

The

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

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WHITHER THE MRS? -- A LOOK AT POSSIBILITIES

With DOE prohibited by a Court Order from submitting a proposal to construct a Monitored Retrievable Storage (MRS) facility to Congress, the first scheduled file of briefs not scheduled until May, there is considerable doubt whether Congress will be able to give the proposal any further consideration during this session.

A worst-case scenario would have the Appeals Court not issuing an opinion for, say, sixty days following the initial filing of briefs in May. This means an order would be issued in late July or early August. Congress, however, would have adjourned and would be unlikely to spend much more time in session because of upcoming elections. So, even if the Court decides in favor of DOE instead of Tennessee, who in the Administration is going to be willing to push for action on the siting of a nuclear facility facing upcoming elections? IF the Court decides in favor of Tennessee, then what? (See **Whither MRS?** in the **HLW Focus**)

USERS OF RICHLAND LLRW SITE REQUIRED TO GIVE PRIOR NOTIFICATION

On March 10, 1986, the Washington State Department of Ecology announced that as of April 10 all users of the Richland LLRW disposal site must give three days notice prior to shipment of the waste to the facility. A detailed set of instructions has been issued, along with pre-notification forms which must be filled out by generators regardless of whether waste is sent directly to the disposal site or to a broker who may end up using the Richland site. The surcharge for out-of-region waste, \$10.00 per cu. ft., is in effect for all waste accepted for disposal after or on March 1, 1986. (See **DISPOSAL SITE USE NOTIFICATION**). **

APPLICATIONS TO USE BEATTY FACILITY ACCOUNT FOR 50% OF CAP

Over the past couple of weeks, Len Slosky, the Executive Director of the Rocky Mountain Compact, reports that he has processed applications requesting permission for disposal of over 100,000 cu. ft. of LLRW at the regional Beatty facility. If this pace continues Beatty should have sufficient applications to reach its annual volume cap before summer and could "close" its doors **

NC, AL, VA EXPECTED TO BE TOP-RANKED FOR SOUTHEAST LLRW FACILITY

According to a "technical ranking" compiled by consultant-contractor, Dames and Moore, North Carolina has received the highest score, based on technical criteria, over all other SE compact states in the "competition" to determine the next state to host a Southeast Regional LLRW disposal facility. Alabama received the next highest "technical" scores.

More importantly, from what the EXCHANGE has learned, the final ranking, which will incorporate the technical ranking in each of ten criteria along with weighting factors determined by ballot of the Southeast Commissioners, should again put North Carolina at the top of the list, followed by Alabama and Virginia.

The Southeast Commission meets on April 3-4 to further discuss the host state selection process and the final results of the balloting process to determine the weighting factors for the ten technical criteria. **

CALIFORNIA-DAKOTA COMPACT ADOPTED BY SOUTH DAKOTA

Within the past weeks the South Dakota legislature approved a two-state South Dakota-California LLRW Regional Compact providing that California will host, and bear all the liability for the regional LLRW disposal facility. Though there was some apprehension that Governor Janklow might not ratify the compact (even though he was initially a strong supporter), because of ongoing discussions with Arizona officials to form a two-state compact, he did sign the legislation into law on Saturday, March 15, 1986.

No Referendum Required

According to South Dakota state officials, the newly ratified two-state compact with California is not required to be approved by a statewide referendum as was the proposed two-state Dakotas compact. Under state law, and a state Supreme Court opinion, the referendum-adopted requirement, that a

compact involving South Dakota be submitted to a statewide ballot, was only applicable to activities of that particular legislative session. A statewide ballot on this new regional agreement would only be required if both Houses of the legislature adopted a resolution calling for such action.

Best Available Disposal Technology

An interesting aspect of the California-Dakota compact, which was introduced with almost the identical language into the California Assembly by Assemblyman Steve Peace, is language stipulating that in the development of regional disposal plans provisions are to be made to include the use of the "best available disposal" technology.

This requirement, depending on just how it is worded, could have some impact on the activities already underway by US Ecology, the California LLRW disposal site license-designee. US Ecology was chosen license-designee last December when its proposal to develop a shallow-land disposal facility was accepted by the California Health Department (See EXCHANGE, Vol. 4, No.20). **

VA TO HAVE COMPREHENSIVE WASTE DEPT. WITHIN NEW NATURAL RESOURCES AGENCY

During their just-completed legislative session, the Virginia Legislature approved a bill supported by Governor Baliles that provides for the establishment of a Cabinet-level National Resources Agency which is to include a comprehensive Department of Waste Management. The legislation also includes provisions that ban the use of open dumps and provides further restrictions on the siting of hazardous waste facilities.

