Special Decisionmakers' Forum Edition

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

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SUCCESS! SURREY SPENT FUEL SHIPMENTS TO INEL NEAR COMPLETION

Sometime this weekend (May 16), the last shipmemt of spent fuel for the Dry Cask Storage Demonstration Project from Virginia Power's Surry Nuclear facility will have been delivered to the Idaho National Engineering Laboratory. This is the twenty-third shipment of the program which moved sixty-nine fuel assemblies across the central United States without any, significant incidents.

Carl Gertz of DOE-INEL credits the success of the transport to good hard work between the responsible DOE officials and the states. The fact that there were no major incidents or public protests over the shipments is no small fete, given the public sensitivity to the nuclear waste issue over much of these United States. In Mr. Gertz's opinion the key factor contributing to the success of the transport program was the strict adherence to the "Courtesy Communication System" principles set by OCRWM's Lake Barrett, the person responsible for transportation aspects of the HLW program. (See **Spent Fuel** in **the HLW Focus**)

WHERE IS THE LLRW GOING?

State officials from Washington and South Carolina report that waste accepted for disposal at the Hanford and Barnwell facilities dropped drastically for the first quarter of 1986, and has not picked up in April. Washington officials report that Hanford received, on the average, about 56,000 cubic feet of waste per month for the first quarter of 1986. For April the accepted waste volume totaled only 35,800 cubic feet! Nancy Kirner of the State's Office of Radiation Protection explained that the reduction cannot be attributed to any extensive volume reduction activities "because there has been no significant increase in the curies per cubic foot of waste accepted at the site.

Barnwell is also experiencing a reduction but not to the same degree. The South Carolina facility averaged only 80,000 cubic feet per month, as opposed to the 100,000 it had been receiving.

What is happening to the waste? As one generator told one compact official there is seems to be a move among some generators to store on-site, until new sites are developed in regions currently having none, in order to avoid paying out-of-region surcharges. **

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NRC STAFF PROPOSAL ON MIXED WASTE POLICY MAY INCLUDE BAN ON DISPOSAL

A NRC staff proposed Commission policy on mixed waste to be considered by the full Commission on Wednesday, May 21 is reported to include a recommended option that would have the Agency prohibit the acceptance of mixed waste at all the operating commercial LLRW facilities. Though the Waste Director's Office could not be reached to confirm the staff recommendations the EXCHANGE has learned from other sources outside the nuclear agency that the staff recommended policy views the possibility of working out anything with EPA as nil to impossible. One of the critical factors continues to be, as NRC officials have repeatedly stated in recent Congressional testimony, that EPA site location guidelines for RCRA waste sites, therefore mixed-waste-sites, will not be issued in time to allow states or compacts to select a LLRW disposal site that would meet these guidelines and also meet the site development milestones included in the LLRWPAA of 1985.

Delegation Of RCRA Authority?

The staff proposal is said to discuss the often-suggested delegation of authority from one of the agencies to the other, but re-emphasizes that legislation would be necessary to allow EPA to delegate RCRA authority to NRC. Even if that were to occur, EPA-RCRA siting standards would not be ready, therefore NRC would still not have all the regulations necessary to license a commercial LLRW disposal facility that could accept mixed waste.

Direct NRC Action Urged

From what has been learned thus far, the staff proposal will almost exclusively lay out options that call for independent action by the Commission as opposed to continuing any interagency negotiations. This is directly in line with the May 6 testimony of NRC Nuclear Material Safety Director John Davis before the Interior Committee. He plainly stated his frustration of trying to work out something with the environmental agency and left very strong signals that NRC was not interested in continuing along this path.

The most far reaching option that will be offered by the staff, for consideration by the Commission is one that would have the effect of prohibiting the disposal of mixed waste at any of the operating commercial sites or any future sites, until everything is worked out on RCRA. Such a prohibition would necessarily mean that, in the interim period, mixed waste would have to be stored, but stored in compliance with RCRA regulations. Since the development of a federal mixed storage facility would be very unlikely, this interim ban on disposal could possibly result in requiring on-site storage at either a generator's, or possibly an existing broker's facility, that would meet RCRA requirements.

Management & Legislative Options

One of the less drastic measures that is to be proposed by the staff is to have the NRC more effectively implement and enforce existing regulations that require licensees to reduce the toxicity and volume of mixed waste. This would require the issuance of guidance if not regulations.

Another option, that will be presented to the Commissioner is requesting legislation that would give NRC the authority to administer RCRA directly. The possibilty of this happening given the current mood of House Committees is next to impossible.**

HOUSE INTERIOR MEMBERS EXPRESS FRUSTRATION OVER MIXED WASTE REGS

Resolution of the problems besetting regulation of mixed radioactive and hazardous wastes appear to remain stalemated. At the May 6 House Interior Committee oversight hearing held on the subject, Committee members indicated a willingness to accept any approach to the problems, old or new, if witnesses would tell them what would work.

