

Approved: 3-17-98
Date

MINUTES OF THE HOUSE COMMITTEE ON ENVIRONMENT.

The meeting was called to order by Vice-Chairperson Joann Freeborn at 3:30 p.m. on February 16, 1998 in Room 526-S of the Capitol.

All members were present except: Rep. Steve Lloyd - excused
Rep. Kent Glasscock - excused
Rep. Laura McClure - excused
Rep. Vaughn Flora - excused
Rep. Tom Sloan - excused
Rep. Sharon Schwartz - excused

Committee staff present: Hank Avila, Legislative Research Department
Mary Ann Graham, Committee Secretary

Conferees appearing before the committee: Ron Hammerschmidt, PhD, Director, Div. of Environment, KS Department Health and Environment, Forbes Field Bldg. 740, Topeka, KS, 66620-0001

William Bider, Director, Bureau of Waste Management, Div. of Environment, KS Department Health and Environment, Forbes Field Bldg. 740, Topeka, KS, 66620-0001

Others attending: See attached list

Chairperson Joann Freeborn called the meeting to order at 3:30 p.m. She announced that committee members will be getting a revised agenda for this week. **HB2925** concerning the Kansas river; designating certain reaches to be used for certain purposes, will be heard on Wednesday, February 18 and on Thursday, February 19, two Senate bills, which are supported by the Kansas Water Office, will be heard. Also possible action on previously heard bills. Minutes of the January 27, 28, and 29 meetings had been distributed and the Chairperson asked members to review these and if anyone has corrections they should contact her office in a couple of days or submit written corrections.

The Chairperson welcomed Dr. Ron Hammerschmidt, KDHE. He briefed the committee on the Central Interstate Low Level Radio-active Waste Commission report. Known as (LLRW). Congress through Low-Level Waste Policy Act and Amendments created a policy that states should be responsible for the management of low level radioactive waste. This act was initially passed in 1980 and amended in 1985. The Supreme Court interpreted states' responsibilities under the act in 1992. Dr. Hammerschmidt explained the definition of low level radioactive waste, discussed the status of the facility siting process and project costs. One of the utilities mentioned was Wolf Creek. He provided an additional number of 1997 reports, 1997 Report to Congress; the Draft Safety Evaluation Report and Executive Summary; and the Draft Environmental Impact Analysis and Executive Summary. (See attachment 1) Dr. Hammerschmidt announced that a hazardous clean up program for the collection and disposal of mercury has been established within the Department.

Dr. Hammerschmidt introduced Patrick Hurley, representing Wolf Creek, who was in attendance today.

Chairperson Freeborn welcomed Bill Bider, KDHE. He briefed the committee on the Kansas Solid Waste Program report, an assessment of state needs and program expenditures. He presented a map of Kansas showing locations and types of permitted solid waste facilities. He discussed permitted disposal and processing facilities for 1997, which total 369, and about 1000 closed or abandoned dumps. He reviewed a flow chart showing the KDHE solid waste program staff and discussed the program expenditures and grants. He also discussed the recommended uses for the solid waste fund and showed graphs concerning tipping fees. In conclusion he discussed major report recommendations. (See attachment 2) Mr. Bider reported on the waste tire program which is going well. He believes waste tire piles should be disposed of by mid summer and within two years there will be an on going management program. Discussion followed.

CONTINUATION SHEET

MINUTES OF THE HOUSE COMMITTEE ON ENVIRONMENT, Room 526-S Statehouse, at 3:30 p.m. on February 16, 1998.

Chairperson Freeborn thanked Dr. Hammerschmidt and Mr. Bider for their presentations and committee members and guests for their attention.

The meeting adjourned at 4:50 p.m.

The next meeting is scheduled for February 17, 1998.



KANSAS
DEPARTMENT OF HEALTH & ENVIRONMENT
BILL GRAVES, GOVERNOR
Gary R. Mitchell, Secretary

Briefing on LLRW
to the House Environment Committee
February 16, 1998

By
Ronald F. Hammerschmidt, Ph. D.
Director, Division of Environment

I. Introduction

Congress through the Low-Level Waste Policy Act and amendments created a policy that states should be responsible for the management of low level radioactive waste. This act was initially passed in 1980 and amended in 1985. The Supreme Court interpreted states' responsibilities under the act in 1992.

The response of states was the creation of compact as encouraged by the federal act. The CIC was created in 1983. Member States: Kansas, Arkansas, Nebraska, Louisiana, and Oklahoma. The compact language for the Central Interstate Low Level Radioactive Waste Commission was subsequently enacted by the members. The Kansas act is KSA 65-34a01 amended in 1993. An amendment made in 1993 added a second commissioner for the host state. The Kansas amendment specified the change would not become effective until the host state issued a license or permit for the facility (KSA 65-34a01a). The accompanying statute on appointment of the commissioner for Kansas was amended in 1995 to make the commissioner a gubernatorial appointment rather than the Secretary of Health and Environment.

The commission selected Nebraska as the Host State with the site selected in Boyd County. Boyd County is in the extreme northeast section of Nebraska and borders on South Dakota. The developer chosen for the project was US Ecology. The developer submitted a license application for the site in July, 1990. After a number of modifications, the application was deemed complete on December 24, 1991. The developer responded to a number of rounds of technical questions which were completed May, 1995. On June 15, 1995 the developer submitted the eighth revision of the Safety Analysis.

Much of this background information is contained in the commission's annual report which I have attached for your reference and use.

II. What is LLRW?

The definition of low level radioactive waste is all radioactive waste which does not fit into one of the following categories:

Very radioactive material with long half lives (high level radioactive waste)

Spent nuclear fuel

Uranium or thorium mill tailings

The fuel rods from the Wolf Creek Nuclear Plant which are routinely replaced in refueling operations are not low level radioactive waste. Items which are low level radioactive waste include protective equipment such as disposable coveralls, towels, rags, etc.

There are three radioactive waste classifications: Classes A, B and C. Classification is determined by long lived or short lived radionuclides. Isotopes with either long or short half lives in low concentration are Class A. An example of Class A waste are naturally occurring waste in either ballast or other naturally occurring materials. The Envirocare facility in Clive, Utah is a primary Class A disposal site. Class B waste are materials containing isotopes with half lives in decades with concentration factors of 20 to 3,700 more than Class A. Class C waste contains isotopes which have half lives 10 times greater than Class B and are required to meet more rigorous requirements on waste stability. Class C sites must protect against potential inadvertent intrusion such as surface drilling. The Barnwell site in South Carolina handles both Classes B and C waste.

III. Status of the Facility Siting Process

In September 1996, the commission adopted a schedule for the issuance of Draft Safety Evaluation Report and Draft Environmental Impact Assessment. The commission also approved the use of a single public hearing process for these reports and a draft license. The state of Nebraska filed suit against the commission for this action.

On October 29, 1997 the Nebraska LLRW Program issued the two draft documents: Draft Safety Evaluation Report and the Draft Environmental Impact Analysis. The draft reports identified deficiencies in 29 of the 152 areas reviewed by the state and its subcontractors. The Draft Safety Evaluation draws no broad conclusion but does lead to draft license language. The Draft Environmental Impact Assessment contains the following quote on page 11 "**All potential**

adverse environmental impacts can be mitigated except for sociocultural impacts. These impacts are characterized by the tension and conflict caused between members of the community in the immediate area of the proposed LLRW facility. These impacts are expected to decline during the period of facility operations assuming the facility operates without radiological accidents.”

These documents were the subject of hearings held in Butte and Naper, Nebraska, on Feb 2-5, 1998. The next step by the State of Nebraska will be the development of a final version of both reports based upon comments and input received during the public hearings. These documents are draft documents.

The commission continues to encourage movement toward a permit decision. There has been controversy over the use of a multi-hearing process as opposed to a single hearing process. There remains some continued controversy over the nature of the process to be used, but the process has started. The date for completion of the next phase is unknown and may depend upon the volume of comments received at last week's hearings. Court proceedings on this issue also continue.

For your reference, copies of the executive summary of the Draft Safety Evaluation Report and Draft Environmental Impact Analysis are included with this report.

IV. Costs

The 1996-1997 CIC annual report has the most recent complete accounting of the total costs. At the end of FY 97, June 30, 1997, the numbers are as follows:

	<u>Project Costs</u>	
US Ecology and Subcontractors	\$ 59,506,306	(68%)
Local Monitoring Committee	1,000,000	(1%)
State of Nebraska	23,412,478	(27%)
Community Improvement Fund	2,700,000	(3%)
Commission (Rebate Funds)	77,840	(< 1%)
Host State (Rebate Funds)	1,112,509	(1%)
 TOTAL	 \$ 87,809,133	

With the exception of the rebate funds and \$6 million provided by the developer, the costs of the project have been largely borne by the major generators. This group of utilities includes Wolf Creek as a member. The funding is provided through a contract with a series of contract amendments. (I should note the repayment of the developer's \$6 million plus interest has been controversial.)

V. Options

The current disposal approach used by Kansas generators is shipment to Barnwell, South Carolina. This facility which was closed for a period is currently accepting waste from CIC states. The operator, Chem Nuclear, is working at the development of long term commitments with generators. Access to the Barnwell facility has been cited as reason to impose a moratorium on further activities in the CIC. While the use of Barnwell is a good practice, there are concerns over the long term availability of the site. Of particular concern is the facility could close in the future if the state of South Carolina has a change of heart. While we do not know of any plans to close Barnwell, this is a possibility.

WASTE VOLUMES

VI. Federal Reports

The Department of Energy has recently issued a report on LLRW Management Programs. This report details the current status of all compacts. The report titled *Report to Congress 1997 Annual Report on Low-Level Radioactive Waste Management Progress* is also attached for your review. In the most recent report of waste generation and disposal by the states within the Central Interstate Compact for 1996 the following volumes and activities were reported.

	<u>Volume (%)</u>	<u>Activity (%)</u>
Arkansas	4.6	0.8
Kansas	9.6	10.5
Louisiana	43.8	2.1
Nebraska	40.8	86.5
Oklahoma	1.2	< 0.1

Please note the use of compaction and supercompaction by generators and waste handling firms has greatly reduced the volume of waste. When reviewing waste generation numbers, both volume and activity must be examined.

The source of radioactive waste within the compact by both volume and activity is outlined below.

	<u>Volume (%)</u>	<u>Activity (%)</u>
Utility Waste	94.3	93.4
Industrial	2.3	6.0
Government	1.7	0.5
Academic	1.5	<0.1
Medical	0.2	<0.1

The radioactive wastes generated in Kansas during the 1996 reporting period were all disposed of at Barnwell, South Carolina. The source of the wastes are shown below.

<u>Type</u>	<u>Volume (%)</u>	<u>Activity (%)</u>
Utility	81.2	41.4
Industrial	10.9	55.5
Academic	4.5	<0.1
Government	3.4	3.0

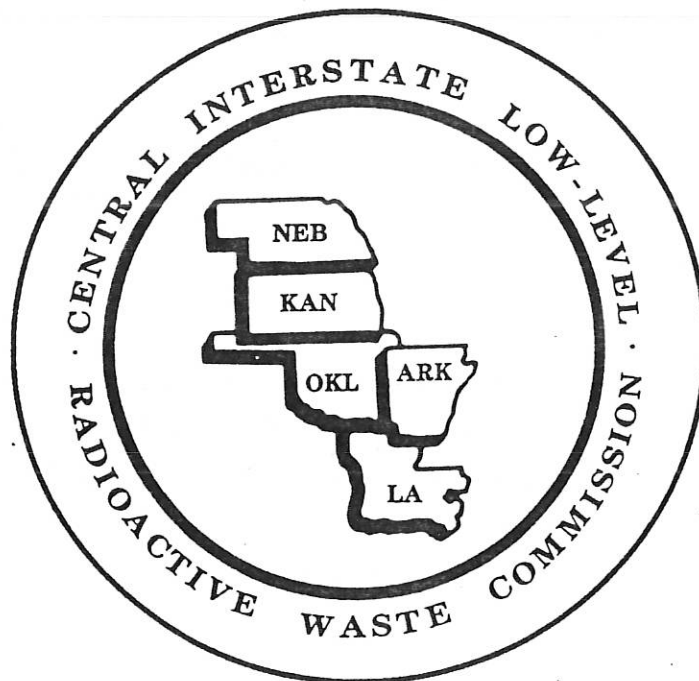
The differences between the activity and volume distribution can be attributed to the use of various compaction techniques.

VII. Summary

The most significant occurrence in the CIC during the past year has been the issuance of the **Draft Safety Evaluation Report** and **Draft Environmental Impact Assessment**. The progress, although slow, in this area toward a decision on the license application is encouraging. The implementation and cost of the project will be concerns in the event the license is issued.

CENTRAL INTERSTATE LOW-LEVEL RADIOACTIVE WASTE COMMISSION

ANNUAL REPORT 1996-1997



**“To Promote The Health, Safety,
and Welfare of the Citizens and the
Environment Within the Five-State
Compact Region.”** — From the Commission’s purpose
and objectives statement.

CENTRAL INTERSTATE LOW-LEVEL RADIOACTIVE WASTE COMMISSION

The purpose and objectives of the Commission are:

To carry out the mandate of the Central Interstate LLRW Compact by providing for and encouraging the safe and economical management of LLRW within the five-state Compact region;

To provide a framework for a cooperative effort to promote the health, safety, and welfare of the citizens and the environment of the Compact region;

To select the necessary regional facilities to accept compatible wastes generated in and from party states, and meeting the requirements of the Compact, giving each party state the right to have the wastes generated within its borders properly managed at such regional facilities;

To take whatever action is necessary to encourage the reduction of waste generated within the Compact region; and

To faithfully and diligently perform its duties and powers as are granted by the Compact.