The newly created post of Secretary of Natural Resources will have jurisdiction over the activities of the Department of Conservation and Historic Resources; Marine Resources; the State Water and Pollution Control Boards; the Commission on Game and Inland Fisheries; and the newly created Department of Waste Management.

Radioactive & Non-radioactive Combined

The newly created Department of Waste Management is to be headed by an Executive Director to be appointed by the Governor and confirmed by the General Assembly. It is to have jurisdiction over all waste management activities -- solid waste, hazardous waste, and low- and high-level radioactive waste.

The legislation specifically directs that the Department of Health transfer all authority over solid and hazardous waste to the new "Waste" department. This means that the Department of Health's Division of Solid and Hazardous Waste Management will now be part of the new department.

The Solid Waste Commission and the Hazardous Waste Facility Siting Council are dissolved and their respective functions are assumed by the new department. The advisory roles of these bodies will be taken over, for the most part, by a newly created seven-member Virginia Waste Management Board. The members of this Board are to be citizens of the State appointed by the Governor for four-year terms. The initial appointments to the Board are, however, to be made for varying terms -- one to 4 years -- in order to provide some independence from changing gubernatorial administrations. **

NRC PROCEEDING TOWARD DEVELOPING "POLICY" ON DEMINIMUS LLRW

According to public statements made by various NRC staff and information obtained by the EXCHANGE, the NRC Waste Management Division is developing a proposed Commission policy statement on a deminimus waste designation process with the full intent of having it become effective by mid-July. Under the Low Level Radioactive Waste Policy Amendments Act of 1985 (LLRWPA), NRC is required to issue by July 15, 1986, "standards and procedures...and develop the technical capability for considering and acting upon petitions to exempt specific radioactive waste streams from regulation." Because of the short time frame within which the Agency was required to act, the Commission staff

determined that it was impossible to go through a generic rulemaking and has thus decided to proceed to propose a Commission policy statement. This proposed statement would outline the type of information that would be required of petitioners seeking a deminimus designation for a specific waste stream and the type of candidate waste streams that could be handled by the NRC expeditiously. It would be incorporated into CFR Part 20.306.

Burden of Proof on Petitioner

Under the petitioning process as currently envisioned by the NRC staff, the burden of proof will be on the petitioner. Each petition for a deminimus designation for a specific waste stream would be treated as an individual rulemaking. The intent is to have the proposed Commission policy statement lay out the procedures for the consideration of a petition, with the expectation that an expedited rulemaking process can possibly be developed.

As envisioned by the staff the policy statement will not provide a generic basis for deminimus designation. It will be limited solely to determining what waste may not be required to be sent to a Part 61 licensed burial facility and sent, instead, to a hazardous waste or sanitary landfill site.

Coordination with the EPA

NRC staff is expected to coordinate their proposed deminimus policy development with EPA, probably providing the environmental agency's Office of Radiation Programs (ORP) the opportunity to comment on early drafts. And, though the ORP staff is planning on releasing a proposed LLRW standard including a "Below Regulatory Concern" provision, by December 1986, NRC is not required to wait until EPA's release, or specifically required to coordinate their actions with ORP.

Though no one at NRC would provide any comment as to the substance of the policy statement, the EXCHANGE has learned that the staff is making extensive use of the United Kingdom's generic deminimus guid-

ance and the Canadian proposed guidelines for below regulatory concern waste issued in August of 1985. **

RESOLVING THE MIXED WASTE PROBLEM: BAN ITS DISPOSAL AT LLRW SITES?

According to sources in and out of the NRC and Congress, the solution to the mixed waste jurisdictional conflict between EPA and NRC may be to have NRC proceed through a formal rulemaking prohibiting the disposal of mixed waste at low-level radioactive waste (LLRW) facilities, and putting in place regulations allowing mixed-waste disposal at EPA-RCRA regulated disposal sites. After meetings with officials from both agencies on Capitol Hill last week, this solution is finding some support among key Congressional staffers and NRC staff.

RCRA Siting Guidelines in 1988?