Committee Chairman Morris K. Udall (D-AZ) and his co-chair for the day, Sam Gejdenson (D-CT) insisted the Nuclear Regulatory Commission (NRC) and Environmental Pro-

tection Agency (EPA) ought to be able to resolve the conflicts over dual regulation of mixed wastes without legislative assistance from Congress. This had been the position of the Interior Committee for several years before it recommended legislative action in the course of consideration of the Low-Level Radioactive Waste Policy Amendments Act last year. Udall and Gejdenson demanded that all witnesses send the committee their written recommendations for resolving mixed waste issues, legislative, or otherwise.

George Miller (D-CA) raised a note of urgency at the proceeding by questioning the safety of storage that might be required and the prospect of illegal dumping of mixed wastes if disposal is delayed through failure to resolve regulatory issues.

Agencies Remain at Odds

While some new assertiveness was evident in the position taken by EPA's Winston Porter that legislative action was necessary, NRC testimony receded further into the agency's recently stated position that a legislative solution was not readily apparent. (See Related Story this issue)

When the Department of Energy (DOE) proposed rule on the definition of byproduct material was raised, EPA witnesses reflected a slight change in position from statements given during earlier hearings (EXCHANGE, Vol. 5, Nos. 5, 6.). They reluctantly were more critical of the DOE proposal, which would, if adopted, weaken EPA's jurisdiction over DOE-generated mixed waste.

Porter, the Assistant Administrator of EPA's Office of Solid Waste and Emergency Response, testified that modification of the statutory dual permitting authority affecting mixed waste disposal "could be very helpful." He recommended that NRC take the lead agency role, saying "It appears that the large bulk of the problem (at commercial LLRW site) is radiation," and that for EPA to be the lead agency "would be like the tail wagging the dog." He said that EPA should develop new regulations and guidance on hydrogeology and location standards, and "work with NRC" to implement existing RCRA regulations on a case-by-case basis.

NRC's John Davis, Director of Nuclear Material Safety and Safeguards, threw cold water on Porter's offer to yield jurisdiction. He also expressed frustration over working with the environmental agency. He testified that in the six years of trying to cooperate with EPA, NRC had "become more confused as to what are the requirements of RCRA". The NRC Director indicated that the Commission is reluctant to take responsibility for implementing regulations the interpretation of which is uncertain.

Davis reported that the Commission now has no policy regarding the mixed waste issue, and that the staff is attempting to develop options for a Commission recommendation. (See Story this issue)

EPA By-Product Stance Attacked

Peter Kostmayer (D-PA) criticized Porter for EPA's willingness to cede authority to NRC and had the Assistant Administrator taking a more assertive position on the DOE byproduct rule by the end of the session. He pointed out DOE's new definition, by broadening the characteristics of waste which would be so defined, would exempt an increased amount of DOE-generated waste from EPA's permitting requirements.

Asked by Kostmayer what he thought of the DOE definition of byproduct material, Porter stated, "We're not sure se see the necessity for that rule." Do you think you could say anything about the rule stronger than that it's unnecessary?" asked Kostmayer. "Do you think it's a good rule?" "No," Porter responded, "I don't think it's a particularly good rule." "In that case," Kostmayer insisted, "do you think it's a bad rule?" "I guess if I don't think it's a good rule, I would have to say it was bad," Porter acknowledged.

US Ecology Supports NRC Rule

US Ecology President Jerry Scoville testified that the question of what constitutes mixed waste is the central issue

affecting its regulation at commercial facilities. "Without the answer to this question, any estimate (regarding its volume or characteristics) is pure conjecture."

Scoville supported criticisms raised at recent Senate hearings of the Brookhaven National Laboratory report on mixed waste volumes and characteristics (See EXCHANGE Vol. 5, No. 5). According to Scoville, the Brookhaven report is a less than accurate portrayal of the mixed waste problem. He said the report only surveyed a small number of generators and did not include a clear regulatory definition of the substance. He remarked that that the volume of LLRW at commercial sites that is mixed waste, could range from three to 20 percent if lead shielding from nuclear reactors was included. or "zero percent if you define it as waste received for burial and identified by generators as RCRA waste, since we have never received any waste so identified."

Scoville argued for vesting NRC and Agreement states with authority to regulate all waste at LLRW sites, and for a "national scheme for regulation of mixed wastes in uniformity among all states."

Strong EPA Role Supported

Dan Reicher, staff attorney with the Natural Resources Defense Council, argued against reducing EPA authority, particularly with respect to enforcement of RCRA requirements. He said the agency regulations can be coordinated, and that in practice they very rarely conflict. He added that states are likely to require more stringent protection at LLRW sites than that required by NRC.

Gejdenson, generally sympathetic with the concept of an administrative solution to the problem, said that in theory Reicher "may be right, but in practice the process is not moving as quickly as is necessary."