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PROJECT STATUS UPDATE: 1996-1997

The Commission's developer, US Ecology, Inc., (USE) submitted a license application for a low-level radioactive waste disposal facility near the Village of Butte in Boyd County in July, 1990. The application was submitted to the Nebraska Department of Environmental Control (now known as Environmental Quality and referenced as NDEQ) and the Nebraska Department of Health (now known as Health and Human Services and referenced as NHHS).

The application was officially deemed complete by the State of Nebraska on December 24, 1991. After years of review, on May 31, 1995, US Ecology submitted to the State its responses to the fourth and final round of the state's technical comments. On June 15, 1995, US Ecology submitted its eighth revision to the Safety Analysis Report (SAR). On July 11, 1995, the NDEQ initiated its final review activities and confirmed that no more technical information would be requested from or accepted from the applicant. State evaluations and future decisions will be based on this final product.

During 1995 and early 1996,

the State did not issue a licensing public review schedule or commit to a binding licensing review schedule. Compact law, as well as individual laws in four of the five member states (Kansas law will be in force upon issuance of the license or permit to operate the disposal facility), charges the Commission to "require the Host State to process all applications for permits and licenses required for the development and operation of any regional facility or facilities within a reasonable period from the time that a completed application is submitted."

Commission staff and the Facility Review Committee drafted a review schedule that was in compliance with the respective federal and state laws and regulations. This draft schedule was adopted by the Commissioners at their January 18, 1996, Mid-Year Meeting. At their Spring Quarterly Meeting on March 27, 1996, the Commissioners voted to reaffirm their schedule. At the Annual Meeting of the Commission on June 26, 1996, the Commissioners unanimously approved conducting a Special Commission Meeting on August 27, 1996, for the purpose of "... developing and determining a reasonable schedule for the completion of the processing of the

pending application for a license for the Compact's regional low-level radioactive waste disposal facility."

At public information meetings conducted by the NDEQ and the NHHS on August 19 and 21, 1996, the state provided information which called for the issuance of a Draft Safety Evaluation Report (DSER) and a Draft Environmental Impact Assessment (DEIA) in October, 1997. This information was provided to the Commission when the Commission conducted its special meeting on August 27th. The Commission agreed to take under advisement the materials and comments from the special meeting and that each Commissioner be prepared to discuss in open forum and vote on a decision for a reasonable time period for completion of the license application review during the Fall Quarterly Meeting of the Commission on September 30, 1996.

At their September 30th meeting, Commissioners approved a motion that a range of dates between

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December 14, 1996, and January 14, 1997, be adopted as the schedule date for receipt of the DSER and DEIA and a draft license decision by the NDEQ. They also approved a motion that there be a single consolidated public comment period and public hearing process on the draft documents and draft license decision conforming to Nebraska law, previous Nebraska regulations, and similar environmental permits and license applications; federal statutes, regulations, and guidance, and other NRC agreement state's licensing processes.

On November 27, 1996, the State of Nebraska filed suit against the Commission regarding the issue of compliance with the Commission's proposed licensing schedule. Details of that lawsuit may be found elsewhere in this report. At the close of the 1996-1997 Fiscal Year on June 30, 1997, the State continued to hold to its announced plan to issue the draft documents and begin the public hearing process in October, 1997.

As a result of a Memorandum on Performance Assessment

prepared by the Nuclear Regulatory Commission (NRC), USE directed Bechtel National, Inc. (BNI) to assess the validity of the source term methodology used in the Safety Analysis Report (SAR). During February, 1997, BNI reviewed the NRC's information and found that the source term data and the site boundary dose presented in the SAR remains accurate and conservative. This finding further confirms the Butte facility's location and design will provide for the safe disposal of waste with no harm to the environment.

A subcontractor of NDEQ, the University of Nebraska Conservation and Survey Division, conducted a study titled "Task III Field Summary Report" regarding groundwater flow issues. USE requested BNI to assess this new data against the existing data contained in the SAR.

During June, 1997, BNI reviewed the Task III report on state monitoring wells. They found that the groundwater data obtained by the State confirmed the information presented in the SAR. The groundwater flow direction and destination presented in the SAR was therefore further confirmed by the independently obtained data.

Both of these actions indicate that the data presented by USE to the Host State Reviewers throughout the past several years continues to be valid and well within the limits and guidelines established by the NDEQ.

COMMISSION MEETINGS

There were seven meetings of the Commission during the fiscal year. There were also four meetings of the Facility Review Committee and the Annual Information Forum was held in conjunction with the 1997 Annual Meeting. Except for the Commission's Mid-Year Meeting, all meetings were held in Lincoln, Nebraska.

A Special Teleconference Meeting of the Commission was held on August 15, 1996, for the purpose of taking action on several LLRW Export Applications. During the 13-minute meeting, the Commissioners unanimously approved 12 export applications.

On August 27, 1996, a Special Meeting of the Commission was held to receive comments, evidence, and reports on a reasonable time period for completion of the processing of the pending license application for a LLRW disposal facility.

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The Commissioners met for their Fall Quarterly Meeting on September 30, 1996. In addition to the regular business of approving LLRW Export Applications and the Quarterly Funding Request of USE, the Commissioners approved the Annual Commission Audit conducted by KPMG Peat Marwick. Discussion was held and motion approved on the issue of Draft Findings in the Matter of a Reasonable Schedule for the LLRW License Review Process. Information on this issue may be found elsewhere in this report.

The Mid-Year Meeting of the Commission was held on January 8, 1997, in Oklahoma City, Oklahoma. The meeting began with a round-table discussion on possible alternatives and options to the proposed site and facility with representatives of USE, the Major Generators, and the Host State (Nebraska). It was suggested during the meeting that the Commission create and appoint a committee to explore alternative disposal options, the existing contract between the Commission and USE, and the economic ramifications of the project. However, no formal motion was made and no vote was taken.

A special report was given to the Commissioners by their Legal Counsel who spoke briefly on the issues of Invoice and Accounting Reconciliation in the USE Contract, a review of American Ecology, the legal status of license review schedule matters, and the most recent Host State lawsuit against the Commission. Legal Counsel also outlined for the Commissioners a variety of remedies the Commission may enforce if the Host State did not comply with the two resolutions passed on September 30, 1996, with regard to completion of the technical portion and subsequent public participation in the license review process.

Following an executive session with their Legal Counsel, the Commissioners approved a motion to request Host State Nebraska to provide indications of why the January 14, 1997, date for issuance of draft licensing documents and a draft license decision would not be met. They recommended a special telephone meeting on or about February 4, 1997, to consider the Host State response to the above mentioned request and to consider further Commission actions. They asked Legal Counsel to evaluate a potential Bad Faith Claim against the State of Nebraska

if it did not comply with the September 30, 1996, motions regarding scheduling matters. They asked Commission staff to begin a formalized account procedure to determine the accumulation of damages caused by the delay in issuance of a license.

At the Mid-Year Meeting, the Commissioners also approved the USE 1997 Annual Work Plan and the Quarterly Funding Request of USE. Several LLRW Export Applications were also approved.

On February 4, 1997, a Special Telephone Conference of the Commission was held regarding the failure of the Host State to meet the January 14, 1997, deadline for issuing draft licensing documents and a draft license decision. A motion was approved to ask the Commission Legal Counsel to evaluate a potential bad faith claim against the State of Nebraska and to report back on or before the Spring Quarterly Meeting on the estimated cost of such work.

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The Commissioners also approved a motion allowing USE to proceed with its best efforts to resolve any obstacles or impediments it has with the Nebraska Host State regulators in regard to implementing the mitigation and filling plan as approved by the U. S. Army Corps of Engineers. Information on a declaratory judgment lawsuit regarding this matter may be found elsewhere in this report.

The Spring Quarterly Meeting of the Commission was held on March 26, 1997. Regular business was conducted including the approval of LLRW Export Applications and the Quarterly Funding Request of USE.

The 1997 Annual Meeting of the Commission was held on June 25, 1997. Approval was given to an amendment to Commission Rules regarding the creation and administration of a Litigation Committee. An amendment to Commission By-Laws specifying that the Commissioner or Alternate Commissioner representing a member state that is involved in litigation or imminent litigation adverse to the Commission shall not be a direct or indirect member of the Litigation

Committee was approved. The Commissioners also approved a By-Laws amendment regarding procedures and limitations regarding closed sessions of Commission meetings.

Approval was given to the 1997-1998 Commission Budget and the Quarterly Funding Request of USE. The Commissioners adopted an Export Application Fee Schedule for Fiscal Year 1997-1998 which called for retaining the same fees as were in effect during the prior fiscal year. They then approved a number of LLRW Export Applications.

The Commissioners welcomed Michael Henry as the new alternate Commissioner from Louisiana and expressed their appreciation and thanks for the service of former Louisiana Commissioner William H. Spell. Spell is Administrator of the Louisiana Department of Health and Environment and will be retiring from that post later this year.

Laura Gilson, Commissioner from Arkansas, was elected Chairman of the Commission for the 1997-1998 Fiscal Year. Gilson follows Kansas Commissioner James J. O'Connell as Chairman.

SIXTH ANNUAL INFORMATION FORUM

Among the responsibilities of the Commission is the dissemination of information about Commission activities and low-level radioactive waste management efficiencies in general. One means of providing such information is the Annual Information Forum.

The Commission's Sixth Annual Public Information & Education Forum was held on June 24, 1997, in Lincoln. There were approximately 40 persons in attendance.

Theme for the Forum was "Rates, Fees, and Surcharges." A number of nationally recognized authorities gave presentations as well as staff from the Commission and USE. The first Forum session dealt with an historic overview of rates, fees, and surcharges. The second session related specifically to the Commission's disposal facility.

Participants in the first session included: Robert Burns, Senior Research Specialist and attorney at the National Regulatory Research Institute at Ohio State University; Eugene

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Eckhardt, Assistant Director of Water and Solid Waste with the Washington State Utilities and Transportation Commission; Jim Shaffner, Manager of the Southwestern Compact Region for USE; and Barry Bede, USE Vice President. Second session participants included John DeOld, Project Manager, USE and A. Eugene Crump, Executive Director of the Commission.

Topics discussed included: Issues in Recovering Pre-Operational (Site Development) Expenses; Rate Setting for the Ward Valley, California, LLRW Project; USE, Richland, Washington, Disposal Rates, Fees & Surcharges; USE, Collaborative Group Report on Rate Design and Ratemaking; The Washington State Experience on regulation of LLRW, including Rates in the Initial Rate Setting Process; Cost Recovery and Ratemaking Approaches for LLRW Disposal Facilities; and Cost of Service and Rate Design.

During his remarks on Recovering Pre-operational Expenses, Burns said that the financial arrangements for recovering these investments would vary according to who makes the investment: the site developer, the waste generators, or state governments. "Traditionally,

pre-operational expenses of utility plant construction and site development are recovered from the customers after the plant has been placed in service. Traditionally, utility plant construction and site development expenses are funded by debt and equity investors," Burns said.

"In such cases, direct costs of site preparation and construction are capitalized," he added. "The indirect costs properly assignable to site preparation and construction work are also capitalized." He said that indirect costs include interest during construction which may include all reasonable costs of money, whether paid out or not, utilized during the site preparation and construction stage.

"Interest on debt capital, whether paid or accrued, is capitalized," he said, "and, further, an imputed interest on equity capital is also charged. While rates on long-term debt are readily available, no rate is available on equity since the assets are not yet in service. Most commissions capitalize all construction and site preparation at the utility's authorized rate of return."

Eckhardt said the goal of cost recovery and ratemaking approaches for LLRW Disposal Facilities was to develop rates that will

recover the costs of the facility. "These include," he said, "the initial investment and development expenses, day-to-day operating costs, the opportunity to earn a fair rate of return on the owners' investment in the facility—their profit, and income taxes."

He said that rates should encourage efficient and effective use of the facility. "The rates should be fair for various classes of customers and there should be an avoidance of rate shock, bypass, or 'gaming' the rates," he added.

The Forum was videotaped and the tape is available for viewing at the Commission Office. Handouts related to each of the topics discussed are also available upon request.

FACILITY REVIEW COMMITTEE

The Facility Review Committee (FRC), created under the terms of the contract between the Commission and USE, is an advisory body to the Commission regarding the project's progress and funding requirements.

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The FRC meets in the Commission office in Lincoln, Nebraska, on a quarterly basis to review USE's Quarterly Funding Requests.

The FRC reviews the project schedules and time lines, the scope and tasks of the project, the anticipated and projected costs related to the project, and other reasonable and related matters.

Recommendations of the FRC are forwarded to the Commission for action at the next regularly scheduled Commission meeting.

Voting members of the FRC include the Host State (Nebraska) Commissioner, a representative appointed by and from the Village of Butte (Host Community), the Chairman of the Commission, and a representative of the Major Generators of LLRW from the five Compact states. USE is currently a non-voting member.

The FRC met on August 21, 1996, and recommended approval of the Quarterly Funding Request of USE. The next meeting was November 20, 1996, during which discussion was held regarding review of options and alternatives for the Mid-

Year Meeting of the Commission. It was suggested by the FRC that there be a round-table discussion of options and alternatives and that this discussion would include representatives of the Commission, USE, the Major Generators, and the Host State. The FRC recommended approval of the USE 1997 Pre-Construction Work Plan based on the Commission schedule adopted on September 30, 1996, and that any and all references to a Host State schedule or projected dates be deleted from the 1997 Pre-Construction Work Plan. The Quarterly Funding Request was also approved by the FRC.