The reason behind such proposals is that, at a March 12 meeting on Capitol Hill, EPA staff informed those in attendance that it is currently proceeding under the 1984 RCRA mandate to develop siting guidelines for facilities accepting hazardous waste, which would include mixed waste. These regulations, however, will not be issued until 1988.

Even if the environmental agency could meet this deadline, the 1988 date could significantly impair non-sited states from proceeding toward preparing a license application for new LLRW disposal facilities, and thus affect compliance with the mandated disposal site development milestones stipulated in the LLRW Policy Amendments Act of 1985.

In lieu of legislation that could resolve the jurisdictional conflict, serious thought is now being given to having NRC proceed with a rulemaking prohibiting disposal of mixed waste at LLRW facilities and giving EPA jurisdiction over such waste by, either having NRC setting radioactive criteria that would remove the waste from their jurisdiction, or executing an agreement with EPA that would allow the environmental agency to enforce NRC regulations.

There seems to be some definite support for this approach. As one influential individual remarked to the EXCHANGE, the initial concern over the disposal of mixed waste was what would happen to scintillation vials. Now, however, according to information from the medical community, most of this waste is being shipped and dealt with by the Quadrex facility in Florida. The remainder is not a significant volume.

House Hearings in April

The expected joint hearing on the mixed waste issue before Congressman Markey's Subcommittee on Energy Conservation and Power and Florio's Subcommittee on Commerce and Tourism is now scheduled for April 10. House Interior is planning a hearing on April 24. There is no indication at this time that either House Committee is leaning toward giving EPA the site responsibility to regulate the disposal of mixed waste.

Effect of Kerr-McGee on Mixed Waste

On another front, but one that could have direct bearing on regulation of mixed waste, is the ongoing Congressional investigations into the incident that occurred at Kerr-McGee. As NRC officials and others have maintained, the severity of the Kerr-McGee accident was due more to the mishandling of hazardous chemicals, not under NRC jurisdiction, than by the presence of radioactive materials. What has been uncovered in the course of the Congressional inquiry is another gaping hole in the current regulatory scheme over materials that are hazardous, and radioactive, and in use at a NRC licensed facility. This has definitely heightened the awareness of the jurisdictional conflict between EPA, NRC and even OSHA. Possible regulatory initiatives to deal with the "use" of mixed materials will definitely affect the current mixed waste jurisdictional conflict.

On March 20, NRC Chairman Palladino and EPA Administrator Lee Thomas are scheduled to hold what could be best described as a "summit" meeting to begin to

move toward resolution of the regulatory voids that some view as responsible for the occurrence of the Kerr-McGee incident. **

PART 61 OK FOR ALTERNATIVE DISPOSAL TECHNOLOGIES, STANDARDIZATION URGED

In the recently released draft "Branch Technical Position Statement on Licensing of Alternative Methods of Disposal for LLRW," NRC's Waste Management Division concludes that alternative disposal technologies can be licensed under current NRC regulation 10 CFR Part 61, and "strongly encourages industry and the States to pursue standardization in developing alternative waste disposal methods." The draft position was issued in the March 6 **Federal Register** (Vol. 51, No. 44, pp. 7806-11). Division Director Browning had announced that the issuance was forthcoming at the recent EXCHANGE Workshop in Washington, D.C., and Waste Management '86 in Tucson. Written comments on the draft and responses to a series of staff questions are requested. The comment period expires May 5, 1986.

The primary purpose behind the issuance of this draft is to address the "question of whether disposal methods employing engineered structures and barriers can be licensed under existing requirements in 10 CFR part 61. The plain and simple answer of this draft position is "yes".

Position Based on Army Study

The NRC staff position is based on the already published work of the U.S. Army Corps. of Engineers' Waterways Experiment Station, which studied, under contract to the NRC, five alternative disposal methods: below-ground vaults, above-ground vaults, earth-mounded concrete bunkers, shaft disposal and mined cavities. [Editor's note: As of this date (March 18, 1986) the report on mined-cavities has yet to be released. The reports on the other four technologies are included in NUREG documents NUREG-CR 3774, Vol. 2-5, See EXCHANGE Vol. 4, No. 19; Nov. 14, 1985.]

General Guidance Provided

The draft branch technical position paper encourages the submission of detailed technical information on alternative disposal technology prior to license application, suggesting that this may "reduce considerably the time needed for license application review." It suggests that proposed designs for alternatives reflect the benefits of "significant" R&D activities and "experience gained from waste disposal operators in the U.S. and other countries."