Illegal Dumping Feared

Miller indicated that mixed wastes might be indefinitely "orphaned" while a resolution to jurisdictional issues is achieved, and questioned the safety of not providing for disposal. In response to Miller's question, Porter stated that mixed waste storage "is a problem, due to the ignitability of RCRA substances." Miller asked Richard Reba, Director of George Washington University Medical Center's Division of Nuclear Medicine, whether there was "any possibility of illegal dumping" of mixed waste. "If something becomes impossible to dispose of and continues to build up, it's inevitable that (universities and hospitals) will be forced to do things they might not otherwise want to do," Reba said. "If there is no legal way, they may have to do something illegal." It's hard to believe the build-up is going to just continue," Miller said. "I don't think that's a very far-fetched scenario. In California there are large areas of Silicon Valley where they're dumping chemical wastes down the sewer." **

DOE PROCEDURES ON SURCHARGE REBATE FUND TO BE ISSUED

The Department of Energy Low-Level waste program will soon be issuing proposed procedures regarding the establishment and operation of the LLRW Surcharge Escrow Account. A draft proposal was discussed with compact officials at their May 7 meeting in Denver, Colorado. Though this "draft" is undergoing some "technical and legal" changes to comply with Federal Register Notice procedures, it is expected to be issued without any substantive changes.

Proposed Administrative Procedures

Under the proposed procedures , all surcharge deposits will be placed in one account with each payee's principle and interest tracked separately. DOE will retain the authority to audit sited-states' accounting records at any time. Each sited-state is to submit to the DOE Escrow Account 25 percent of the waste surcharge within twenty days following the month in which the waste was received at the disposal site. Late deposits will be subject to a daily interest charge.

To receive a rebate, the Governor of an unsited state or compact is to file a request notifying the Secretary that the state or compact is in compliance with the milestone. A sited-state is allowed to make a recommendation as to whether the respective unsited state or region is in compliance. DOE is then to make the final determination on whether the unsited region or state is in compliance with the LLRWPAA milestones and therefore eligible for a surcharge rebate. All eligible unsited states or regions are to receive their respective rebates plus all accrued interest.

Compliance With The First Milestone

According to the list of states included in the proposal that are judged to be in compliance with the July 1, 1986 milestone, the only states not in compliance are: New York, Rhode Island, Maine, New Hampshire, Massachusetts and Vermont.

Approved Uses Of Rebates

Since the Act requires that all the rebates are to be used for site development, the proposed administrative procedures include a DOE list of approved uses of the funds, and a proposed format for expenditure reports. Generally speaking, the funds can be used for activities directly related to the development of disposal facilities, or to mitigating the impact of such facilities on state or local governments. The rebate funds cannot be used for the development of waste treatment or interim storage facilities.

Among the approved "mitigation" uses are direct compensation to states for hosting a facility and development of state or local compensation and incentive policies and plans.**

NEW HANFORD SITE LEASE CONDITIONS WILL AFFECT LLRW ACCEPTANCE

The state of Washington's Office of Radiation Protection is expected to finalize conditions for renewal of US Ecology's license to operate the Hanford commercial LLRW facility by late summer of this year.

The Louisville, KY-based LLRW disposal company's license actually expired on November 30, 1985. Since that time the state has issued a license to operate the facility under "a timely renewal status", in recognition of US Ecology's submission for relicensure in July '85 and their diligent work since that time on the relicense application.

Nancy Kirner, the head of the radwaste section of the Office of Radiation Protection, explained that the license renewal will establish expedited administrative processes that will allow the site operator to take certain actions without having to wait for full department approval. A site operator's manual and standards will be incorporated into the license when it is issued.

New Limitations On Acceptable LLRW

The new license will incorporate several significant changes with regard to the type of waste and waste packages that can be accepted for disposal. Ms. Kirner reported that:

(1) Wooden boxes would not be acceptable after November 30, 1986.

(2) the "Approved list" of absorbents that can be in the waste package will be changed.

(3) A distinction will be made between stabilization agents, solidification agents, and absorbents.

(4) Treatment of incinerated ash will be required so that it is received at the site in a non-dispersible waste form.

(5) Waste oil and chelating agents will be required to be stabilized prior to acceptance for disposal when their pretreatment concentrations within the waste packages are above 10% for oil, and 1% for chelates. In addition these waste packages must be segregated from other waste delivered for disposal

(6) RCRA regulations will be recognized as governing the disposal of mixed-waste at the facility.

ON THE LLRW MANAGEMENT BUSINESS ... LEO DUFFY, WESTINGHOUSE WASTE TECHNOLOGY

The following interview with Leo Duffy, General Manager of Westinghouse's Waste Technology Services Division was conducted by Edward L. Helminski, Publisher of The Radioactive Exchange.

Over the past two years or so Westinghouse has been expanding its low-level radwaste services buying up small firms that provide such services. What is the current range of your business?

There are three Westinghouse subsidiaries which provide utilities with a wide range of radiological, health physics and waste management services. They are Hydro Nuclear Services, Inc., of Marlton, New Jersey; NUMANCO of Barrington, Rhode Island; and Westinghouse-Hittman Nuclear, Inc., of Columbia, Maryland. Hydro Nuclear offers decontamination services, radiological engineering services and a dry active waste volume reduction system, while NUMANCO provides health physics and chemistry services, instrumentation service and chemical solidification services. Hittman offers on-site radwaste processing, compaction and packaging services, in addition to transportation and disposal services.

Hydro Nuclear and NUMANCO are components of Westinghouses' Radiological Services Division, while Hittman is part of our Waste Technologies Services Division.