Meeting on February 19, 1997, the FRC recommended approval of the Quarterly Funding Request of USE with the contingency that design and engineering funds not be spent until receipt of the draft licensing documents from the Host State and the staff review of corporate overhead hours. On May 21, 1997, the FRC recommended approval of the Quarterly Funding Request with the same contingency as was noted at their February 19th meeting.

INFORMATION AND EDUCATION

Requests for information regarding Commission activities are received regularly throughout the year. These requests come from member states, members of the general public, students at the high school and college level, other Compacts and states, and national publications specializing in LLRW or environmental issues. Additionally, research on specific topics is performed in response to questions from Commissioners and others directly related to the project.

The Commission has a variety of Fact Sheets, brochures, position papers, and other information available, including project-specific brochures. Among these documents is the Chronology of Public Participation which lists in detail every activity or event in which the public was actively involved since the beginning of the project. This chronology is updated regularly to reflect additional public participation activities as they occur.

Public Information/Education activities also include the Annual Information Forum, the quarterly newsletter "Commission News," and the Annual Report.

ANNUAL BILLINGS REVIEW

The Annual Billings Review of license application work performed by USE was completed by the Commission's outside accounting firm KPMG Peat Marwick LLP. The agreed upon procedures for the auditor's billing review covers fiscal year 1995-1996 and was completed in early September, 1996.

The billings review is performed pursuant to a contract between the Commission and the Major Generators from the five states of the Compact. The review is performed solely to assist the Commission and Major Generators in evaluating USE's compliance with its contract with the Commission. All billings from US Ecology to the Commission, including BNI, to USE, were subject to inspection during the review.

The review included direct labor charges, the fringe benefit adder rate, payments to vendors, supporting documentation for payments to subcontractors, travel charges, and other general expense charges. In some instances, minor mathematical discrepancies were found in the computations used by

USE or BNI to arrive at their billing amounts. By mutual agreement, all billing errors were corrected and appropriate action was taken to properly reconcile all accounts. The review for fiscal year 1996-1997 should be completed in September 1997.

COMMISSION WEB PAGE

The Commission is now a member of the Internet system of world wide web pages. The Commission's web page became operational in late 1996. The Commission's Project Manager prepared the necessary materials and programs to create, operate, and update the web page.

Among the items contained on the Commission's web page are newsletter articles, the Annual Report, minutes of Commission and FRC meetings, notices of meetings, and other appropriate information. The web page is updated regularly.

On the Internet, the web page may be accessed at <http://www.cillrwcc.org>.

Also available is an e-mail system in which any of the Commission staff may send and receive electronic mail. The e-mail address's all start with the staff member's name as follows: acrump (A. Eugene Crump), carl (Carl Connell), rich (Richard Kuzelka), don, (Donald L. Rabbe), and rita (Rita Houskie). Each e-mail address ends with cillrwcc.org. A sample e-mail address would be don@cillrwcc.org.

ANNUAL WASTE SURVEY RESULTS

The Commission's 1997 Annual Waste Survey, the fifth such survey conducted, had a response rate of 39.7%. The survey was sent to 252 previous generators with export authorization from the Commission or generators who had responded to previous surveys. There were 100 responses.

Of the 100 responses received, 46 indicated that they continued to generate low-level radioactive waste during the period covered by the survey. The quantity generated ranged from as little as one-half cubic foot to

(Continued on next page)

more than 4,200 cubic feet. Although the quantity was somewhat reduced from previous surveys, the radiation content (measured in curies) continued to increase over previous surveys.

Respondents included 40 medical facilities, 15 higher education facilities, 17 industrial facilities, and six utilities. The respondents by state included: Arkansas, 7; Kansas, 18; Louisiana, 19; Nebraska, 33; Oklahoma, 21.

Twenty-six of the respondents ship their LLRW for disposal and 28 store their LLRW on site and wait for it to decay to acceptable levels. Of those shipping for disposal, several medical facilities return their LLRW to the manufacturer or a centralized radiopharmacy.

Of the commercial disposal facilities available, the Barnwell, South Carolina, disposal facility is the most frequently used, far outdistancing those who ship to the Envirocare facility in Utah.

Those storing waste on site indicated they could continue to do so for a period ranging from one to

five years. Nearly every respondent indicated they would incur increased costs in the management of their LLRW. Existing annual budget cycle costs for LLRW generators ranged from as low as \$400 to as much as \$2.3 million. Seven respondents indicated they are ceasing use of radioactive materials because there is no safe way to properly dispose of their waste.

Each year respondents are invited to offer any additional comments or ask questions they may have about the Commission's development of a disposal facility. These comments and all other data obtained from the survey are available for review in the Commission office.

NDEQ PRESENTS ANNUAL REPORT TO THE NEBRASKA LEGISLATURE

The Nebraska Department of Environmental Quality (NDEQ) contains the Low-Level Radioactive Waste Program (LLRW Program) created to administer the NDEQ's responsibilities as outlined in Nebraska State Statute through the Low-Level Radioactive Waste Disposal Act. The NDEQ's 1996 Annual Report to the Legislature details the LLRW

Program activities from 1990 to the present regarding their review of the license application of US Ecology.

The LLRW Program is a cooperative effort on behalf of NDEQ and the Nebraska Department of Health and Human Services (NHHS). Their technical review of the license application covers eight functional areas including Site Characterization, Performance Assessment, Quality Assurance, Design and Construction, and Facility Operations. In addition to state personnel, the LLRW Program organized and contracted for a team of more than 100 technical reviewers with expertise in more than 20 technical and professional disciplines to assist the NDEQ and NHHS in the review of the application.

According to the LLRW Program's Annual Report, issued December 1, 1996, the license application submitted by USE in July, 1990, contained a two-volume Environmental Report and an 11-volume Safety Analysis Report. These documents contained more than 4,000 pages of information. By October, 1990, reviewers had identified 34 alleged deficiencies. USE responded between November, 1990, and July, 1991. Eight

(Continued on next page)

additional outstanding alleged deficiencies were reported to USE in August, 1991, and responded to in November, 1991. On December 24, 1991, the State determined the application to be complete. The Safety Analysis Report generated 1,350 comments and the Environmental Report generated 355 comments. There were four rounds of comments from the State which were responded to by USE.

In 1993, the State issued an Intent to Deny action, citing the presence of wetlands at the proposed site. In August, 1993, USE submitted a revision to its license application, changing the boundary size of the proposed site to respond to the Intent to Deny. This revision prompted the technical review team to re-evaluate all areas of the revised application prior to issuing Final Technical Review Comments. This final round of comments was forwarded to USE by the State in October, 1994, and USE completed its response in May, 1995. On July 11, 1995, the LLRW Program initiated its final review activities and was continuing that review process at the completion of the Commission's last fiscal year on June 30, 1997.

LEGISLATIVE ACTIONS

Two pieces of legislation affecting the Commission were introduced during the 1997 session of the Nebraska Unicameral. Legislative Bill 684, extended through calendar year 1997 the responsibility of the Commission member states to provide to the Host State (Nebraska) Community Improvement Cash Funds (CICF). This legislation was approved by the Unicameral as an amendment to LB 658 and was signed into law by Host State Governor E. Benjamin Nelson. This insures continued funding assistance for the Village of Butte (Host Community) and a number of other political subdivisions in Boyd County which are impacted by the selection of the proposed disposal facility site.

The CICF was authorized and established in 1987. The annual amount provided by the states of Louisiana, Arkansas, Oklahoma, and Kansas to Host State Nebraska is \$75,000 each for a total of \$300,000. With the 1997 funding, the Commission has paid to Nebraska a total of \$2.7 million for public purpose use by the affected communities and political subdivisions.

One-half of the CICF money is distributed to the Villages of Butte and Anoka (\$147,000 and \$3,000 respectively) and the remainder is provided to the Boyd County Treasurer for distribution to a number of political subdivisions such as the Butte Public School, the Rural Fire Protection District, the Boyd County Fair Board, the area Community College, and the area Natural Resource District. These recipients use the funds for public purposes such as street, water, and sewer improvements, roads and bridges, educational materials and equipment, fire safety equipment and facilities, and for a portion of the costs of the new Butte Community Building.

Nebraska State Senator M. L. "Cap" Dierks introduced Legislative Bill 552 to withdraw Nebraska's membership in the Compact. He identified LB 552 as his priority legislation for the session.

Senator Dierks cited as the reason for introducing the bill the exclusion of the Nebraska Commissioner from an executive session

(Continued on next page)

of the Commission's Mid-Year Meeting. A public hearing before the legislature's Natural Resources Committee was held on March 20, 1997. The bill was held over by the committee.

The bill may be discussed during the legislative session starting in January, 1998. The Natural Resources Committee did agree, however, to conduct an interim study of the issue. Public hearings will be held later this year and the Committee report will be submitted to the full legislature in its 1998 session.

SUMMARY OF LITIGATION

During the last several years, the Commission has been sued many times, including five lawsuits filed by the State of Nebraska. In each of those five cases, as well as all others, the Commission was successful in its legal position.

ACTIONS IN WHICH THE COMMISSION IS OR WAS A PARTY

Concerned Citizens of Nebraska (CCN), Ronald Schumann, Lowell Fisher,

Larry Anderson, Diane Burton, David Follrichs, Roger Williams, and Edd Epley v. United States Nuclear Regulatory Commission (NRC), Dennis Grams, Director of Nebraska Department of Environmental Control (NDEC), Central Interstate Low-Level Radioactive Waste Compact Commission, and US Ecology, Inc. (USE) (United States District Court for the District of Nebraska, Case No. CV 90-L-70.)

In 1990, opponents of the siting project filed suit against the Commission, US Ecology, Inc., the United States Nuclear Regulatory Commission, and Dennis Grams, the Director of the Nebraska Department of Environmental Control. This case alleged a variety of statutory and constitutional objections and asked that the siting of a regional facility be enjoined. The case was dismissed by Judge Warren K. Urbom as to all counts, and the United States Court of Appeals for the Eighth Circuit affirmed that dismissal in 1992.

Boyd County Local Monitoring Committee v. Central Interstate Low-Level Radioactive Waste Commission (United States District Court for the District of Nebraska, Case No. 92-L-3137.)

In 1992, the Boyd County Local Monitoring Committee sued the Commission, alleging an assortment of violations of Nebraska law and constitutional claims, and sought an injunction against the Commission prohibiting it from proceeding with contractual amendments with its contractor, US Ecology, Inc. Judge Warren K. Urbom dismissed the case. The plaintiff amended its complaint but then dropped its case and dismissed its lawsuit.

Diane Aurelia Burton and Dawneane Ferry Munn v. Central Interstate Low-Level Radioactive Waste Commission (United States District Court for the District of Nebraska, Case No. 4:CV92-3250.)

Also in 1992, Diane Burton and Dawneane Munn sued the Commission, alleging a variety of complaints about the Commission's rules, policies, budgeting, and financing, and claiming this increased the plaintiffs' taxes unconstitutionally. On February 24, 1993, the case was dismissed by Judge Warren K. Urbom on the ground that neither of the plaintiffs could show valid "standing" or separate or particular injury on their part so as to justify federal jurisdiction. Plaintiffs

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appealed to the Eighth Circuit which affirmed Judge Urbom. Burton petitioned the U. S. Supreme Court to take the case. Her petition was denied in the fall of 1994.

Central Interstate Low-Level Radioactive Waste Commission; and US Ecology, Inc., a California Corporation v. McCulley Township, Boyd County, Nebraska (United States District Court for the District of Nebraska, Case No. 4:CV92-3244.)

McCulley Township, Nebraska, passed ordinances prohibiting, in effect, the siting of the regional facility near Butte, Nebraska; and the Commission and US Ecology, Inc., jointly filed a lawsuit to declare those ordinances an unconstitutional local burden on a federal statutory plan, thus violating both the interstate commerce clause and the supremacy clause of the United States Constitution. Chief United States District Judge for the District of Nebraska Lyle Strom overruled the McCulley Township's motion to dismiss and in his opinion strongly indicated that the McCulley ordinances were invalid and unenforceable. Shortly thereafter, Judge Strom granted the Commission's motion for summary judgment and invalidated the ordinances. McCulley Township did not appeal.

State of Nebraska ex rel. E. Benjamin Nelson, Governor, v. Central Interstate Low-Level Radioactive Waste Commission; and US Ecology, Inc., a California Corporation 834 F.Supp. 1205 (D.Neb. 1993); 26 F.3d 77 (8th Cir. 1994).

In January 1993, the State of Nebraska, at the instance of E. Benjamin Nelson, the Governor, sued the Commission and US Ecology, Inc., seeking a permanent injunction against the regional facility and a declaration that so-called "community consent" by Boyd County was a pre-condition to siting the facility and that such consent did not exist. The suit also contended that the developer and the Commission have not satisfied the language of Nebraska state law, section 81-1579, which states:

It is the intent of the Legislature that potential host communities be actively and voluntarily involved in the siting process. To the extent possible, consistent with the highest level of protection for the health and safety of the citizens of the state and protection of the environment, the developer shall make every effort to locate the facility where community support is evident.

The Commission answered the complaint and sought

dismissal of the suit on several legal grounds, including that the Commission and its developer had met every legal requirement involving community support; that the attempt by the Governor now to define "community consent" in a manner so as to prohibit the project was without legal justification; and on several other grounds, including lack of jurisdiction, violation of the United States Constitution's supremacy clause, untimeliness for a party state to contest a decision of the Commission, and failure of the lawsuit to state a valid claim upon which any relief could be granted by the federal court.

