-240). Copies can be obtained from GPO. One important note relative to the published Act is that it does contain the "drafting" error regarding the transfer of disposal allocation language reported in the EXCHANGE Vol. 5, No. 3. According to the interpretations of the official printed language of the law by Congressional staff, LLRW volume allocations at currently operating disposal facilities assigned to utilities can be transferred to generators residing in different regional compacts regardless of whether the generator receiving the allocation is residing in a region that is in compliance with the Act's milestones. State compact officials expect to have this corrected in a package of technical amendments to the Act.

IN THE MIDWEST

At their March 19 meeting the Midwest Compact adopted by unanimous vote a resolution declaring the use of traditional shallow land burial for the disposal of lowlevel radioactive wastes "unacceptable." In passing the resolution the Commission indicated that improved and greater containment technologies exist and that such technologies may rely both upon above and below ground placement of wastes.

In other action, the Commission adopted a timetable for identifying states to host new disposal facilities. Key to the state selection process is an incentives package for communities and states wanting to host a disposal site. This package would provide local communities with up to \$2 million in annual revenue and some local control over disposal site operation and emergency The Commission believes the closure. incentives package will help develop an objective review of low-level radioactive waste disposal at the local level. Details of the package are now being revised by the staff and the outside consultant-contractor, ERM-Midwest.

Under the adopted timetable the Commission would release a draft plan report in August 1986, hold hearings from August to November 1986, finalize a waste management plan in December 1986-January 1987 and select four potential host states in February 1987.

IN THE NORTHWEST

Terry Husseman, Director of the State of Washington's Nuclear Waste Programs within the State Department of Ecology, has been appointed Chairman of the Northwest Compact Committee.

IN THE INDUSTRY

A technology developed to protect lowlevel radioactive waste disposal sites may soon prevent unwanted root growth and vegetation from roadways, buried gas pipes and septic tanks, with a potential savings of millions of dollars in maintenance costs. The product is the subject of a technology transfer agreement between the U.S. Department of Energy's Pacific Northwest Laboratory (PNL) in Richland, Washington and E.I. du Pont Co. Under this agreement du Pont will produce and market "biobarrier" products for selected applications. The biobarrier products involve "marrying" a root-growth inhibitor with either a synthetic rubber or polymer fabric. The polymer acts as a reservoir for the herbicide, which is slowly released at a uniform rate to the surrounding soil. The biobarrier establishes a localized zone that can exclude plant roots for up to 125 years, while permitting the growth of above-ground vegetation.

The herbicide used has been available for more than 20 years nad has been approved for use on more than 50 crops and for landscape applications by the U.S. Environmental Protection Agency.

Du Pont will fund research to further develop th biobarrier concept in order to manufacture biobarrier-based products to be used for protecting home septic systems, edges of roadways and sidewalks and driveways.

the HLW Focus

of the Radioactive Exchange •

(P-A from pg. 1)

tection provisions of the HLW standard violate the Safe Drinking Water Act (SDWA), and

-- they are also arbitrary and capricious.

The summary explaining the basis of the first argument goes as follows:

Part C of the SDWA prohibits the "endangerment" of actual and potential underground sources of drinking water by underground injection. Underground injection "endangers" ground water when it may result in contamination above levels set by the national primary drinking water regulations. The HLW standards apply to a variety of underground injection technologies including the emplacement of HLW in geologic repositories.

The groundwater protection provision (Section 191.16(a)), although imposing the same contamination limits as the SDWA, protects only existing "special sources" of groundwater. These special sources represent a far narrower range of ground waters than the actual and potential sources protected under the SDWA. Additionally, Section 191.16(b) permits the further contamination of groundwaters which already exceed the SDWA limits. This also violates the SDWA.

The individual protection standard (Section 191.15) limits radiation exposures to humans via environmental pathways including drinking water. However, the exposure limits set by Section 191.15 are almost nineteen times higher than those permitted under the SDWA's "no endangerment" provision. Therefore, to the extent that the drinking water pathway represents more than a minimal component of the total exposure pathway, Section 191.15 permits a violation of the SDWA. This is not an unlikely occurrence since EPA assumes in its analyses that drinking water will be the exclusive individual exposure pathway. Since Sections 191.15 and 191.16 both violate the SDWA they must be set aside.