So essentially you have two different divisions from Westinghouse offering waste services.

Complimentary waste services. NUMANCO does the health physics, Hydro Nuclear does the separation of the waste prior to packaging and disposal, while Hittman goes from solidifying, packaging and shipping to the disposal site to disposal.

What type of services are offered by Hydro Nuclear?

They offer a wide range of services. They perform licensing review and provide a sorting-volume reduction service. In this sorting operation waste is sorted and screened and then the radioactive components are separated from the non-radioactive. In addition to that, they also provide a mechanical service that is used in association with decontamination -- using a hydro laser for the cutting operation.

In the past couple of years utilities have become very interested in reusing valuable tools and equipment rather than throwing them away because they have been contaminated with radioactivity. If the material can be decontaminated it can be reused. In response to this interest what Hydro Nuclear has done is put together a system that sorts, measures, separates and returns useful material back to the utility.

So Westinghouse is in the resource recovery business? Does that mean you're in competition with firms like Quadrex?

Yes.

What about the disposal business? Is Westinghouse still interested in disposal sites after the California episode?

Our disposal business is still in the formative stage. We are closely watching how the regional compacts are shaping up their implementing legislation and what they are requiring in various disposal technologies. We presently look at this business as a matter of working with the states to identify our opportunities. We want to make sure they understand what technologies are available and what are the opportunities with respect to attracting the best companies to support them over the long term.

Is the waste disposal operation housed within Westinghouse Hittman or within Waste Technology Service Division?

It has always been in headquarters. The California site proposal came out of our headquarter's operation. In fact, the project managers were designated out of headquarters.

Right now most of the work is being carried out in the service organizations at Hittman and Hydro Nuclear. SUREPAK, SAVEPAK, the volume reduction operations for resin and dewatering certification, plus our decontamination operations are primarily done at Hittman but new proposals usually come out of headquarters.

What about the California situation? Is California past history or do you feel there is still an opportunity there if the public keeps pushing for the use of new disposal technology?

We are moving on to other states but nothing is past history until the final legislation is passed.

What do you mean by "final legislation"?

New bills are coming out of legislative committees that if adopted would prohibit shallow-land burial. They would allow only engineered disposal.

If such legislation is enacted is it your opinion that the license designee process would have to be reopened?

Well, I can't really say. I do know that the original proposal was bid on the basis of costs associated with shallow-land burial as required under the new NRC Part 61 regulation. And, the operator is required to maintain the disposal fees proposed in the original proposal for two years.

What is your view of the business opportunity among the various regions? Are some of the compacts too small to support an exclusive region-only disposal facility?

A situation now exists where there is going to be a large cost differential between the compact dealing with less than 100,000 cu. ft. of waste and the compact with greater than 300,000 cu. ft. of waste. One of the things that has to be looked at is what investment has to be made just to maintain the site and keep the personnel employed.

One must consider that waste is delivered in very small amounts on an infrequent, non-cyclical basis. One way that the smaller compacts can maintain lower costs is by minimizing the capital investment and going out for services on an as-needed basis. For the larger compacts costs will depend on what fees are levied to handle post-closure liability or post-closure maintenance.

The Northeast Compact is now down to just two states, New Jersey and Connecticut. Would Westinghouse be interested in developing a low-level site there?

Only on the basis of a GoCo operation where the state government actually runs the business. Then a private company could come in and charge a certain fee for running the operation. There would have to be a a minimum fee for running the site regardless of the amount of waste that was brought in.

So, in your opinion some of these smaller compact regions are going to have to essentially subsidize disposal operation?

I believe so. My personal opinion is that many of the states will have to subsidize disposal operations if they want to get a viable option for the state and have the necessary funds for monitoring and safety.

What about a compact like the "Western" version, involving Arizona and South Dakota?

The low-level waste load is 20 cu. ft in one state about 20,000 in the other. I don't see how they can cost effectively run a site on 20,000-30,000 cu. ft. a year.

What about the Central Midwest Compact with Illinois and Kentucky?

Based on the amount of waste generated, I believe a site in this region would be a reasonable operation. But again, as technology requirements change, the economics will also change.

What about the Appalachian region? Pennsylvania, the host state, has banned the use of shallow-land burial so an engineered disposal site will have to be developed.

The costs of site development requiring some engineering technologies will go up. However, the cost associated with SUREPAK is competitive with shallow-land burial. Under Part 61 it's competitive on the short run. And, in our opinion, over the life-cycle it is cheaper than shallow-land burial.

In Illinois there is serious consideration of long term above-ground storage. Would developing this type of facility in this two-state region present a good business opportunity?

Based on the cost estimates which we submitted to California for an interim storage operation, I feel that-above ground, long term storage is a viable option for almost any state.

What is the length of the storage period -- 100 years?

No, it's greater than 100 years.

Are your cost and life-time estimates based on a SUREPAK type system?

Yes. The thing about SUREPAK and similar technologies is that they give you flexibility. These technologies isolate the waste into small volumes, provide the opportunity to monitor small volumes, and give you the opportunity of relocating that waste if the demographics of the situation change.