On October 8, 1993, U. S. District Judge Richard Kopt granted the Commission and US Ecology, Inc.'s motion for summary judgment, holding that the suit was untimely under the statute of limitations contained in Art.IV(l) of the compact, and that Nebraska's delay in bringing the action barred the suit under the equitable doctrines of estoppel and laches.

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Nebraska appealed to the Eighth Circuit, which affirmed Judge Kopf's decision in an opinion issued on June 13, 1994. (26 F.3d 77). Nebraska then petitioned the U. S. Supreme Court to hear the case; the Supreme Court denied the petition in November, 1994. (130 L.Ed.2nd 395).

State of Nebraska ex rel. E. Benjamin Nelson, Governor V. Central Interstate Low-Level Radioactive Waste Commission (United States District Court for the District of Nebraska, Case No. 4:CV93-3367.)

Not satisfied with the Court's ruling in the first community consent case, the plaintiff filed a second suit three weeks later, contending that the August 27, 1993 license application amendment by US Ecology, Inc., created a new "site" for purposes of the "community consent" issue. This claim was clearly barred by the doctrine of res judicata. The Commission and US Ecology, Inc., moved for summary judgment on that basis one week after the suit was filed. On December 3, 1993, Judge Richard Kopf granted our summary judgment motion

and dismissed the case, strongly suggesting the case was frivolous.. The State did not appeal.

State of Nebraska ex rel. E. Benjamin Nelson, Governor v. Central Interstate Low-Level Radioactive Waste Commission (United States District Court for the District of Nebraska, Case No. 4:CV95-3053.)

On February 3, 1995, Governor Nelson filed suit against the Commission, claiming that Nebraska was entitled to additional representation on the Commission by virtue of amendments to the Compact, notwithstanding that the Kansas Legislature conditioned its agreement to the Compact amendments on the issuance of a disposal facility license by Nebraska and that Congress had not yet consented to the Compact Amendments. The Commission answered, denying that the Compact amendments could become effective until all states, including Kansas, legislatively agreed to them, and until they are consented to by Congress. Following a one-half day bench trial, Judge Richard Kopf found in favor of the Commission and dismissed the suit on October 23, 1995. The plaintiff did not appeal.

State of Nebraska ex rel. E. Benjamin Nelson, Governor v. Central Interstate Low-Level Radioactive Waste Commission (United States District Court for the District of Nebraska, Case No. 4:CV95-3052.)

Also on February 3, 1995, Governor Nelson filed a second suit against the Commission. This suit contended that Nebraska is entitled to receive all surcharge rebate funds delivered to the Commission by the Federal Department of Energy pursuant to federal statute. The Commission answered, denying the claims and asserting that Nebraska has failed adequately to account for its use of rebate funds previously provided by the Commission to the State. Both parties moved for summary judgment. The summary judgment motions of both sides were overruled, with Judge Richard Kopf saying in his opinion that if Nebraska did not perform its recordkeeping and reporting responsibilities in good faith, then as a matter of equity it would not be entitled to the equitable relief it sought. As the case approached trial, the court struck the jury request by Nebraska. A settlement conference was held before the U. S. Magistrate Judge David Piester and a settlement reached between

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the parties. In essence, the parties agreed to split evenly all unspent "rebate funds" in the possession of either, and to work out their differences as to the reporting of rebate expenditures by Nebraska. Also, a licensing cost reimbursement arrangement was included which was intended to facilitate expediting by Nebraska of its licensing process and Nebraska specifically agreed to expedite its process. A settlement agreement was finalized and the case was dismissed with prejudice pursuant to that agreement.

State of Nebraska v. Central Interstate Low-Level Radioactive Waste Commission (United States District Court for the District of Nebraska, Case No. 4:CV963438.)

The Commission, after receiving evidence at a special meeting on August 27, 1996, passed resolutions on September 30, 1996, calling for the State of Nebraska to issue its initial draft licensing decision and draft evaluation documents on the license application no later than January 14, 1997, and also calling for a consolidation of the public hearing process after the draft decision. The State of Nebraska sued the Commission, claiming that it was entitled to a federal declaratory judgment that the

Commission lacks authority to set any schedule for the license application review currently underway, and that even if it had such authority, the date set was unreasonable.

The case at the close of the 1996-1997 fiscal year remains in the discovery stage. Trial is likely to be in November, 1997.

The Commission has vigorously defended the case and sought relevant documents from the State of Nebraska, which requests have been disputed. The United States Magistrate Judge David Piester has ordered that the State furnish those documents. The State has appealed that decision, but has begun to furnish some of its relevant documents nevertheless. In the opinion of counsel, the Commission is likely to prevail in this suit, and almost certainly will be found to have legal authority to attempt to expedite the process. The deposition and discovery work not being complete, it is difficult to further describe the positions of the parties. The major generators, Wolf Creek Nuclear Operating Corporation and Entergy, have filed a motion to intervene to protect their interest, generally aligned with the contentions of the Commission. That request was also allowed by the United States Magistrate

Judge. The intervention decision has also been appealed by the State, leaving the intervenors in indefinite status for the time being, but they very likely will be allowed to intervene.

ACTIONS WHICH POTENTIALLY AFFECT THE PROJECT, BUT IN WHICH THE COMMISSION IS NOT A PARTY

Diane Aurelia Burton and Heartland Operation to Protect the Environment, Inc. v. United States Nuclear Regulatory Commission and Ivan Selin as Chairman of the United States Nuclear Regulatory Commission.

In 1992, the plaintiff sued the Nuclear Regulatory Commission of the United States in federal court. That case was dismissed on both jurisdictional and standing grounds by Judge Warren K. Urbom. The plaintiffs did not appeal.

The State of New York; The County of Allegheny; and the County of Cortland v. The United States of America, et. al. (Supreme Court of the United States, Cases No. 91-543, 91-558, and 91-563.)

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An additional lawsuit of note was the suit by New York State, a "go-it-alone" state, against the United States, challenging various provisions of the federal low-level radioactive waste laws. The United States Supreme Court held unconstitutional as an unwarranted extension of federal power the federal statutory provision requiring a state such as New York (go-it-alone, non-compact), upon failing to meet the federal statutory guidelines, to take title to the low-level radioactive waste. However, the decision in general validated the federal statutory scheme. It is quite questionable whether even the decision as to the "take-title" provision is applicable to states which have joined a compact, such as Nebraska. That issue has not been decided. In general, the system of compacts and the federal system for a national solution to the problem of low-level radioactive waste disposal passed muster in the New York case. The State of Nebraska joined New York as a limited "amicus" or friend of the court, but nothing in the decision expressly indicates that states which are members of a compact are protected by the decision.

Concerned Citizens of Nemaha County, a nonprofit corporation v. Dennis Grams and the Department of Environmental Control.
(District Court of Lancaster County, Docket 449, Page 7.)

This action sought an injunction against the Department from taking any action to terminate the existence of the Nemaha County Local Monitoring Committee or depriving such committee of any funding until a license was granted. The plaintiff was successful in obtaining a temporary injunction against the Department. Subsequently, the local monitoring committees became parties, and the Boyd County Local Monitoring Committee sought to obtain a dissolution of the injunction, at first without success.

Boyd County Local Monitoring Committee then filed a second lawsuit in the District Court of Lancaster County (Docket 454, Page 219) against Dennis Grams, the Department of Environmental Control, and US Ecology, Inc., seeking a declaration that Boyd County was entitled to the use of the local monitoring committee cash fund since the preferred site had been selected in Boyd County. They also sought a mandatory injunction to require the Department to collect

payment from US Ecology, Inc. for funding the local monitoring committee cash fund, and to enjoin the Department from taking any action to review US Ecology's license application until the funds were paid to the Boyd County Local Monitoring Committee.

The second lawsuit was disposed of on a motion for summary judgment and the Court found that US Ecology, Inc., had selected a site and had filed an application for a license on the site and therefore the other two local monitoring committees ceased to exist and were dissolved.

In the first lawsuit, the injunction was ultimately lifted and the case dismissed. An incidental effect of this litigation was to delay the funding of the Boyd County Local Monitoring Committee for more than one year.

County of Boyd v. US Ecology, Inc. (United States District Court for the District of Nebraska, Case No. 4:CV93-3435.)

In December 1993, shortly after Judge Richard Kopf dismissed the second "community consent" lawsuit filed by Nebraska, Boyd County and the Local Monitoring Committee sued US Ecology, Inc. for fraud.

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The complaint alleged that US Ecology, Inc., made false statements regarding the community consent process and sought unspecified damages. A member of the Boyd County Local Monitoring Committee was quoted in newspapers as saying that the damages amounted to hundreds of millions of dollars.

Judge Richard Kopf dismissed the suit in July, 1994, finding that the complaint was really just another attempt to relitigate claims already decided in the previous "community consent" cases, and was thus barred by res judicata. Plaintiffs appealed to the Eighth Circuit. The Eighth Circuit affirmed Judge Kopf's decision on February 11, 1995. (48 F.rd 359.) Boyd County petitioned the United States Supreme Court for certiorari. The Supreme Court denied the request on October 2, 1995 (64 U.S.L.W.3240.)

US Ecology, Inc. v. Nebraska Department of Environmental Quality, Nebraska Department of Health, et. al. (District Court of Lancaster County, Nebraska, Docket 554, Page 219.) In April of 1997, US Ecology, Inc. instituted an action against the Nebraska Department of Environmental Quality, the Nebraska Department of Health,

and various individuals of the two Departments involved in decision-making, for declaratory and injunctive relief regarding the issue of whether the proposed filling of a small wetland area (less than one acre in size) by US Ecology, Inc., on the Butte site constitutes commencement of construction under state and federal law. The State has filed two procedural motions, the second of which is scheduled for hearing on August 15, 1997.

US Ecology, Inc. is engaging in discovery and is in the process of seeking an agreement on a deposition schedule with the State. A trial date has not yet been set by the District Judge.

US Ecology, Inc. v. Boyd County Equalization Board, et. al. (Case No. A97-802.)

On July 31, 1997, US Ecology, Inc. filed a petition for judicial review with the Nebraska Court of Appeals of a decision of the Tax Equalization and Review Commission which upheld the decision of the Boyd County Board of Equalization increasing the real estate taxes on the Butte site from \$113,000 to \$320,000. The respondents have 30 days to respond to the petition, after which the court will establish a briefing schedule.

Contested Case Licensing Proceeding on "Intent To Deny A License"

Following dismissal of the contested case licensing proceeding by the Department of Environmental Quality on mootness grounds, reflecting amendment of US Ecology, Inc.'s license application to eliminate wetlands, the Boyd County Local Monitoring Committee appealed to the District Court of Lancaster County. The appeal sought a determination that the Monitoring Committee is entitled to a hearing on the merits of US Ecology, Inc.'s application immediately, notwithstanding the fact that no final licensing decision had been made. US Ecology, Inc., filed a motion to dismiss arguing that the court lacked jurisdiction over the appeal. Judge Paul Merritt dismissed the case on jurisdictional grounds in the Spring of 1994, and no appeal from that decision was made by the plaintiff.

PROJECT AND ASSOCIATED COSTS

SUMMARY OF PROJECT COSTS	DOLLARS		PERCENTAGE	
	FY 96-97	TO 6/30/97	FY 96-97	TO 6/30/97
PAID TO US ECOLOGY*:				
DIRECT & INDIRECT COSTS	1,085,363	15,320,858	15.30%	17.40%
SUBCONTRACTS:				
BECHTEL NATIONAL INC. (BNI)	872,094	36,067,863	12.30%	41.10%
BNI SUBCONTRACTS	880	4,462,762	0.00%	5.10%
OTHER SUBCONTRACTS	219,758	3,654,823	3.10%	4.20%
LOCAL MONITORING COMMITTEES	100,000	1,000,000	1.40%	1.10%
HOST STATE LICENSE REVIEW	4,121,888	23,412,478	57.90%	26.70%
SUBTOTAL-PAID TO US ECOLOGY	6,399,983	× 83,918,784	89.90%	95.60%
CIF DISTRIBUTION THROUGH NDEQ	600,000	2,700,000	8.40%	3.10%
FEDERAL REBATE FUNDS EXPENDITURES:				
COMMISSION	0	77,840	0.00%	0.10%
HOST STATE	115,543	1,112,509	1.60%	1.30%
TOTAL PROJECT & ASSOCIATED COSTS	7,115,526	87,809,133	100.00%	100.00%

FEDERAL REBATE FUNDS BALANCES	FY 96-97	TO 6/30/97
COMMISSION **:		
REC'D FROM DOE	0	2,426,712
PAID TO NDEQ	0	1,519,411
USED BY COMMISSION	0	77,840
AVAILABLE FUND BALANCE	0	829,461
NDEQ **:		
REC'D FROM COMMISSION	0	1,519,411
USED BY NDEQ	115,543	1,112,509
AVAILABLE FUND BALANCE	(115,543)	406,902

DISTRIBUTION OF COMMUNITY IMPROVEMENT FUND	FY 96-97	TO 6/30/97
TO VILLAGES:		
BUTTE	147,000	
ANOKA	3,000	
UNDISTRIBUTED ***	150,000	
SUBTOTAL VILLAGES	300,000	1,300,000
TO COUNTIES:		
BOYD COUNTY	30,667	
NORTHEAST TCC	4,886	
SCHOOL DISTRICT #5	103,498	
ESU #8	2,481	
LOWER NIOBRARA NRD	1,612	
COUNTY AG SOCIETY	352	
MCCULLEY TOWNSHIP	4,769	
BUTTE FIRE DISTRICT	1,735	
UNDISTRIBUTED ***	150,000	
SUBTOTAL	300,000	1,200,000
NEMAHA	0	100,000
NUCKOLLS	0	100,000
SUBTOTAL COUNTIES	300,000	1,400,000
TOTAL DISTRIBUTION	600,000	2,700,000
	=====	=====