On the second argument, the brief states that:

EPA has provided no reasoned ex-planation for its decision to protect only "special sources" of groundwater under Section 191.16. The special sources definition is irrational because it will result in Section 191.16 not applying anywhere a repository is likely to be built. EPA has also failed to supply a reasoned basis for requiring that the determination of whether "thousands of persons" draw water from a special source be made prior to the time when significant populations will exist in the vicinity of a HLW disposal facility. Finally, EPA has failed to provide a reasoned explanation of the term "thousands of persons" under the special source definition. For all these reasons the special source definition must be set aside.

EPA's decision to limit the duration of the groundwater and individual protection standards to 1000 years is a clear error of judgment and without a rational basis. Both standards will expire at the precise period in time when EPA expects significant radioactive contamination of the accessible environment to begin. EPA argues that a longer time limit would cause a delay in the development of a repository and would be difficult to demonstrate compliance with and expensive to implement. These arguments are not supported by the record. Consequently, EPA's decision to limit the standards to 1000 years must be set aside.

Minnesota's Arguments

The State of Minnesota presented five arguments against the EPA rule:

- (1) The special source of groundwater protection was meaningless. Because of the way the siting guidelines are set up there is very little liklihood that this provision would be applicable.
- (2) No good reason was given for dropping ALARA from the standard as the basis for radiation protection. ALARA provisions were in the original version of the proposed standard and dropped halfway through the rulemaking process.
- (3) The standard lacked generally applicable guidelines or assurance requirements for radiation protection.
- (4) It does not include provisions setting standards for the issuance of variances from the rules.
- (5) No sound basis is given for setting the time period for the measurement of the concentration of radionuclides.

Texas' Procedural Challenges

Texas' Brief challenges the standard primarily on procedural grounds. It argues that:

- o the groundwater definitions and standards were promulgated without prior notification;
- o the definition of "special source" of groundwater and the groundwater pro-

tection requirements are not a logical outgrowth of any proposed rule or any proposed draft of the rule, or of any comments made on the proposed rule;

 EPA failed to adequately explain their basis for special source of groundwater and their groundwater protection standard. **

SENATE ENERGY INCLUDES EVANS' WASTE PROVISIONS IN P-A REAUTHORIZATION

On Wednesday, March 26, Senate Energy completed the first day of a planned twoday markup of the McClure-Simpson proposed Reauthorization of the Price-Anderson Act adopting provisions providing liability coverage for waste related activities proposed by Senator Evans. The Committee rejected a proposal by Senator Metzenbaum that would have allowed the Secretary of Energy to sue a contractor for damages resulting from a nuclear incident based on gross negligence or willful neglect.

The second markup session planned for Thursday, March 27 was convened and then cancelled.

Senator Evans' package of amendments, adopted by unanimous consent, essentially provides liability coverage for nuclear proposed activities under the waste Simpson-McClure Price-Anderson scheme. It is based on the concept of providing "full compensation" of claims for damages from incidents involving nuclear waste programs. Though the Senator noted that he was pleased that his proposals would be included in S 1225 as it was reported out of Committee, he also let his colleagues know that he was going to continue to work in other forums to improve waste related liability coverage.

Full Compensation

As noted in previous edition of the Exchange (EXCHANGE, Vol. 5, No. 4), Senator Evans' had decided to abandon his initial effort to obtain "unlimited liability" coverage for nuclear waste activities (at least in thic Committee) preferring to fold his proposal. into the McClure-Simpson P-A scheme (See EXCHANGE Vol. 4, No. 9). [Editors Note: A Legislative Brief on the Senate Energy and Natural Resource version of the complete P-A reauthorization will appear when they complete action.]

Senator Evans emphasized in his supporting statement that the proposals are intended to provide "full compensation" for damages suffered during a nuclear waste related incident. Some state officials are of the opinion, that for all practical purposes, the "full compensation" concept embodied in the Senator's proposal has the practical effect of providing unlimited liability coverage.

Highlights of Evans' Waste Provisions

Senator Evans' Committee-approved liability coverage provisions for nuclear incidents:

- Directs the Secretary of Energy to enter into indemnity agreements for all public liability arising out of a nuclear incident involving a government contractor, including all contractors engaged in the disposal, storage, or transportation of, or research and development on radioactive waste. Included specifically as activities to be covered by these indemnity agreements are activities undertaken pursuant to the Waste Isolation Pilot Project (WIPP).
- Requires the Secretary of Energy to make available funds from the Nuclear Waste Fund, up to the maximum amount of financial protection required of NRC licensees under the general coverage of the McCLure-Simpson P-A reauthorization. This amounts to \$2.4 billion.
- Prevents contractors engaged in activities relating to radioactive waste from avoiding public liability claims by claiming "sovereign immunity" due to the federal character of such activities. This is particularly important given that high-level defense wastes form a substantial portion of the radioactive waste which will be disposed of in the planned geologic repository.

o Directs that in the event that valid claims arising out of nuclear waste incidents exceed \$2.4 billion, full compensation of all valid claims will be accomplished through the expedited Congressional procedures outlined in the overall proposed P-A reauthorization scheme.