If you have a problem at a shallow-land burial site can you ever relocate the waste? The answer is probably no. Some of the studies that have been done during actual experiments in the past have identified cost on the order of $1000 to $1,500 a cubic foot for relocation of shallow-land or similar type technology burial operations.

What, in your view, will be the average cost of disposal at new sites?

I can only go on the basis of our California proposal. According to those proposals the costs will average anywhere between $8.00 and $20.00. As I recall, Chem Nuclear had about $9.00 a cubic foot for Class A, and then they had a tremendous amount for Class C -- something over $800 to $900. So it's going to range between $8.00 a cubic foot and $20 and some odd cents per cubic foot depending on how you treat it.

What about Class C waste. How high will the cost be?

The cost of Class C disposal will depend on how it comes in and what kind of pre-treatment there is. A better technology for pre-treatment of Class C at the generator site, rather than at the disposal site, could be developed. A much better product could then be shipped to the disposal site which would reduce disposal costs.

Where are you concentrating your effort. Are there certain regions of the country where a commercially owned and operated disposal business is not viable?

It's viable in some regions if they go to a service operation. If a region goes to a service operation where you can support the small disposal with a periodic service we can do that very economically.

Does the Rocky Mountain and Central States Region fit into this GoCo category?

Yes. And so does the Northwest. You take that segment of the country, you could run a waste service cycle around there that would be much more economical than initial investment by those compacts. It might not be as cheap or as inexpensive as a site in the Southeast or the Appalachian region, but it would be respectable with regard to those costs because they would not have a capital payoff; they wouldn't have an investment in there. Most of the capital equipment would be used by four or five small compacts which would make it a service type business rather than an operating business.

Another option to consider in these regions would be to use interim storage type sites so that you would marshal the amount of active waste in an above ground tumulus -- something like the French are using.

What about if New York went alone and Massachusetts went alone, would they generate sufficient business to develop a disposal facility?

You might get marginal returns with the average prices that were quoted for California. It would pay if they went GoCo. Then the whole scenario on costs changes.

You then think that New York and Massachusetts ought to think GoCo?

Yes, I do.

Given that political considerations warrant the development of more sites, what in your view is the optimum number?

A total of four is probably the right number. If you take the estimated national generation rate -- anywhere from three million to four million cubic feet per year -- and you divide it up, with the Southeast generating somewhere around a million and a half to a million eight, you have 3.2 million cubic feet remaining. Divide that by three more sites and you have reasonable return on investment, and a reasonable capability for generating revenues to maintain long time monitoring, long time maintenance and any remedial action that might be required due to future climatological or institutional changes over 200 years.

Any closing remarks or insights?

Let me close on this observation. Over the next seven years or so the surcharges set by the Low Level Policy Act will average, over the time period, something on the order of $25 - $30 per cubic foot for the generation of about 2-1/2 million cubic foot a year. We're talking about **$75 million** a year going into charges that don't bring any increase in safety or any increase in technology. Five years of that and almost half a billion dollars goes into a situation where you are defending the status-quo rather than looking at what should be the solution that improves site development or makes the schedule of completion of these compacts and sites more probable. After all, it is fairly evident that public acceptability will be the principal driving force behind site approval. People are not going to accept the minimum as far as disposal sites are concerned, and the minimum at the present time is 10CFR 61.

So you look at this situation and you think "what does it take to get institutional credibility?" If you look at it from a standpoint of additional charges for an engineered disposal so the utilities don't have to build another set of buildings in three or five years, or so, you don't have to go through a whole series of litigations under an EIS or EAs, it behooves us to look at new technologies.

We must be looking at this angle, not going with the basic minimum of what we know now, but going on a basis of what's an economically feasible long term alternative so we get the problem solved. It hasn't been solved in the last ten years and in my view it cost the country over $2 billion which hasn't gone into value-added. It has gone into delay and the substitution of on-site storage and litigation for solutions to the problem.

IN THE MIDWEST

At a special May 16 session convened to review qualifications of outside contractors specializing in providing "public relations" support, the Midwest Compact Commission failed to reach a decision on a single contractor and requested that the two finalists -- **ERM-Midwest and JK Associates** -- who were selected on a tie Commission vote, work out an arrangement to provide the requested support. ERM-Midwest, as the current primary outside technical support contractor to the Commission, was asked to take the "lead" and develop an acceptable arrangement.

The individual within JK Associates that would be responsible for their part of this effort, if it is arranged, is Susan Wiltshire.

Effective July 1, **Richard Paton** the current **Midwest Compact** Executive Director will be leaving to accept a position with US Ecology in Louisville, KY. Good luck to you Richard, US Ecology is getting a good man.

IN THE ROCKY MTN WEST

At the May 6 meeting of the Rocky Mountain Compact Board, the state of New Jersey's application for a permit to dispose of 7500 cubic yards of Type A waste, Radium-226 salts in soil not exceeding 2000 picocuries per gram, at the Beatty Regional Disposal facility was denied. Nevada's earlier rejection of New Jersey's request is currently involved in a litigative proceeding before a Master in the U. S. Supreme Court.