Accordingly, the draft position explains that NRC waste management staff will encourage design innovations which "are supported by a proven technology" or "can be demonstrated by a satisfactory technology development program."

Standardization of Designs Urged

A very strong argument is made for the development of "standardized approaches" of alternative disposal technologies. According to the proposed draft, standardization would concentrate the resources of waste engineers and vendors on particular approaches, stimulate standardized programs of construction practices and quality assurance, and "facilitate more effective licensing and inspection processes." It is the stated intent of the NRC staff to give greater priority, and focus more resources, on approaches which would be of greatest interest to the states. Reflecting this very strong inclination toward standardization, the staff strongly encourages a cooperative effort between the states and industry, and the "earliest possible interaction between potential license applicants, the waste disposal service industry, states, other governmental agencies and the NRC."

Guidance on Alternative Designs, Siting

The draft technical position paper cites the U.S. Army Corps. of Engineers NUREG reports as references for specific guidance on the already studied disposal alternatives. It cautions against developing designs that would rely on any one component, supporting concepts where all

components would "interact" to achieve performance objectives.

On the matter of siting, the draft position clearly states that "Engineered structures and barriers should not be viewed as a planned substitute for a suitable site." Instead "engineered features", incorporated in alternative designs, should offer the public enhanced confidence in proposed disposal plans.

Since waste retrievability from disposal structures has been voiced in various regions, the draft expresses caution that "retrievability should not compromise or otherwise lessen the ability of the technology to meet Part 61 performance objectives."

Variations On Waste Classification

Though the draft position recognizes that an "alternative waste classification system may be proposed by a license applicant," as long as it is compatible with the performance objectives of Part 61, it cautions against such action commenting that "alternative waste classes have the potential to confuse waste generators." In lieu of reclassification the NRC staff urges states to consider "more restrictive waste forms or packaging or alternative emplacement methods."

Institutional Control Requirements

Because alternative disposal concepts now being considered include uncovered above-ground facilities, the proposed technical position statement calls attention to the possible need for "additional controls and a more comprehensive program to exclude the public from the site during the active institutional control period." It is pointed out that though Part 61 provides that "institutional controls cannot be relied upon for more than 100 years" longer periods of control are not prohibited. However, any proposed longer control periods should not be necessary to assure long term performance of an alternative disposal technology

Responses Requested

In addition to requesting comments on the proposed "guidance" contained in the draft branch technical position, the NRC staff is requesting responses to a series of four questions:

1. Are there disposal concepts being considered other than earth-mounded concrete bunkers, below-and above-ground vaults and shafts?
2. Are additional specific regulatory guidance documents needed beyond the already issued NUREG documents?
3. Should NRC actively solicit and review a reference design concept? What aspects of a disposal facility are amenable to standardization?
4. Should NRC licensing procedures for an alternative disposal approach include a pre-application review of site suitability issues, prior to consideration of a license to construct and operate such a facility? **

BARNWELL ACCEPTANCE OF BITUMEN LLRW HELD UP BY STATE, "AZTEC" LLRW OK

One of the "hot" out-in-the-hall discussion topics among waste processing vendors and utility representatives at Waste Management '86 is the current prohibition on disposal of bitumen-solidified LLRW at Chem Nuclear's Barnwell disposal facility. Several individuals were overheard to comment that the prohibition was intended more to advance the use of Chem Nuclear's concrete containerization techniques than to meet any regulatory restrictions. However, officials from the South Carolina Bureau of Radiological Health contacted by the EXCHANGE this past week explained that Chem Nuclear was acting under state regulations that were currently in effect.

According to Virgil Autry, of the Radiological Health Division, bitumen containerized LLRW cannot be accepted under current state regulations until NRC has completed evaluation of the topical report regarding the waste form. He added that

the state had met with industry representatives in the past week (March 10-15) and explained what information was needed. He reported that the primary concern of the state is over the "creep rate of the bitumen under burial conditions in the trench."

One of the problems will be NRC approval of the topical report. According the Waste Management Division staff there is a backup of about 18 topical reports on waste forms awaiting approval.

Chem Nuclear Perspective

Chem Nuclear officials contacted by the EXCHANGE reiterated the necessity for vendors to supply creep data for "bitumenized waste" under burial conditions. They also emphasized that within the past week a company memo had been issued directing all relevant company managers to work with the vendors and utilities using bitumen technology and the State of South Carolina toward the acceptance of bitumen LLRW at the Barnwell facility.