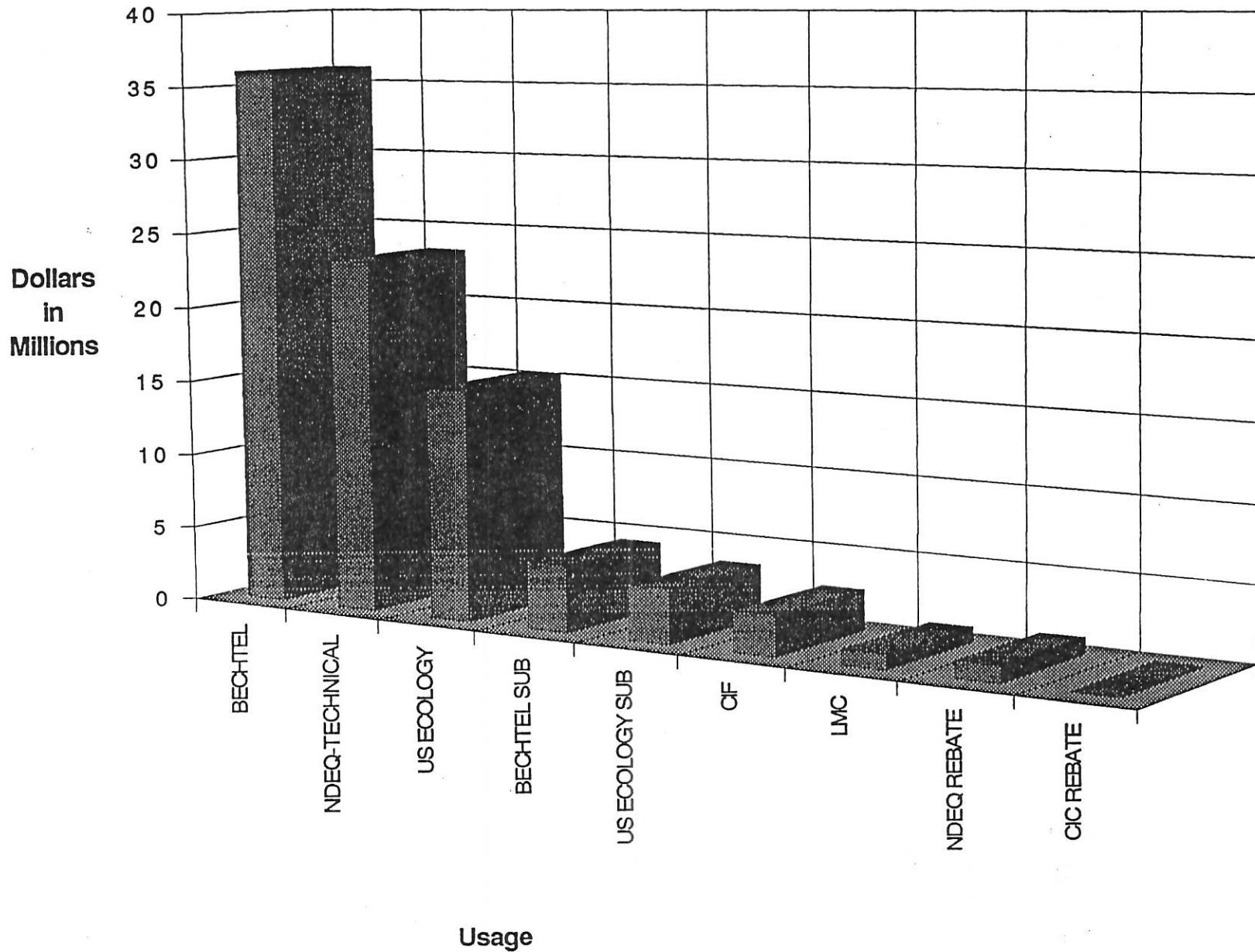
* PER PROJECT MONTHLY PROGRESS REPORT

** DOES NOT INCLUDE INTEREST EARNED & ACCRUED

*** \$300,000 PAID TO DEQ IN JUNE 25, 1997, UNDISTRIBUTED AS OF JULY 31, 1997

**CENTRAL STATES COMPACT
PROJECT & ASSOCIATED COSTS THROUGH JUNE 30, 1997**

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COMMISSION EXPENSE REPORT

EXPENSE	FY 94-95	FY 95-96	FY 96-97		FY 97-98
	ACTUAL (1)	ACTUAL	BUDGET (2)	ACTUAL	BUDGET
SALARIES & BENEFITS	339,057	334,296	276,211	274,366	243,965
RENT	46,297	33,863	35,400	35,218	38,000
TELEPHONE	8,593	9,132	10,500	9,993	10,000
POSTAGE	3,993	4,378	3,400	3,237	4,000
COPYING & PRINTING	1,301	898	200	88	1,000
MACHINE MAINTENANCE	3,650	7,492	5,000	4,907	6,400
MEETING TRANSCRIPTIONS	3,094	3,321	5,200	4,962	5,000
DUES & SUBSCRIPTIONS	319	418	500	369	600
OFFICE SUPPLIES	14,336	11,242	15,800	14,029	13,500
TRAVEL EXPENSES	22,177	17,092	19,000	19,114	18,000
INSURANCE	5,243	6,190	2,600	2,580	4,000
ACCOUNTING	9,415	37,138	30,000	23,899	28,000
LEGAL COUNSEL	85,685	116,338	190,000	179,594	120,000
SPECIAL COUNSEL (3)	977	0	0	0	0
MISCELLANEOUS	35	0	0	0	500
PROJECT MANAGER (4)	0	138,855	167,119	166,840	172,000
TOTAL	544,172	720,653	760,930	739,196	664,965

- (1) FY 94-95 PRESENTED APPLYING CASH BASIS ACCOUNTING
- (2) AMENDED EFFECTIVE JUNE 25, 1997
- (3) FINALIZED EFFECTIVE JUNE 30, 1995
- (4) ADDED EFFECTIVE JULY 1, 1995

233 South 13th Street, Suite 1600
Lincoln, NE 68508-2041

Two Central Park Plaza
Suite 1501
Omaha, NE 68102

INDEPENDENT AUDITORS' REPORT

The Commissioners
Central Interstate Low-Level
Radioactive Waste Commission:

We have audited the accompanying balance sheets of the Central Interstate Low-Level Radioactive Waste Commission (Commission) as of June 30, 1997 and 1996, and the related statements of revenues and expenses of the general fund, changes in fund balances and cash flows of the general fund for the years then ended. These financial statements are the responsibility of the Commission's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with generally accepted auditing standards. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Central Interstate Low-Level Radioactive Waste Commission as of June 30, 1997 and 1996, and the results of its operations of the general fund, changes in its fund balances and cash flows of its general fund for the years then ended in conformity with generally accepted accounting principles.

KPMG Peat Marwick LLP

July 25, 1997

**CENTRAL INTERSTATE LOW-LEVEL
RADIOACTIVE WASTE COMMISSION**

Balance Sheets

June 30, 1997 and 1996

Assets	1997	1996
General fund:		
Current assets:		
Cash, primarily interest-bearing accounts	\$ 377,468	288,065
Accounts receivable	-	75,000
Prepaid expense	<u>1,637</u>	<u>2,087</u>
Total current assets	<u>379,105</u>	<u>365,152</u>
Property and equipment	113,313	107,228
Less accumulated depreciation	<u>102,348</u>	<u>97,659</u>
Net property and equipment	<u>10,965</u>	<u>9,569</u>
Total assets - general fund	<u>\$ 390,070</u>	<u>374,721</u>
Restricted funds:		
Rebate fund, Commission certificates of deposit (note 2)	\$ 279,276	829,451
Guarantee fund, certificates of deposit (note 2)	1,000,000	-
Project fund:		
Cash, interest-bearing account	471,230	180,547
Accounts receivable	<u>444,715</u>	<u>623,581</u>
Total project fund	<u>915,945</u>	<u>804,128</u>
Total assets - restricted funds	<u>\$ 2,195,221</u>	<u>1,633,579</u>
Liabilities and Fund Balances		
General fund:		
Current liabilities:		
Community improvement fees payable	\$ -	300,000
Accounts payable	53,022	13,719
Accrued expenses	<u>9,142</u>	<u>21,380</u>
Total current liabilities	<u>62,164</u>	<u>335,099</u>
Unearned export application fees	180,000	-
Fund balance	147,906	39,622
Commitments and contingencies (notes 2 and 4)	-	-
Total liabilities and fund balance - general fund	<u>\$ 390,070</u>	<u>374,721</u>
Restricted funds:		
Rebate fund (note 2)	\$ 279,276	829,451
Guarantee fund (note 2)	1,000,000	-
Project fund:		
Liability, accounts payable	915,945	772,844
Fund balance	<u>-</u>	<u>31,284</u>
Total project fund	<u>915,945</u>	<u>804,128</u>
Total liability and fund balances - restricted funds	<u>\$ 2,195,221</u>	<u>1,633,579</u>

See accompanying notes to financial statements.

**CENTRAL INTERSTATE LOW-LEVEL
RADIOACTIVE WASTE COMMISSION**

Statements of Cash Flows of the General Fund

Years ended June 30, 1997 and 1996

	1997	1996
Cash flows from operating activities:		
Net income (loss)	\$ <u>61,322</u>	<u>(13,004)</u>
Adjustments to reconcile net loss to cash provided (used) by operating activities:		
Depreciation	4,689	3,398
Changes in assets and liabilities:		
Accounts receivable	75,000	-
Other current assets	450	897
Community improvement fees payable	(300,000)	-
Other current liabilities	27,065	4,343
Due to major generators	-	(13,737)
Unearned export application fees	<u>180,000</u>	<u>-</u>
Total adjustments	<u>(12,796)</u>	<u>(5,099)</u>
Net cash provided (used) by operating activities	<u>48,526</u>	<u>(18,103)</u>
Cash flows from investing activities:		
Transfer of interest income from project fund	46,962	-
Purchases of property and equipment	<u>(6,085)</u>	<u>(6,418)</u>
Net cash provided (used) by investing activities	<u>40,877</u>	<u>(6,418)</u>
Net increase (decrease) in cash	89,403	(24,521)
Cash and interest-bearing accounts, including limited use asset, at beginning of year	<u>288,065</u>	<u>312,586</u>
Cash and interest-bearing accounts, including limited use asset, at end of year	<u>\$ 377,468</u>	<u>288,065</u>

See accompanying notes to financial statements.

**CENTRAL INTERSTATE LOW-LEVEL
RADIOACTIVE WASTE COMMISSION**

Statements of Revenues and Expenses of the General Fund

Years ended June 30, 1997 and 1996

	1997	1996
Revenues:		
Commission member fees	\$ 125,000	125,000
Community improvement fees	300,000	300,000
Export application fees	641,600	556,100
Other	<u>274</u>	<u>93</u>
Total revenues	<u>1,066,874</u>	<u>981,193</u>
Operating expenses:		
Salaries and benefits	261,759	345,596
Travel	17,699	15,553
Professional services	384,416	286,111
Office and administrative	29,962	30,952
Rent (note 4)	35,218	34,161
Depreciation	4,689	3,398
Nebraska Community Improvement	300,000	300,000
Other	<u>1,414</u>	<u>1,539</u>
Total operating expenses	<u>1,035,157</u>	<u>1,017,310</u>
Income (loss) from operations	31,717	(36,117)
Interest income	<u>29,605</u>	<u>23,113</u>
Net income (loss)	\$ <u>61,322</u>	<u>(13,004)</u>

See accompanying notes to financial statements.

**CENTRAL INTERSTATE LOW-LEVEL
RADIOACTIVE WASTE COMMISSION**

Statements of Changes in Fund Balances

Years ended June 30, 1997 and 1996

General Fund	1997	1996
Balance at beginning of year	\$ 39,622	52,626
Net income (loss)	61,322	(13,004)
Transfer of interest income from project fund	<u>46,962</u>	<u>—</u>
Balance at end of year	\$ <u>147,906</u>	<u>39,622</u>
Restricted Funds		
Rebate fund:	\$ 829,451	—
Balance at beginning of year		
Additions:	—	829,451
Resolution of State of Nebraska litigation	16,132	—
Interest income	33,693	—
Transfer of interest income from guarantee fund	<u>(600,000)</u>	<u>—</u>
Transfer to guarantee fund		
Balance at end of year	\$ <u>279,276</u>	<u>829,451</u>
Guarantee fund:	\$ —	—
Balance at beginning of year		
Additions:	400,000	—
Funding from major generators	600,000	—
Transfer from rebate fund	33,693	—
Interest income	<u>(33,693)</u>	<u>—</u>
Transfer of interest income to rebate fund		
Balance at end of year	\$ <u>1,000,000</u>	<u>—</u>
Project fund:	\$ 31,284	16,255
Balance at beginning of year		
Additions:	6,439,990	5,793,599
Funding from major generators	<u>15,678</u>	<u>15,029</u>
Interest income	<u>6,455,668</u>	<u>5,808,628</u>
Total additions		
Deductions:	2,178,102	2,194,678
US Ecology	4,161,888	3,498,921
Nebraska Department of Environmental Quality	100,000	100,000
Local Monitoring Committee	<u>46,962</u>	<u>—</u>
Transfer of interest income to general fund	<u>6,486,952</u>	<u>5,793,599</u>
Total deductions		
Balance at end of year	\$ <u>—</u>	<u>31,284</u>

See accompanying notes to financial statements

**CENTRAL INTERSTATE LOW-LEVEL
RADIOACTIVE WASTE COMMISSION**

Notes to Financial Statements

June 30, 1997 and 1996

(1) Organization

The Central Interstate Low-Level Radioactive Waste Commission (Commission) was established in 1984 by an interstate compact among the states of Arkansas, Kansas, Louisiana, Nebraska and Oklahoma with consent of Congress through the Omnibus Low-Level Radioactive Waste Interstate Compact Consent Act. The purpose of the Commission is to carry out the mandate of the Central Interstate Low-Level Radioactive Waste Compact by providing for and encouraging the safe and economical management of low-level radioactive wastes within the compact region.