N THE NORTHWEST

Within the next two weeks to a month, the **Department of Ecology's Nuclear Waste Programs Office** and the **Department of Health Services Office of Radiation Protection** will be holding public hearings on "Emergency Regulations" governing the use of the Hanford facility. Two of the regulations are currently in effect, but must proceed through the rulemaking process to become final. Another should have been issued by the Office of Radiation Protection on May 15, and will be in effect on an emergency basis from the date of issuance.

The Nuclear Waste Programs' "Emergency regulation" covers prenotification, generator and broker information forms, and surcharge payment procedures which were re-issued on an emergency basis on April 15 (See EXCHANGE Vol. 5 No. 7). The public hearing is planned for June. No firm date has been set. For more information call Elaine Carlin at (206) 459-6228.

The Office of Radiation Protection "Emergency regulation" **redefines LLRW generators and brokers**; requires that generators using the Hanford Disposal facility obtain site-use permits; and that generators and-or brokers prepare a radioactive waste shipment certification prior to shipping waste to the disposal facility. The definitions included in the emergency rules are as follows:

- "Generator" means the last person who puts radioactive material to practical use, and who then declares it to be no longer of use or value.

- "Broker" means a person who performs one or more of the following functions for a low-level radioactive waste generator:

  -- Arranges for the transportation of the low-level radioactive waste;
  -- Collects and/or consolidates shipments of such low-level radioactive waste;
  --Processes such low-level radioactive waste in some manner; provided it shall not mean a carrier whose sole function is to transport such low-level waste.

The shipment certificate which must bear the "original signatures of the Generator, Broker and Carrier (unless the Broker is acting as a packager of the waste, wherein only the Broker's original signature is needed) requires the name of the Generator, Broker, and Carrier, the generator site-use permit number, and the volume of waste shipped. In signing the certification each party agrees to "indemnify and hold harmless the state of Washington, in ar-

amount not to exceed $1,000,000 per individual who may be injured, provided that indemnification shall not exceed $5,000,000 in total for each occurrence, from any and all claims, suits, losses, damage, injury and expenses to any person whomsoever or to property arising or growing out of or in any manner connected with activities performed".

A public hearing on this Emergency Regulation is scheduled for May 27, 1986, in Olympia, Washington at 2:00 pm. Written comments are also due at that time. A final decision will be issued on May 30. For more information contact Nancy Kirner at (206) 753-3459.

The Emergency Regulation expected to be released (on or about May 15) covers the acceptance of **Naturally Occuring Radioactive Materials (NORM)** at the Hanford facility. According to Nancy Kirner, Head of the Waste Management Section within the Office of Radiation Protection, this Emergency Regulation will limit the amount of NORM waste that a generator can deliver to the Hanford commercial LLRW facility. The regulation which also will be in effect on an emergency basis when it is issued specifies that:

-- No generator with a site-use permit may deliver more than 1,000 cubic feet of solely NORM waste with a concentration of less than .002 micro curies, excluding source material, to the Hanford facility over a period of a year.

This limitation requirement will be enforced in the following manner:

-- A generator site-use permittee is allowed to deliver NORM waste with a concentration less than .002 microcuries per gram if the total amount delivered is less than 1000 cubic ft. per year.

-- A generator site-use permittee with NORM less than .002 microcuries per gram but who produces more than 1,000 cubic feet per year is limited to disposing of only 1,000 cubic feet in any given year.

According to Ms. Kirner the purpose of the regulation is to save disposal capacity; to take care of small naturally occuring radioactive material processors; and prohibit the disposal of large quantities of slighty radioactive materials at the facility.

The 1,000 cubic feet per year limit was arrived at by dividing the site disposal "cap" for Hanford set by the LLRWPAA -- 1.4 million cubic feet per year -- by the approximately 1,400 generators that use Hanford.

AT DOE

A. David Rossin, a Vice President at EPRI for Nuclear Safety Programs, who served on the DOE-LLRW program review committee, is slowly taking charge of DOE's Nuclear Engineering (NE) program. He is expected to be confirmed as the DOE's Assistant Secretary for NE by June 1.

IN THE NRC

BRC WASTE POLICY The developement of the Nuclear Regulatory Commission's Below Regulatory Concern (BRC) policy guidance is still on track for release in July 1986. (Background: Under the LLRWPAA, the agency is recquired to issue regulations to designate BRC waste streams by July 15. Since a rulemaking could not be compleated in that time period the agency staff elected to develop a Commission Policy statement which they hope will satisfy the law and Congress' intent.) A draft of this proposed policy position has been completed, and agency staff are beginning to discuss aspects of the proposal with outside groups. As reported in the EXCHANGE (Vol. 5 No. 4) the policy will set out general guidelines on how one can petition the Commission to obtain a BRC designation. Each petition would then be considered through a separate rulemaking. From what the EXCHANGE has learned thus far the policy guidance will:

-- strongly urge petitioners to only seek BRC designation where overall exposure from the subject waste stream is below 1 millirem per year.

-- govern the waste stream as it is released by the generator off the site.