In response to the criticism that Chem Nuclear was not accepting bitumen waste in order to promote its own concrete containerization process, the officials emphasized that this was definitely not the case. It was not in Chem Nuclear's interest to do so, since the profit margin on accepting bitumen waste for disposal would be greater than selling their own concrete processing technique.

The state radiological agency and Chem Nuclear both implied that once NRC approves the topical report on bitumenized waste forms, and acceptable data was provided on creep, under trench conditions, bitumen waste would be accepted at the facility. It was also noted that there exists the possibility of accepting bitumen waste if it was containerized to retain its shape while relying on the bitumen to maintain the necessary leaching properties.

AZTEC Waste Not Affected

When asked if the prohibition on bitumen waste was also in effect for waste that had

been solidified by the AZTEC process, Chem Nuclear and the State emphasized the direct opposite. Mr. Autry reported that for all practical purposes "the AZTEC solidified waste was approved for acceptance at Barnwell pending issuance of a license amendment to Chem Nuclear." He explained that the AZTEC process resulted in a waste form that exhibited no creep and which had a high compressive strength. **

ATI ACQUIRED BY US ECOLOGY, AWARDED "SIGNIFICANT" NEW CONTRACTS

American Ecology Company, the parent company of US Ecology and National Ecology, has acquired Associated Technologies, Inc., the Charlotte, North Carolina waste technology firm. ATI's Chief Executive Officer, Ed Day, called the move "a very welcome event." Mr. Day explained that the American Ecology-ATI acquisition will benefit both firms, with ATI obtaining needed financial resources and Ecology gaining sound engineering expertise on LLRW processing technologies.

ATI is to function as a sister company to US Ecology, operating as a wholly owned subsidiary of American Ecology. ATI officers will report to the American Ecology headquarters in California. The terms of the purchase agreement have not been disclosed and probably will not be.

New Contract Awards

Within days of completing final negotiations on the acquisition, ATI was awarded a contract by Rockwell International of Hanford, Washington, to design, fabricate and install a Transportable Grout Equipment System at the Hanford site. The system will be capable of feeding, blending and pumping grout slurry comprised of Rockwell proprietary materials and "medium" level nuclear waste (HLW and truwaste) currently stored in underground tanks to prepared long term storage sites. The technology for the system was developed by the Department of Energy. The grout mixture is a product of Oak Ridge National Laboratory R&D.

SGN of France is a subcontractor to ATI on

this project. The French firm's long experience in remote handling of radioactive materials made it a significant contributor to the ATI competitive proposal. The

project is expected to be completed in 14 months, with the contract valued in excess of \$5 million. **

REPORTS OF NOTE (LLW)

Modified Sulfur Cement Solidification of Low-Level Wastes, Topical Report; (BNL 51923); Brookhaven National Laboratories, Nuclear Waste Research Group, prepared for the U.S. Department of Energy National Low-Level Waste Management Program. This topical report describes the results of an investigation on the solidification of low-level radioactive wastes in modified sulfur cement. The work was performed as part of the Waste Form Evaluation Program, sponsored by the U.S. DOE's Low-Level Waste Management Program. Processing of waste and binder was accomplished by means of both a single-screw extruder and a dual-action mixing vessel. Waste types selected for this study included those resulting from advanced volume reduction technologies (dry evaporator concentrate salts and incinerator ash) and those which remain problematic for solidification using contemporary agents (ion exchange resins).

Process development studies were conducted to ascertain optimal process control parameters for successful solidification. Maximum waste loadings were determined for each waste type and method of processing. Property evaluation testing was carried out on laboratory scale specimens in order to compare with waste form performance for other potential matrix materials. Waste form property testing included compressive strength, water immersion, thermal cycling and radionuclide leachability.

Recommended waste loading of 40 wt% sodium sulfate and boric acid salts and 43 wt% incinerator ash, which are based on processing and performance considerations, are reported. Solidification efficiencies for these waste types represent significant improvements over those of hydraulic cements. Due to poor waste performance, incorporation of ion exchange resin waste in modified sulfur cement is not recommended.