The Commission is an instrumentality of the compact member states and as such, is exempt from Federal and state income taxes under section 115 of the Internal Revenue Code.

(2) Summary of Significant Accounting Policies

Property and Equipment

Property and equipment consists of furniture, fixtures and equipment recorded at cost. Depreciation is calculated on a straight-line basis over the estimated useful lives of the assets which is currently three to five years.

Fund Balances

The general fund is not restricted for identified purposes by contractual agreement and includes resources which the Commission may use for any purpose related to the site becoming licensed and operational. The restricted funds are used to differentiate funds, the use of which is limited by a contractual agreement and amendments thereto, from funds on which no restriction has been placed or which arise as a result of the operation of the Commission for its stated purposes.

The source of the project fund is from six major generators which are providing funding for the low-level radioactive waste disposal project under an agreement with the Commission (see note 3). The six major generators are Arkansas Power and Light Company, Gulf States Utilities Company, Louisiana Power and Light Company, Nebraska Public Power District, Omaha Public Power District and Wolf Creek Nuclear Operating Corporation. The agreement specifies the project funds provided by the major generators are to be used only to reimburse US Ecology, Inc. (US Ecology) for project costs incurred as defined in Section 4.01 of the Commission's contract with US Ecology.

The use of interest earned on the project fund is not restricted and is periodically transferred to the general fund.

(Continued)

CENTRAL INTERSTATE LOW-LEVEL
RADIOACTIVE WASTE COMMISSION

Notes to Financial Statements

Page 2

(2) Summary of Significant Accounting Policies

Fund Balances

Use of the rebate funds is restricted to payment of certain costs incurred to establish the low level waste facility or mitigate the impact of low level radioactive waste disposal facilities on the State of Nebraska.

The Commission has agreed to guarantee payment by US Ecology of certain licensing activity costs incurred by the State of Nebraska. Related to this guarantee, the Commission is obligated to create and maintain a segregated restricted account with a balance of \$1,000,000 for a guarantee fund, if needed, for payment of the State of Nebraska's licensing expenses and payments to its contractors in the license application and review process, should US Ecology default on prelicensing payments to the State of Nebraska. On July 12, 1996, the Commission transferred \$600,000 to the guarantee fund from rebate funds. The major generators also deposited \$400,000 in the Commission guarantee fund on July 12, 1996. Commission management believes that presently no circumstances exist to cause the use of monies in the guarantee fund for payment of licensing costs incurred by the State of Nebraska. At the end of the prelicensing period, when the license decision is final, the guaranty provisions expire. When that date approaches and any remaining anticipated costs of the licensing activities are determined and paid, the \$400,000 balance in the guarantee fund shall be released to the major generators. The remaining \$600,000 may then be used by the Commission for any legal purpose.

The interest income earned on the \$400,000 deposited in the guarantee fund by the major generators is remitted directly to the major generators. The interest income earned on the remaining \$600,000 is periodically transferred to the rebate fund.

Use of Estimates

Management of the Commission has made a number of estimates and assumptions relating to the reporting of assets and liabilities to prepare these financial statements in conformity with generally accepted accounting principles. Actual results could differ from those estimates.

(3) Contractual Agreements

In January 1988, the Commission entered into an agreement with US Ecology for the design, development, construction, operation and eventual decommissioning of a facility for the disposal of low-level radioactive waste. The agreement specifies eight project phases from identification of a host state and preparation of a siting plan to closure and post closure of the facility.

(Continued)

CENTRAL INTERSTATE LOW-LEVEL
RADIOACTIVE WASTE COMMISSION

Notes to Financial Statements

Page 3

(3) Contractual Agreements, Continued

Current funding for the siting, licensing, development and construction of the facility is being provided by six major generators under separate agreement and, in part through equity contributions from US Ecology. Equity contributions were accomplished by US Ecology through credits on billings to the Commission for the facility. The Commission entered into the agreement to provide necessary funding for the project with the major generators in January 1988 and as currently amended.

(4) Lease

Rent expense under an operating lease for office space was \$35,218 and \$34,161 for the years ended June 30, 1997 and 1996, respectively. The future minimum rental payments under this lease are as follows:

For the year ended June 30:	
1998	\$ 28,840
1999	28,840
2000	<u>19,227</u>

**DOE/EM/0000
DRAFT**

Report to Congress

**1997 Annual Report on
Low-Level Radioactive Waste
Management Progress**

February 1998

ABSTRACT

The Low-Level Radioactive Waste Policy Act, 1980 (Public Law 96-573), as amended by the Low-Level Radioactive Waste Policy Amendments Act of 1985 (Public Law 99-240), states as Federal policy that low-level radioactive waste can be most safely and effectively managed on a regional basis. The law encourages states to enter into regional compacts for low-level radioactive waste disposal by offering compacts approved by Congress the authority to restrict use of their regional disposal facilities to waste generated within the respective regions. (The current configuration of compacts is shown in Figure 1 at the end of the report.)

Section 7(b) of the Act requires the Department of Energy (DOE) to "prepare and submit to Congress on an annual basis a report which summarizes the progress of low-level waste disposal siting and licensing activities within each compact region," and to review other topics related to the management and disposal of low-level radioactive waste. This is the twelfth annual report prepared in response to the Act. The report summarizes the activities during calendar year 1997 related to the establishment of new disposal facilities for commercially-generated low-level radioactive waste. The report emphasizes significant issues and events that have affected progress in developing new disposal facilities, and also includes an introduction that provides background information and perspective on United States policy for low-level radioactive waste disposal.

EXECUTIVE SUMMARY

The Low-Level Radioactive Waste Policy Act, 1980 (Public Law 96-573), as amended by the Low-Level Radioactive Waste Policy Amendments Act of 1985 (Public Law 99-240), states as Federal policy that low-level radioactive waste can be most safely and effectively managed on a regional basis. The law encourages states to enter into regional compacts for low-level radioactive waste disposal by offering compacts approved by Congress the authority to restrict use of their regional disposal facilities to waste generated within the respective regions. (The current configuration of compacts is shown in Figure 1 at the end of the report.)

In 1992, the U.S. Supreme Court issued an opinion that interpreted for state policy makers the extent of their obligations under applicable provisions of the Act. The Court's decision was issued in response to a lawsuit brought by New York State challenging the Constitutionality of the Act. The Court declined to interpret a provision of the Act that "Each State shall be responsible for providing... for disposal of...low-level radioactive waste" [Section 3(a)(1)], as a command to the states independent of the remainder of the Act. The Court upheld a set of site development incentives in the Act, but interpreted them as elective on the part of the states. (The Court also upheld provisions of the Act not directly related to state obligations to provide for disposal.)

The Act required that any state unable to provide for disposal of low-level radioactive waste after 1995 be required to "take title" to the waste (or assume liability for all damages incurred by a generator as a consequence of the failure of the state to take title). The Court struck down the take title provision, indicating that they believed the remaining milestones and the threat of losing access to the then-operating disposal sites beginning in 1993 would be sufficient to encourage states to meet the intent of the Act.

The Court's opinion left states with a wider range of choices in how or whether to provide for disposal of commercially generated low-level radioactive waste. Today, eight states in nine compacts or proposed compacts continue to pursue the development of new disposal facilities, albeit with different levels of activity. While these states continue their efforts to establish new disposal sites, separate initiatives by the private sector to develop new disposal sites may signal the beginning of a more hybrid system in which efforts by the private sector to meet market demands for waste management services co-exist with the government/compact processes. In 1995, the State of South Carolina decided to make the

privately developed disposal facility in that state, known as the Barnwell facility, available to waste generators nationwide (except in North Carolina). The same year, the Envirocare site, a privately developed disposal facility in western Utah, announced that it would increase its acceptance of some types of Class A low-level radioactive waste. Trade journals have reported on activities of other companies to establish new radioactive waste disposal facilities outside the traditional compact system. Because of these activities, decisionmakers and project sponsors in some states have begun to question whether public agencies need to take an active role in meeting generator demand for disposal capacity.

In compact regions that still rely on state programs to develop new waste facilities, there is some doubt that the private sector alone will continue to be able to provide stable access to disposal capacity for reasonable period of time. It has been noted that the status of the South Carolina facility has changed several times over the past decade, and there is no guarantee that it will remain open for the long term. The Utah site continues to accept only Class A low-level radioactive waste with limited radionuclide concentrations.

Last year's report observed that compact host states continued their site development efforts while unaffiliated states had taken official actions to slow or suspend their processes. In 1997, for the first time, siting programs in two compact host states, Illinois and Ohio, were also suspended or discontinued. Illinois, host state for the Central Midwest Compact, announced that it would cease siting activities until year 2012 when waste volumes are expected to increase with the onset of power reactor decommissioning. The Midwest Compact Commission halted siting activities in Ohio, noting substantially decreasing waste volumes and the availability of disposal capacity outside the region.

Licensing activities continued in 1997 in three states. Texas continued administrative processes in support of upcoming hearings on a 1996 recommendation to issue a disposal license for the proposed facility in Hudspeth County. On October 7, 1997, the U.S. House of Representatives passed a bill approving a proposed compact among Texas, Maine and Vermont. The Senate is expected to consider the bill early in the 1998 session. On October 29, 1997, two Nebraska agencies issued draft documents culminating their seven-year review of a license application submitted for a proposed facility in Butte County. The documents contained no preliminary or tentative conclusions on whether the agencies would approve or disapprove a license for the facility. Instead, the documents contained 152 detailed technical findings, 123 of which were acceptable and 29 unacceptable. The agencies will receive public comment

on the findings through February 4, 1998, then issue a tentative decision, which will also be subject to public comment. Throughout 1997, discussions continued among the Southeast Compact Commission, the State of North Carolina, and regional waste generators on ways to pay for completion of site investigations and construction of the proposed facility. Unable to reach agreement, the North Carolina Low-Level Waste Management Authority voted on December 19 to "begin the orderly shutdown of the project pending the Compact's reversal of its funding position or receipt of other instructions from the North Carolina Legislature."

As in previous years, considerable national attention during 1997 was focused on progress in California. In 1993, the state became the first since 1970 to issue an operating license for a new low-level radioactive waste disposal facility. The site is located on land owned by the U.S. Bureau of Land Management (BLM) in Ward Valley in the Mojave Desert. Construction of the facility has been delayed pending the land transfer. Frustration over issues related to the land transfer led, in 1997, to two lawsuits against the Federal Government, one by the State of California and one by US Ecology, the State's site developer. At year's end, the litigation was still underway.

Last year's report listed several significant activities and decision points that, alone or collectively, have the potential to significantly influence the shape of future low-level radioactive management in the U.S. These mileposts are repeated in Table A-1 below, along with their status as of the end of 1997.

Table A-1: Status of key mileposts in the development of disposal capacity

MILEPOSTS	STATUS
A decision whether or not to transfer the Ward Valley site to California	Terms of land transfer still under negotiation; lawsuits filed against Federal Government
Approval or lack of approval by Congress of the proposed Texas Compact	House of Representatives approved compact; Senate vote awaits 1998 session
Outcome of the Texas adjudicatory hearings on the draft license and the environmental and safety analysis	Hearings scheduled for 1998
A decision by Nebraska whether to grant or to deny an operating license for the proposed facility in Boyd County	"Findings" issued, but no preliminary decision. Proposed decision should follow evaluation of public comments in 1998
Clear positive or negative results from the new studies of the proposed North Carolina site	Shutdown of project begun due to impasse over funding. At year's end, discussions of funding options continue.
Clarification regarding whether currently operating disposal facilities will be able to provide stable, long-term access to disposal	Unresolved. Future of South Carolina facility could be impacted by ability of site operator to pay state disposal taxes. Future of Utah site could be affected by outcome of investigations and lawsuits. Possibility of success of other private sector efforts too early to judge.

The table indicates that none of the anticipated key decision points noted in last year's annual report was resolved during 1997. This suggests that events during 1998 may be pivotal in defining the future direction for management and disposal of low-level radioactive waste.

1997 Annual Report to Congress on Low-Level Radioactive Waste Management Progress

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1997 Annual Report to Congress on Low-Level Radioactive Waste Management Progress

INTRODUCTION

Section 7(b) of the Low-Level Radioactive Waste Policy Act, 1980 (Public Law 96-573), as amended by the Low-Level Radioactive Waste Policy Amendments Act of 1985 (Public Law 99-240) (Act), requires the Department of Energy to:

"...prepare and submit to Congress on an annual basis a report which (1) summarizes the progress of low-level waste disposal siting and licensing activities within each compact region, (2) reviews the available volume reduction technologies, their applications, effectiveness, and costs on a per unit volume basis, (3) reviews interim storage facility requirements, costs, and usage, (4) summarizes transportation requirements for such wastes on an inter- and intra-regional basis, (5) summarizes the data on the total amount of low-level waste shipped for disposal on a yearly basis, the proportion of such wastes subjected to volume reduction, the average volume reduction attained, and the proportion of wastes stored on an interim basis, and (6) projects the interim storage and final disposal volume requirements anticipated for the following year, on a regional basis."