Senator Evans was expected to offer another amendment at the Thursday session that would have limited the period for P-A reauthorization in order to allow the host repository states another chance on improving the liability coverage prior to waste being delivered to the repository. He will probably propose it at the next session.

Contractor Liability

At the Thursday session the Committee rejected by an overwhelming majority Senator Metzenbaum's proposal that would have given the Secretary of Energy the right to sue contractors for damages resulting from a nuclear incident on the basis of gross negligence or willful neglect. The Senator argued that this possibility would ensure that contractors would act responsibly and the general taxpayer would not end up paying for damages caused by contractor neglect. He explained that compensation for claims made by third parties would not be affected, that only after all valid claims were paid would the Secretary be able to sue a contractor for damages and then only on findings of gross negligence or willful neglect. Opponents argued that contractors faced with this liability would have to obtain their own liability insurance which in the end would still be paid by the federal government, up front in the initial contract with the contractor. It was also pointed out that a contractor may not be as forthcoming in reporting incidents if his firm would then possibly face liability claims. **

OTA STUDY SUPPORTING CONTINUED FUNDING OF SUBSEABED DISPOSAL

Within the past couple of weeks the Office of Technology Assessment has been circulating Part I of a "draft for comment" report on their study of subseabed disposal of high-level radioactive waste, that supports continued funding of research on this disposal alternative. DOE eliminated support for the program in its recent budget request (See EXCHANGE Vol. 5 No. 2). This circulated "draft" contains a general discussion of subseabed disposal and a discussion of the implications on continuing or terminating funding for the current DOE program.

"Draft Findings"

This "draft" contains the following findings:

- -- Subseabed disposal of HLW is the only concept being seriously studied by the U.S. or any other country.
- -- Research carried on to date has not identified any obstacles to subseabed disposal that would provide a technical basis for terminating the research program.
- -- Uncertainties and questions regarding this alternative still need to be addressed in order to determine whether the concept is scientifically and environmentally feasible. Additional modeling and field research is required for the program to be fully evaluated. This work would be completed if funding support is continued at the current level until the early 1990's.
- -- The withdrawal of the U.S. from subseabed disposal research could have significant international implications. This alternative may be the only viable option for several small and developing countries. It's development could aid in the achievement of non-proliferation objectives.

- -- Decisions regarding continuation of funding should be linked to a schedule for demonstrating feasibility. A logical point at which to make this decision and evaluate the program would be when the modeling and experimentation phase of the research is completed in the early 1990's.
- -- An interim point at which a funding decision could be made would be when the program's modeling of risk estimates is complete -- in about two years.

International Implications

In the discussion regarding possible international implications of not continuing work on subseabed disposal the "draft" raises several issues. It points out that in several small and developing countries, land-based repositories would not be feasible from an environmental or economic perspective. The argument is also made that lacking a safe economic disposal option, countries may look to reprocess their waste or ship it to a foreign country for disposal or reprocessing. However, 🔍 this option may not be achievable in reality. As the "draft" points out, suggestions that the U.S. accept limited quantities of spent fuel for interim storage have been rejected. Also, it is argued that shipping of waste to foreign countries capable of land disposal aggravate non-proliferation incould itiatives. The waste spent fuel could be reprocessed to recover plutonium which could be used in the production of nuclear weapons.

The "draft" also identifies significant international institutional barriers with regard to the subseabed concept that must be overcome if it, indeed, is judged feasible. **

! A REMINDER !

Congressman Ed Markey will speak at the opening session of the Second Decisionmakers' Forum on Wednesday, May 21, and **VEPCO President William Berry** will address attendees at the closing Plenary session on Friday morning, May 23. Registrations are starting to come in at a quickening pace, so reserve your place as soon as possible. You will not want to miss this event!