Areas that are of continued concern are: establishing BRC guidance for ash from the burning of LLRW, and what EPA will decide regarding the designation of waste oil as a hazardous material. If EPA does designate waste oil as a hazardous waste than a NRC-BRC process for it would be useless. **

IN THE INDUSTRY

Aeorojet-General, is requiring its subsidiary **Aeorojet Energy Conversion** to conduct further tests with the incinerator destined for Commonwealth Edison in Illinois. (See EXCHANGE Vol. 5 No. 6). According to reports received from the incinerator manufacturer, the test that is being required is in-line with standard company policy which requires equipment to be operated continuously, for the time period specified in the contract "specs", before delivery to the purchaser. This will entail the incinerator being operated non-stop for thirteen days under actual operating conditions. The test run is expected to commence the first week in June. Over the thirteen days the equipment will process 80,000 lbs. of dry waste in 1200 drums. The waste mix will consist of 40-50 percent paper with the remainder being plastic. All of this is to result in the production of 2 drums of ash. **

REPORTS OF NOTE (LLW)

Technology Development for the Design of Waste Repositories at Arid Sites: Field Studies of Biointrusion and Capillary Barriers. (LA-10574-MS UC-70B); Los Alamos National Laboratory, Los Alamos, New Mexico 87545; The field research program involving the development of technology for arid shallow land burial (SLB) sites is described. Results of field testing of biointrusion barriers installed at an active low-level radioactive waste disposal site (Area G at Los Alamos are presented. A second experiment was designed to test the ability of a capillary barrier to effectively convey water infiltrating a SLB trench around and away from underlying buried wastes. The performance of the capillary barrier was tested in the field for a barrier of known thickness (2 m), slope (10%, and slope length (2 m), and for one combination of porous materials [a crushed tuff-clay (2% w/w) mixture overlying Ottawa sand] subjected to a known water addition rate. The waste management implications of both studies are also discussed.

the HLW Focus of the Radioactive Exchange®

(Spent Fuel from pg. 1)
Carl did report that shipments did take alternative routes at the request of state officials, but "all in all a good working relationship ....was established with the states."

Long-Life Cycle Test

The 69 spent fuel assemblies at INEL are to be loaded into three casks:

-- GNS CAster VC-21 (24 assemblies)
-- TN-2400 (24 assemblies)
-- Westinghouse MC-10 (21 assemblies)

and the long term dry storage test demonstration will be underway. The life cycle testing will include monitoring external and interior temperatures, external radioactivity, and any build up of gases in the interior of the casks. The testing and certification program can last up to twenty years. **

HLW PROGRAM LIFE CYCLE COST ESTIMATE UP 41 %

The just released Department of Energy Office of Civilian Waste Management Program's "Analysis of the Total System Life Cycle Cost for the Civilian Radioactive Waste Management Program" (TSLCC) estimates that the "current total system costs are 6 to 41 percent higher than the costs in the July 1983 analysis". The highest percentage increase in the estimated costs over the 1983 analysis occurred in the "Development and Evaluation" (D&E) phase, with increases ranging from 67 to 74 percent. In contrast, transportation cost estimates decreased between 44 to 67 percent. The cost for the two proposed repositories is estimated to increase by up to 60 percent because of "additional work content, different engineering designs, and a wide range of repository site combinations."

Repository Cost Comparison

According to this TSLCC analysis the highest total system life cycle costs would be incurred for a first-round basalt repository coupled with a second round "high cost" generic crystalline repository -- $32.3 billion (1985 dollars). The lowest cost estimates are projected to occur with a combination of a tuff and a generic "low cost" crystalline repository -- $23.6 billion (1985 dollars).

Key Findings of 86 Analysis

Listed among the "key findings" of this 1986 analysis are the following:

o The total-system cost for the authorized system in the reference case is estimated to be zero to $2.6 billion higher than the reference program (EIA Mid-case) costs (expressed in constant 1984 dollars) estimated in the January 1985 TSLCC analysis. The maximum total-system-cost increase ($2.6 billion) arises from a $3.9 billion increase in repository costs, a $1.6 billion increase in development and evaluation (D&E) costs, and a $2.9 billion decrease in transportation costs. Most of the transportation-cost decrease ($2.5 billion) is due to the use of the relatively inefficient current transportation-cask technology in the Janu-

ary 1985 analysis. (**N.B.** the EIA Midcase estimates 126,600 MTU of spent fuel through 2020.)

- The total-system cost for the improved-performance system (MRS + Repository) in the reference case ranged from $26.2 to $34.0 billion, depending on the repository-site combination. For the same reference case repository-site combination, the incremental cost of the improved-performance system over the authorized system ranges from $1.7 (for a basalt-tuff combination) to $2.6 billion (for a tuff-low-cost crystalline rock combination).

- The maximum incremental cost of the improved-performance system of $2.6 billion in the reference case is increased to $3.0 billion (for the same repository-site location combination--tuff/low cost crystalline rock) when the EIA "no new orders" case (87,400 MTU) is substituted for the EIA midcase projection (126,600 MTU).

- The maximum total-system cost is estimated to be $40.5 billion. This cost would be incurred by the improved-performance system in the case of a 10-year repository delay, with the first repository in basalt and the second repository in generic high-cost crystalline rock.