This is the twelfth annual report prepared in response to the Act. As with previous reports in this series, the focus of the report is on progress in establishing new disposal facilities for low-level radioactive waste, and on contemporary issues that may affect progress. The final section of this report addresses the other topics specified in the Act.

LOW-LEVEL RADIOACTIVE WASTE POLICY THROUGH 1997

United States policy on the disposal of commercially-generated low-level radioactive waste has evolved through several distinct periods. In the 1950's, the Atomic Energy Commission (AEC), predecessor agency to the Department of Energy, disposed of radioactive wastes generated by the few

organizations outside the agency that were licensed to possess nuclear materials. The AEC also licensed commercial firms to dispose of radioactive waste at sea. In 1960, at the urging of companies in the private sector, the AEC announced that it would license land disposal facilities, and would phase out the use of AEC facilities for disposal of commercially-generated low-level radioactive waste.

About the same time, states began to assume authority for licensing and regulating the possession of certain radioactive materials, including low-level radioactive waste, as part of the "agreement state" program under a 1959 amendment to the Atomic Energy Act of 1954 (Section 274). These actions launched the era of private sector responsibility for the disposal of low-level radioactive waste. Six commercially-operated disposal facilities were licensed to operate: Beatty, Nevada (1962-1992); West Valley, New York (1963-1975); Maxey Flats, Kentucky (1963-1977); Richland, Washington (1965--); Sheffield, Illinois (1968-1978); and Barnwell, South Carolina (1971--).

The performance of these disposal sites has ranged from good to poor. Three of the sites closed prematurely for failure to perform up to expectations. Reasons cited for the closures include inadequate operational practices, unstable and inappropriate waste forms, and unsuitable geological conditions. The early closure of the three disposal sites led in 1982 to the issuance by the Nuclear Regulatory Commission of comprehensive new regulations designed to address each of the siting, operations, closure, and waste form issues, as well as institutional issues related to long-term financial assurance and public confidence. By this time, however, many policy makers began to believe that the private sector would not be able to establish new disposal facilities to replace those that had closed. Concerned that the remaining three disposal sites might be required indefinitely to meet the national demand for disposal capacity, political leaders in Nevada, South Carolina, and the State of Washington urged the enactment of Federal legislation that would allow states to enter into compact regions for disposal of low-level radioactive waste.

The Low-Level Radioactive Waste Policy Act, enacted late in 1980, was essentially a Congressional policy statement inviting the states to form such compacts. The law offered compacts approved by Congress the authority to limit low-level radioactive waste disposal to waste generated within the respective regions beginning in 1986. This law initiated an era of state responsibility for the disposal of low-level radioactive waste. Although seven compacts were introduced into Congress for approval between 1983 and 1985, Congress did not immediately approve them. So much time had elapsed that it appeared unlikely that new disposal sites could be established by 1986, potentially leaving many generators without access to disposal capacity.

After a series of negotiations involving the states and compact regions, the three compact regions with disposal sites agreed to extend access to the operating facilities through 1992, in exchange for what they believed were stringent site development milestones. Supporters of the legislation believed the milestones would lead to the establishment of new disposal sites by 1993, or, at the latest, 1996. The final milestone required that any state unable to provide for disposal after 1995 "take title" to the waste (or assume liability for all damages incurred by a generator as a consequence of the failure of the state to take title).

Following enactment of the Federal law, states made substantial efforts to establish new disposal sites. From 1982 through 1987, nine compact regions were formed, host states chosen, enabling legislation enacted, and site development programs begun. (The current configuration of compacts is shown in Figure 1, at the end of the report.) To date, however, no new disposal facilities have been built.

Two factors have combined to reduce the sense of urgency of some states to establish new disposal facilities. These were a decision and interpretation by the U.S. Supreme Court related to key provisions of the Act, and the renewed availability of disposal capacity at commercially-operated facilities.

In 1992, the U.S. Supreme Court issued a decision in a lawsuit brought by New York State and others challenging the Constitutionality of the Act. Critical to the Court's opinion was an evaluation of section 3(a), the key provision of the Act that, "Each state shall be responsible for providing...for the disposal of...low-level radioactive waste." The Court declined to interpret the provision as a "command to the states independent of the remainder of the Act." The Court also struck down the take title provision, thereby absolving states that could not provide for disposal from an obligation to accept title, possession and liability for low-level radioactive waste generated within their borders beginning in 1996. (The Court interpreted as "elective" other site development milestones in the Act which have since expired. The Court upheld other provisions not directly related to state obligations.)

Also in 1992, South Carolina enacted legislation extending the operational life of the disposal facility in that state and making the facility available to waste generators nationwide (except those located in North Carolina). About the same time, a facility in Utah, previously permitted for disposal of naturally occurring radioactive materials, obtained a license for disposal of low-level radioactive waste containing limited concentrations of specific radionuclides, generally lower activity class A wastes.

The expiration of site development incentives in the Act, the striking of the take title provision, and the renewed availability of disposal capacity have caused some political leaders to reexamine their commitment to developing new disposal facilities. To others, however, concerns over the continued availability of the South Carolina site and limitations on the kinds of waste accepted at the Utah facility suggest that such private sector solutions may not be enough, and that government programs to establish additional disposal capacity are still needed. In addition, the prospects for success of new private sector initiatives are affected by the division of the Nation into nine regional disposal markets, a byproduct of the compact laws.

During 1997, state and compact officials often emphasized that the circumstances related to the various state and compact programs differ significantly. These varying circumstances have led to different decisions in different states regarding whether or not to continue state-led site development programs. It appears, however, that within each state or region, perceptions among policy makers, project sponsors, and executive officials may differ just as widely regarding the wisdom or viability of continuing the project.

The status of state programs to develop new low-level radioactive waste disposal facilities is shown in Table 1.

Table 1: Status of state programs to establish new disposal facilities

California (<i>Southwestern</i>)	License issued; development of facility awaiting transfer of land from Federal government
Texas (<i>proposed Texas/Maine/Vermont compact</i>)	Notice of favorable licensing decision; final approval pending adjudicatory hearings
Nebraska (<i>Central</i>)	License application review completed, with both "acceptable" and "unacceptable" findings; draft decision on license pending public comment period
North Carolina (<i>Southeast</i>)	Initial steps begun to shut down project, pending resolution of issues related to project funding
Connecticut (<i>Northeast</i>), New Jersey (<i>Northeast</i>), Pennsylvania (<i>Appalachian</i>)	Programs to seek volunteer sites officially ongoing
Illinois (<i>Central Midwest</i>), Massachusetts, Michigan, New York, Ohio (<i>Midwest</i>)	Site development process officially discontinued, suspended or slowed
Colorado (<i>Rocky Mountain</i>)	Site development effort discontinued in favor of long-term access contract with another region
District of Columbia*, New Hampshire, Puerto Rico*, Rhode Island	Did not initiate site development program or join compact

*Defined as states in the Act

KEY ACTIVITIES IN STATES AND COMPACTS

Compact regions cease or delay siting efforts

During 1997 two compact regions took steps to cease or to suspend their site development programs. In doing so, they join several unaffiliated states that have taken similar actions over the past several years.

Illinois, host state for the two-state Central Midwest Compact, enacted legislation on June 26, 1997, that effectively delays the target date for disposal facility operations until the year 2012, to coincide

with increased waste volumes expected to be generated during decommissioning of nuclear power reactors in the state. A background statement issued by the Illinois Department of Nuclear Safety in support of the policy pointed out that it would not be economically viable to operate a disposal facility for the compact region until waste volumes increase with the commencement of power reactor decommissioning. The policy statement notes that any new disposal facility would still have to meet site criteria that was developed during the current process. It observes also that the additional time will permit the development and implementation of a voluntary siting process.

On June 26, 1997, the Midwest Compact Commission passed a resolution to indefinitely cease development activities for a regional disposal facility. The resolution also revoked "all previous resolutions that designated, selected, or confirmed host states for the first regional disposal facility." It, therefore, revoked the Commission's 1991 designation of Ohio as host state for the six-state region. The resolution cited several reasons for taking the action. It noted dramatically declining waste volumes in the Midwest region, apparently escalating costs for site development in other regions, the current availability of disposal capacity, and the early stage of site development within the region where significant expenditures have not yet been incurred. As a result of the decision, the offices of the Ohio Low-Level Radioactive Waste Authority closed September 30, 1997.

Texas, Maine, Vermont Compact receives House approval

On October 7, 1997, the U.S. House of Representatives approved the Texas Compact. The Texas Compact, comprised of Texas, Maine, and Vermont, had been submitted for Congressional approval in each of the past three years. In addition to the terms of Congressional consent accompanying the eight previous low-level radioactive waste disposal compacts, the Congressional consent language for the Texas compact bill specifies that Congressional consent "is granted only for so long as no low-level radioactive waste is brought into Texas from any state other than Maine or Vermont." In the Senate, a companion bill was reported from the Judiciary Committee on March 20, 1997, but was not voted upon before adjournment. The bill is expected to be carried over on the calendar and voted upon early in the 1998 session.

In March 1996, the Executive Director of the Texas Natural Resources Conservation Commission

recommended to the Commission issuance of an operating license for a proposed low-level radioactive waste disposal facility in Hudspeth County. During 1997, activities related to administrative hearings on the recommendation and supporting documentation, including discovery and depositions, continued. The hearings on the recommendation are scheduled to begin January 21, 1998.

Nebraska agency culminates technical review of license application

On October 29, 1997, the Nebraska Low-Level Radioactive Waste Program (a partnership between the Department of Environmental Quality and the Department of Human Services Regulation and Licensure) issued two draft documents related to the Central Interstate Compact Commission's proposed disposal facility in Boyd County. Issuance of the Draft Safety Evaluation Report and the Draft Environmental Impact Assessment was the culmination of a review process that has been underway since the license application was first filed in 1990. The draft documents contain no preliminary licensing decision, but will constitute the technical basis for a future licensing decision.

The draft Safety Evaluation Report contains 152 detailed technical findings, 123 of which are "acceptable," and 29 "unacceptable." The Nebraska Low-Level Radioactive Waste Program announced that written public comment on the reports would be accepted through February 4, 1998. A public hearing is scheduled to take place in Boyd County, Nebraska, from February 2 to February 5, 1998.

Following evaluation of public comments, the agencies plan to issue their final reports along with a tentative decision to issue or deny the license application. The proposed decision will be open to another public comment period and public hearing before the agencies issue a final decision.

North Carolina begins shutdown of site development project

The focus of discussion in the Southeast Compact region during 1997 was how to provide funding to complete additional studies at the proposed regional disposal site in Wake County, North Carolina. Funding on hand with the Southeast Compact Commission is not sufficient to complete the studies and the associated license application review, and North Carolina political leaders have indicated their reluctance to provide significant additional funding from general revenues. In addition, North Carolina estimates that

approximately \$75 million will be needed for facility construction, once a license is approved.

On August 21, 1997, the Southeast Generators' Group, an informal association made up of most of the region's nuclear utilities, presented a proposal under which regional waste generators would provide the necessary funding in exchange for certain conditions and guarantees. The Compact Commission adopted a resolution at the same meeting agreeing to the proposal in concept. Agencies of the State of North Carolina, however, were unable to support the proposal, citing provisions related to the assumption of debt by state agencies and other concerns.

On December 19, 1997, the North Carolina Low-Level Radioactive Waste Management Authority voted to "begin the orderly shutdown of the project pending the Compact's reversal of its funding position or receipt of other instructions from the North Carolina Legislature." At year's end, the Authority had taken steps to begin shutting down the project, although discussions continued among the parties over ways to resolve the funding impasse.

California continues efforts to acquire land for disposal site

In 1993, California became the first state since 1970 to issue an operating license for a new low-level radioactive waste disposal facility. Previous reports in this series have described California's efforts to obtain the land on which the proposed disposal facility is located from the Bureau of Land Management (BLM) under the Department of the Interior (DOI). These activities continued throughout 1997.

A 1995 report by the National Academy of Sciences had recommended, among other things, that a study be conducted of tritium movement in the disposal facility environment prior to acceptance of radioactive waste at the site. Considerable discussion during 1997 centered on who should conduct the study and when. At year's end, protocols for conducting the study were still under review by DOI. California, however, has completed plans to collect samples, and has requested a permit from BLM to begin the activity. DOE agreed to allow the Lawrence Livermore National Laboratory to provide technical assistance to the State of California and to DOI in analyzing samples collected during the study.

In January 1997, the State of California and US Ecology filed lawsuits against the Federal Government. The California suit seeks a court order requiring DOI to transfer the land to the State. The

US Ecology suit seeks monetary damages for DOI's alleged breach of contract in not completing the land transfer process that was formally commenced in early 1992. In February, California joined the US Ecology suit, and US Ecology filed a second suit against the Federal Government similar to the suit filed previously by the State of California. The courts in both cases have received motions for summary judgment and have asked for cross motions. Decisions on the motions are expected in early 1998.

In July 1997, the General Accounting Office issued a report critical of DOI's handling of the land transfer issue. Congressional proponents of the land transfer have indicated that they will continue efforts to transfer the land through Federal legislation.

States continue voluntary siting programs

Three states, Connecticut, New Jersey, and Pennsylvania, continued programs in 1997 to attract communities to volunteer to host disposal facilities. Efforts in Connecticut focused on continued evaluation of assured isolation (described elsewhere in this report) as an alternative to traditional disposal. In the latter half of 1997, the New Jersey Low-Level Radioactive Waste Siting Board held discussions with the Economic Development Commission of Carneys Point township regarding the volunteer process. On December 22, however, the Carneys Point Township Committee voted 4 to 1 to discontinue participation in the process.