Edward L. Helminski Publisher The Radioactive Exchange

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IN THE INDUSTRY

Westinghouse Electric Corporation has shipped to Idaho Falls a 95-ton cask purchased by Virginia Power and developed to demonstrate the feasibility of dry storage of spent nuclear fuel. The Westinghouse MC-10 cask, the only domestically-manufactured cask in the program, was designed and manufactured at the nuclear components division in Pensacola. Capable of storing 24 intact PWR fuel assemblies of 48 consolidated assemblies, the fully-loaded cask will weigh approximately 112 tons.

SHORT COURSES

State and Indian officials and other who would like to obtain a better understanding of multiattribute decision analysis may want to consider attending the following summer workshops on the subject offered by the Massachusetts Institute of Technology: On June 16-20, the MIT summer session is offering "An Introductory Workshop on Decision Analysis." This session is described as "a self-contained interactive introduction to the concepts and practical application of decision analysis, including an introduction to the multiattribute case. This introductory session is then followed by another 5-day "Advanced" Workshop given from June 23-27. This advanced course is described as "an interactive program on the ideas, methodology and application of decision analysis to problems with multiple objectives. Risk analysis and group decision problems will be included as will case studies from the private and public sectors. For more information call the Director of the summer session at (617) 253-2101.

UPDATE

STATUS OF UPCOMING REPORTS AND MILESTONES OF THE OCRWM (3/31/86)

Project Decision Schedule -- Should be released by 4/15/86.

Proposal for Defense Contribution to the HLW Fund -- to be published in the Federal Register 5/86. OMB delay

Environmental Assessments for First Repository -- Spring '86.

MRS Proposal -- Submission to Congress prohibited by Court Order. Could be delayed until 11/86 - 2/87.

Fee Adequacy Report -- to be submitted to Congress week of 3/31/86. (Full report in EXCHANGE 2/28/86.)

Report To Determine P-A Liability Limits For HLW Repository -- (?)(See Wrap-Up, EXCHANGE Vol. 5, No. 4)

Annual Report to Congress -- Signed off 2/26. Was to be released by 3/15/86; delayed due to printing problem until 4/1/86.

Issue Transportation Institutional Plan -- 4/86.

Issue Program-Level Financial Assistance Guidelines -- 5/86.

sue Request for Proposal (RFP) for Transportation Cast Development -- 6/86.

Issue RFP for Phase II Program Research and Development Announcement Follow-On Projects - - 6/86.

April

- 3-4 Meeting: South East Compact Commission; Contact: Kathryn Visocki, 3901 Barrett Drive, Suite 100-B, Raleigh, NC 27609. (919) 781-7152.
- 8-10 Symposium: Third International Spent Fuel Storage Technology Symposium/Workshop; Seattle, WA; Contact: Ruth Dollar (509) 375-2586.
- 10 Joint Hearing: House Energy and Commerce Subcommittee on Energy Conservation and Power and the Subcommittee on Commerce, Transportation and Tourism; DOE-Mixed LLRW; Contact: Nancy Smith, (202) 226-2424.
- 11-12 Western Legislative Conference, Meeting of Environment and Hazardous Material Committee and its Subcommittee on High-Level Waste; Executive Tower, Denver Co.; Contact: Patty Spangler (415) 986-3760.
- 17-18 Meeting: Fourth Annual Spring Meeting CALRAD Forum; El Rancho Hotel, Sacramento, CA; Spons: CALRAD; Contact: Jean Parker, P.O. Box 40279, San Francisco, CA 94140.
- 16-17 Meeting: First Round HLW Repository State and Tribe Meeting, with DOE Officials; Alburquerque, NM, Contact: John W. Green, Mississippi Department of Energy and Transportation, Jackson, Mississippi (601) 961-4733.
- 21-23 Conference: American Power Conference; Chicago, IL; Spons: Ill. Institute of Technology; Contact: R.E. Armington, IIT-127 Siegel Hall, Chicago, IL 60616, (312) 567-3406.
- 22-25 Conference: The 5th Annual Conference on the Incineration of LLRW; Coordinated by Univ. of California at Irvine, in cooperation with DOE, ASME and chapters of the Health Physics Society; Charlotte, NC, Sheraton Airport Plaza Hotel (704) 392-1200; Contact: Charlotte Baker, LLW Projects Coordinators, EH&S, UCI Irvine, CA 92717 (714) 856-7066.
- 22 Release of technical ranking of SE compact states on host state selection.
- 24 Hearing: House Interior Committee; Mixed Waste; Contact: (202) 225-8331.
- 25-28 National Conference of State Legislatures, Legislative Working Group on High-Level Waste; Richland WA.; Contact: Sheryl Runyon or Barbara Foster (303) 623-7800.