- Delays in the start of repository operations would increase the total-system cost from $3.2 (5-year delay) to $6.8 billion (10-year delay). The impact is virtually the same regardless of the repository-site combination or the system configuration.

- In the repository-delay cases, the MRS facility in the improved-performance system experiences several years of limited or no receipt of spent fuel because the storage inventory limit of 15,000 MTU is reached (in the year 2005) before the first repository is operating at its design receipt rate. Consequently, to maintain the system waste-acceptance schedule, another acceptance mechanism, such as dry at-reactor storage, is required.

- In addition to the 32 TSLCC cases studied for the fee-adequacy analysis, a separate but preliminary analysis of the impact of **extended spent-fuel burnup on total-system costs** was also performed. The results indicate that the costs of extended-burnup fuel are essentially unchanged from those of the comparable constant-burnup cases. **

IN THE OCRWM

1st ROUND EAs Though the OCRWM staff is indeed very tight-lipped on the subject of the date of release of the final EAs and the site characterization recommendations on the first round repository, the Exchange has learned, that as of this week (May 16), the OCRWM documents had not reached the DOE Secretary. Everything is still at the program level. The Secretary's office is giving no firm commitment on the release date other than saying the EAs and site characterization recommendations will be issued "shortly".

THE DEFENSE HLW FEE OCRWM is now saying that the **Federal Register** notice on the Department's recommendation on the Defense Program's contribution to the HLW Fund should be issued by June 1. Again, OCRWM is emphasizing that the key element of the impending recommendation will not be the initial contribution estimate, but the methodology that will be used to periodically evaluate what the contribution should be. The recommendation on the fee has been split into two portions: one to cover the incremental cost increase of the repository due to the inclusion of defense waste; another fraction to be contributed towards the support of the basic program. It is that second element, ascertaining what Defense's contribution should be to the overall program, that has caused some of the delay on reaching agreement on a recommendation.

REORGANIZATION The OCRWM has undergone a reorganization. Effective May 9, the Siting Division will be abolished and the functions of the Site Evaluation Branch will be realigned into the Siting, Licensing and Quality Assurance Division, which was formerly the Licensing and Regulatory division. This Division is headed by Jim Knight. In addition the Economic and Intergovernmental Analysis Branch will be incorporated into the Repository Coordination Division. The staff and functions of both, Siting and Intergovernmental, will be transferred to the respective divisions. However, the position of Director of the Siting Division has been designated as "excess". Ellison Burton who occupied this position has been offered the option of being reassigned to a comparable position in OCRWM or taking early retirement. Though the reports are that he is expected to opt for "early retirement", he could not be reached for comment prior to this edition's deadline.

NEW APPOINTMENTS Sam Russo of Science Application International Corporation (SAIC) will be joining OCRWM as Associate Director of Resource Management. This position was left vacant following Bob Bauer's retirement. Prior to joining SAIC, Mr. Russo was with DOE-Defense programs.

CONTRACT PROTEST We have been remiss in not keeping you posted on the protest filed by NUS and Austin Co. with the General Accounting Office regarding the selection of Roy F. Weston Inc. to continue as the contractor providing technical support services to OCRWM. Both NUS and Austin submitted bids that were under Weston's. The contract is worth over $70 million. DOE suspended contract negotiations with Weston once the protest was filed. About a month ago, all parties met with the GAO official responsible for reviewing the protest. From what the Exchange has learned in the past couple of days, the GAO has made a "recommendation" to DOE on the protest. However, no DOE action has been "officially" taken (rumors abound of course). Under the governing administrative procedures, GAO makes a recommendation regarding the protest but the agency need not accept the recommendation. However, if the agency elects not to follow the recommendation, a written explanation must be filed. It should be noted that a contract protest of this nature is not uncommon. Over a couple of thousand have been filed with GAO over the past year.

ON THE MOVE

Barry Smith, of Battelle's Project Management Division Office in Washington, D.C. has moved on to join ICF Technology of Washington, D.C. ICF is one of the major subcontractors to Roy Weston, Inc. Weston was recently selected to provide technical support services to DOE's Office of Civilian Radioactive Waste Management.

ON SUBSEABED DISPOSAL

The **Congressional Office of Technology Assessment** has released their staff paper "Subseabed Disposal of High-Level Radioactive Waste." The findings and recommendations are identical to those included in the draft reported in the Volume 5, No. 5, edition of The Exchange. Copies can possibly be obtained from OTA. Contact Gretchen Hund (202) 226-2112.

UPDATE

STATUS OF UPCOMING REPORTS AND MILESTONES OF THE OCRWM
(5/18/86)

Project Decision Schedule -- Released. Available from OCRWM.

Proposal for Defense Contribution to the HLW Fund -- June 1? Still delayed by OMB.

Environmental Assessments for First Repository
Nominate at least five site as suitable for site characterization
Recommend three sites for detailed characterization and make preliminary determination of site suitability)
See story this Issue

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

Fee Adequacy Report -- Released.

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

Annual Report to Congress -- Released. Available from OCRWM.

Issue Transportation Institutional Plan -- delayed, 6/86.

Issue Program-Level Financial Assistance Guidelines -- ?

Issue 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.

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