Management of Radioactive Mixed Wastes in Commercial Low-Level Wastes [Draft Report for Comment]; (NUREG/CR-4450; BNL-NUREG-51944); C.R.Kempf, D.R. MacKenzie, B.S. Bowerman, Brookhaven National Laboratory, Upton, N.Y. 11973; Prepared for Division of Waste Management, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555 NRC FIN A3173. Management options for three generic categories of radioactive mixed waste in commercial low-level wastes (LLW) have been identified and evaluated. These wastes were characterized as part of a Brookhaven National Laboratory study in which LLW generators were surveyed for information on potential chemical hazards in their wastes. The general management targets adopted for mixed wastes are destruction, immobilization, and reclamation. Solidification, absorption, incineration, acid digestion, wet-air oxidation, distillation, liquid-liquid solvent extraction, specific chemical destruction techniques, and substitution have been considered for organic liquid wastes. Containment, segregation, decontamination, and solidification or containment of residues, have been considered for lead metal wastes which have themselves been contaminated and are not used for purposes of waste disposal shielding, packaging, or containment. For chromium-containing wastes, solidification, incineration, wet-air oxidation, acid digestion, containment and substitution have been considered. For each of these wastes, the management option evaluation has included an assessment of testing appropriate to determine the effect of the option on both the radiological and potential chemical hazards present. This report was mailed to state officials and licensees within the past three weeks. Comments are requested. If you have not received a copy write: Dr. Paul L. Piciulo, Low-Level Waste Technical Assistance Group, Department of Nuclear Energy, Brookhaven National Laboratory, Building 830, Upton, N.Y. 11973.

Conference Notes

WASTE MANAGEMENT '86....OBSERVATIONS....LLRW PAPERS, DISCUSSIONS, ETC...

Overview

Low-level radioactive waste management played a more prominent role in this conference than perhaps in any other. A very much improved exhibition of vendor wares was primarily devoted to LLRW processing technologies and techniques. Again, the mix of vendors, state and federal agency officials, utility managers and consultants was very good, providing an excellent opportunity for interaction. The problem is that with the multiplicity of concurrent sessions, informal discussions usually had to be undertaken at the expense of not attending a panel session.

A noteworthy luncheon speech by NRC Commissioner Bernthal touched on several LLRW issues now under consideration at the NRC. Panel sessions on the Low-Level Waste Policy Act and state LLRW disposal site developments attracted standing room only crowds. The treatment and regulation of mixed waste was the focus of several papers.

All in all the extent to which this particular conference covered LLRW is enough to warrant the purchase of a set of proceedings if you happen not to have attended, or if you attended and found yourself out in the corridor more than inside meeting rooms listening to papers. What follows is our perception of interesting points or issues raised in conversations or in papers.

Commissioner Bernthal Remarks The remarks of Commissioner Bernthal on LLRW issues are notable for a couple of reasons. It isn't often that a Commissioner pays attention to LLRW, and he reinforced some staff proposals now appearing in print and in the Federal Register.

He noted orphan wastes as a continuing NRC concern and urged the Congress to settle the question of mixed waste regulation. He remarked that the Nuclear Waste Policy Act and the recent Low-Level Radioactive Waste Policy Amendments Act resolved a number of orphan waste problems, and that NRC must now get on with the job of defining the full range of wastes involved.

Addressing the subject of low-level waste disposal alternatives, the Commissioner indicated that the agency is going to provide early views on alternative technologies. He then urged the states to avoid customizing, and to "learn the joys of standardization in pursuing specific technologies." This supports NRC Waste Management Division's staff recently published position on standardization (See related story in this issue).

DOE Waste Disposal The fact that the future of LLRW disposal lies in the application of alternative technologies and engineered structures was again demonstrated by a DOE paper outlining their new approach to waste disposal. In this presentation, DOE relates how cost recovery, in so far as waste disposal is concerned, has now given way to the new philosophy of a "systems approach to waste management," wherein "near-term and long-term costs versus performance must be evaluated on a systems basis." DOE explained that the implementation of this approach will include: consensus building with regulatory agencies on performance requirements; the development of engineered barriers; regulation by performance evaluation; and other techniques not employed by DOE in the past.

LLWPAA and State Siting The two panel sessions on the regional compacts and the consent legislation drew standing room only crowds and resulted in extra long Q&A sessions. A difference in approach between compacts trying to determine where new disposal sites would be located vividly demonstrated that not all compact regions are approaching solutions to this problem in the same manner.

Some attendees, who were generators or brokers found out that the sited-states are in