May

- 13-15 Conference: Nuclear Power Assembly; Washington D.C.; Co-Spons: American Nuclear Energy Council, American Nuclear Society, American Public Power Association, Atomic Industrial Forum, Edison Electric Institute, National Rural Electric Cooperative Association and U.S. Committee for Energy Awareness; Contact: Conference Office, Atomic Industrial Forum, 7101 Wisconsin Ave., Bethesda, Md. 20814-4891, (301) 654-9260.
- 17-19 Conference: Hazardous Material Advisory Council Annual Conference; Omni Shoreham Hotel, Washington, D.C; Contact: (202) 783-7460.
- 20-21 Seminar: Packaging and Transportation of Radioactive Waste Material; Hartford, Conn; Spons: US Ecology; Regis: \$425; Contact: Peggy Thompson, (800) 626-5334.

- 20-23 THE SECOND RADEXCHANGE DECISIONMAKERS' FORUM: MOVING TOWARD NEW DISPOSAL CAPACITY UNDER REGIONAL COMPACTS; Spons: The Radioactive Exchange; WILD DUNES, S.C., The number of participants will be limited to 140; Registration Fee: Subscribers \$595.00, after 4/20/86 - \$635; Non-Subscribers \$650, after 4/20/86 - \$690.; Contact: Carole, (202) 362-9756.
- 27-30 Training Course: Radwaste Handlers' Training Course; Spons: Quadrex Corp.; Garden Plaza Hotel, Oak Ridge, Tennesee; Registration \$450.; Contact: Russ Hall (412) 262-9200 or Mike McGough (615) 482-5532.

June

- 1-6 Meeting: ENS-FORATOM Enc-4; Geneva, Switzerland; Spons: European Nuclear Society; Contact: Harry Cartwright, Tibbits Hill House, Corfe Castle Warham, Dorset BH 20 5HZ ENGLAND.
- 15-20 Meeting: American Nuclear Society Annual Meeting; MGM Grand, Reno, NV; Spons: ANS; Contact: ANS Meeting Dept. (312) 352-6611.

July

- 20-23 Conference: ASME/ANS Bi-Annual Nuclear Power Conference, Safe and Reliable Nuclear Power Plants; Philadelphia, PA.; Spons: American Society of Mechanical Engineers, American Nuclear Society; Contact: Dave Ciarlone, Philadelphia Electric Co., 2301 Market Street, Phila, PA 19101, (215) 841-4807.
- 22-23 Seminar: Packaging and Transportation of Radioactive Waste Material; Louisville, KY; Spons.: U.S. Ecology; Regis: \$425; Contact: Peggy Thompson, (800) 626-5334.

August

September

- 7-10 Conference: Second International Conference on Radioactive Waste Management; Winnipeg Conven | tion Centre, Winnipeg, Manitoba, Canada; Spons.: Canadian Nuclear Society; Co-Spons.: American Nuclear Society; Contact: Dr. T.S. Drolet, 2700 Lakeshore Road West, Mississauga, Ontario, Canada, L5J 1K3; (416) 823-6654, TLX: 06-982333 or Eva Rosinger, Canadian Nuclear Society, 111 Elizabeth St., Toronto, Ont., Canada, Cable: 0623741, CAUCA.
- 14-18 International Conference: Low-, Intermediate-, and High-Level Waste Management, Decontamination and Decommissioning; Hilton, Niagara Falls, NY; Spons.: ANS; Contact: John L. Knabenschuh, West Valley Nuclear Service, Box 191, West Valley, NY 14075, (716) 942-4295; TLX: 812390, or ANS Meetings Dept. (312) 352-6611.
- 23-25 Seminar: Packaging and Transportation of Radioactive Waste Material; Richland, WA; Spons: US Ecology; Regis: \$525; Contact: Peggy Thompson, (800) 626-5334.

October

November

 Meeting: American Nuclear Society Winter Meeting, Sheraton Hotel, Washington, D.C.; Spons: ANS; Technical Program Chairman, David L. Balck, Westinghouse, 1801 K Street, N.W. - 9th Floor, Washington, D.C. 20006 (202) 833-5083; Contact: ANS Meetings Dept. (312) 352-6611.

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