NATIONAL HIGHLIGHTS

Emergence of private sector proposals for new disposal facilities

With cessation or suspension of state-run siting programs, there was heightened interest in 1997 in several private sector initiatives to establish new disposal facilities for low-level radioactive waste outside the traditional compact system. New private sector facilities have been proposed in Texas, Colorado, and Utah. While the proposed Texas and Colorado facilities have no plans to accept waste from commercial generators, the developments suggest that private sector companies might also be able to establish new disposal facilities for commercially-generated waste if market conditions were more favorable. The current subdivision of the Nation into nine disposal markets has been a deterrent to such development since competitive disposal

facilities require larger amounts of waste than can be provided by waste generators in most of the disposal regions.

On April 24, 1997, Laidlaw Environmental Services announced its intent to seek a license to dispose of low-level radioactive waste and naturally occurring radioactive material (NORM), including waste from commercial generators, at its "Grassy Mountain" facility in Utah. Located in Tooele County west of the Great Salt Lake, the Grassy Mountain site is currently permitted to accept industrial and hazardous wastes, and PCB's (polychlorinated biphenyls). If the current effort is successful, the facility will dispose of NORM and low-level radioactive waste with limited concentrations of specific radionuclides in a synthetically-lined trench that was initially planned for hazardous waste. The cell would be modified to meet state requirements for low-level radioactive waste disposal. The 10-acre cell can accommodate approximately 20 million cubic feet of waste.

As required by Utah regulations, Laidlaw submitted a "siting plan application" to the State of Utah and applied for local planning and zoning authorization. At year's end, the siting plan application was still under review. Following approval of the siting plan application, the company will file a license application with the State. In November and December, the Tooele County Planning Commission rejected Laidlaw's request for local planning and zoning authorization. The Company plans to appeal the decisions to the Tooele County Commission on January 13, 1998. Should the County turn down the proposal, the company has indicated it will consider a judicial remedy. Utah law also requires approval of the facility by the Governor and State legislature.

Revision of South Carolina disposal fees threatens continued site operations

South Carolina legislation enacted in 1995 allowed the disposal facility in that state to continue operating, and also imposed a state tax of \$235 per cubic foot on all waste disposed at the facility. In 1997, the South Carolina legislature amended the method for computing the tax, effective retroactively to the fiscal year from July 1, 1996, to June 30, 1997. In addition to the volume-based tax on waste disposed, the new formula assesses a contingent annual license tax on "any company" operating a low-level radioactive waste disposal facility in the state. Under the formula, if the 28.5 percent portion of the total revenue that is earmarked for Higher Education Scholarship Grants does not equal \$22 million for fiscal year 1997 (\$23 million for fiscal year 1998, and \$24 million in fiscal year 1999 and thereafter), then the disposal site

operator must make up the difference.

Chem-Nuclear Systems, L.L.C., the company operating the disposal site, met the target goal for 1997. For fiscal year 1998 (ending June 30, 1998), 343,412 cubic feet of waste would be required in order to meet the \$23 million grant fund goal. Half way through the fiscal year, indications are that volumes will fall short of that amount. This has left the company with the problem of meeting the potential shortfall for this fiscal year, and the challenge of devising a system to ensure that the revenue requirements are met in future years.

Late in the year, Chem-Nuclear announced that it would attempt to sell in advance between 5 and 7 million cubic feet of disposal capacity (of the estimated 7.9 million cubic feet remaining) for use over the next 25 years. Purchasers would also be required to pay a nominal incremental surcharge designed to make up for the expected revenue shortfall for the current fiscal year. If the company receives commitments to purchase a sufficient volume, it plans to recommend to the state legislature that the new arrangement be substituted for the current revenue structure. Chem-Nuclear plans to conduct the sale of the capacity in mid-January 1998.

If Chem-Nuclear is unable to raise funds adequate to pay the state tax for fiscal year 1998, or if the State of South Carolina does not approve the plan, company officials have indicated that they will have to look for alternative ways to meet the revenue requirements, including a general increase in disposal fees.

Investigations affect long-range confidence in availability of Utah site

In 1996, a former regulatory official of the State of Utah filed a lawsuit against the President of Envirocare of Utah claiming that Envirocare had not complied with an agreement to provide him certain payments in exchange for consulting activities. The Envirocare official denied the assertions and counterclaimed that requesting such payments constituted extortion. Information in the papers filed in the civil matter led to a criminal investigation by the State of Utah regarding circumstances surrounding the initial licensing of the disposal facility. In February 1997, the Utah Attorney General's office turned over investigation of former Envirocare and Utah officials to the U.S. Attorney's Office and the Federal Bureau of Investigation.

In addition to the criminal investigation, several companies filed civil suits in 1997 against

Envirocare, former officials of the company, and/or a former official of the State of Utah. In March, Nuclear Fuel Services (NFS) sued a former official of Envirocare and a former official of the State of Utah alleging that they had denied NFS an opportunity to develop a disposal facility in Utah. A lawsuit filed in May by Waste Control Specialists of Texas (WCS) against Envirocare of Texas alleges interference with WCS efforts to develop a disposal facility in Texas. In June, Umetco Minerals Corp. filed suit against Envirocare and former officials of Envirocare and the State of Utah alleging violations involving the award of the Denver Radium clean-up project to Envirocare.

At the end of 1997, the criminal investigation and civil suits were ongoing. Earlier in the year, the staff of the Nuclear Regulatory Commission denied a petition from an environmental organization to revoke the Envirocare license and to revoke Utah's agreement state status over issues related to the investigation. However, the potential for repercussions from the civil litigation and criminal investigations led to concern during the year about the long-term availability of the disposal site.

In January 1996, Envirocare submitted an application for renewal of its license to the Utah Division of Radiation Control (DRC). At the end of 1997, the application was still undergoing review through the interrogatory process. DRC has indicated that the investigation and civil litigation has not affected its obligation to review the renewal application.

Interest grows in new approaches and methods

Delays in establishing new disposal facilities and insecurity over continued access to existing disposal sites have contributed to interest in alternative approaches and methods for long term management of low-level radioactive waste. Ideas discussed during the year included the consolidation of the systems for managing and disposing of defense and non-defense waste; assured isolation as an alternative to traditional near-surface disposal; and allowing low-level radioactive waste from nuclear power reactor decommissioning to be permanently isolated by entombment within the reactor containment building.

A unified system for low-level radioactive waste management. One proposal that

generated discussion in 1997 was for the establishment of a single "unified" system for treatment and disposal of low-level radioactive waste. Unlike many other nations, the U.S. has maintained two systems for radioactive waste management, one for DOE and nuclear weapons-related defense waste, and one for commercial and non-defense waste. State officials have expressed interest in using DOE facilities for the treatment of commercially-generated mixed waste that cannot be treated by available private sector facilities. At the same time, DOE has begun to explore the possibility of using private sector facilities for treatment and disposal of defense waste. Advocates for a unified system have urged more explicit recognition of these activities and trends, and more deliberate plans for merging the two systems for management and regulation of low-level radioactive waste into one.

In a report issued in September 1997, the Governor of Nebraska, stated, "I think it is clear that a national perspective needs to be considered, including focusing on combining resources and facilities with the federal government so that more land is not contaminated by low-level waste." Critics of the proposal to use DOE facilities for commercially-generated waste note that states in which DOE facilities are located are often opposed to the acceptance by these facilities of any additional waste for disposal, whether or not the waste is generated by commercial entities.

Assured Isolation of low-level radioactive waste. In recent years, there has been growing interest in giving greater regulatory credit for the use of engineered barriers and institutional controls in isolating waste from the environment. While the environmental impact statement for the current disposal regulations was modeled upon shallow land burial of radioactive waste as practiced in the late 1970's, states and DOE installations in the eastern U.S. actually plan to house the waste in manufactured vaults, in most cases above the natural grade of the earth's surface.

The concept of assured isolation (or assured storage), introduced in 1995, is an outgrowth of this interest. Under the concept, waste typically would be placed in above-grade vaults similar in appearance to above-grade "disposal" vaults. However, rather than closing and sealing the vaults and monitoring nearby wells for evidence of groundwater contamination, the interior of the

vaults would remain accessible and would be inspected on a regular basis to head off any failures before they occurred. Proponents of the approach point out that such facilities could be safely operated at more locations than traditional disposal sites, allowing them to be co-located with existing nuclear facilities. They believe that the ability to continually inspect the structural integrity of the facility might help reduce public concerns over the long-term performance. Critics of the concept are uncomfortable with extended reliance on active human maintenance to ensure successful isolation of the waste.

In late 1997, representatives of six state agencies requested that DOE's National Low-Level Waste Management Program commission a study to identify the possible requirements of a license application for such a facility. The study is expected to be completed in mid-1998.

Entombment of low-level radioactive waste. With an increasing number of nuclear power reactors facing decommissioning, the NRC has accelerated its efforts to resolve decommissioning issues. On July 21, 1997, for example, the NRC published in the Federal Register (62 FR 39057) the final rule on Radiological Criteria for License Termination, which had been under development for several years.

In April 1997, the Commission directed that the NRC staff, "describe the technical requirements and regulatory actions which would be necessary for entombment to be a viable decommissioning option. With entombment, low-level radioactive waste that accumulated during decommissioning of the power reactor would be emplaced within the fortified reactor containment building, and the building would serve as the final resting place for the material.

The NRC directive on entombment was prepared in response to a request from the Florida Public Service Commission and the Department of Health and Rehabilitative Services in early 1996. The Florida agencies questioned the basis for the NRC's apparent preference for dismantlement of power reactors as described in a 1995 Federal Register Notice (60 FR 37374), and urged reconsideration of entombment as an acceptable alternative. An NRC staff response to

the directive is expected within the first several months of 1998. Few utilities are actively examining entombment as a decommissioning option. However, one utility has pointed out that the low level of interest may be due, at least in part, to longstanding NRC policies discouraging the option.

OTHER ANNUAL REPORT TOPICS

In addition to summarizing the progress of siting and licensing activities within the states, the Act requires the Department of Energy to report annually on several other specific topics.

Volume reduction technologies

Virtually all low-level radioactive waste received at the South Carolina and Washington sites today is treated or stabilized in some manner prior to disposal. In addition to improving the waste form, many waste treatment technologies result in significant reductions in the volume of waste requiring disposal. Treatment may take place at large, centralized commercial facilities, or at the place of generation using smaller scale treatment facilities or mobile units.

In 1996, the Department of Energy's National Low-Level Waste Management Program published the report, "Commercially Available Low-Level Radioactive and Mixed Waste Treatment Technologies" (DOE/LLW-240, available through the Program's home page at: <http://www.inel.gov/national/national.html>). The report discusses the various forms of low-level radioactive waste and indicates which are amenable to commercially available treatment technologies. The technologies include sizing, compaction, filtration, decontamination, evaporation, separation, incineration, vitrification, immobilization/stabilization, metal recovery, and physical and chemical treatments.

Because the number of such technologies does not change significantly from year to

year, DOE did not update the report during 1997. During 1998, DOE plans to update the information in the report and convert it into an electronic file available at the Internet address provided above.

Transportation requirements

In September 1995, the Department of Transportation, in cooperation with the Nuclear Regulatory Commission, published a final rule in the *Federal Register* ("Hazardous Materials, Transportation Regulations; Compatibility with Regulations of the International Atomic Energy Administration," 60 FR 50292) on offsite transportation of radioactive materials, which includes low-level radioactive waste. The purpose of the rule was to bring United States radioactive material transportation requirements in line with International Atomic Energy Agency standards, and to provide a more uniform degree of safety for various types of waste shipments. Most provisions of the new rule became effective April 1, 1996.

Among other changes, the new rule revises the requirements for shipping "low specific activity" (LSA) material, which is radioactive material that does not exceed specific concentrations. A large portion of low-level radioactive waste meets the requirements to be shipped as LSA material. The new rule divides LSA material into three categories requiring levels of industrial packaging rated from 1 to 3, with 3 being the most secure. Because the new rule lowers the radionuclide concentration levels subject to LSA packaging, the rule could require such packaging for a substantial volume of contaminated soils and uranium mill tailings that previously could be shipped as unpackaged bulk materials. The new regulations also required the use of the international system of units for the measurement of radioactivity, effective April 1, 1997.

Interim storage requirements

Section 5(b) of the Act, which was added by the Low-Level Radioactive Waste Policy Amendments Act of 1985, allowed the three states with operating disposal sites to limit the volume of waste accepted at those sites between 1986 and 1992, referred to as the "interim access period." It also limited the volume of waste each nuclear power reactor could ship for disposal during that period. Because of these limits, Congress believed that many waste generators might be forced to store significant amounts of waste until new regional disposal facilities were established.

Although no new low-level radioactive waste disposal facilities have been built, the reopening of the South Carolina disposal facility and availability of the Utah facility for some kinds of low-level radioactive waste have alleviated the need for most waste generators to provide on-site storage. While some waste generators, for a variety of reasons, choose to store their waste rather than ship it for disposal, the amounts are not believed to be significant. Therefore, neither the Nuclear Regulatory Commission, the Department of Energy, the Electric Power Research Institute, nor the Nuclear Energy Institute routinely collects and compiles data on the amount of low-level radioactive waste stored on site at the place where it was generated. The Institute for Nuclear Power Operation (INPO) collects survey information from nuclear power reactors, but has not compiled the information on the amount of low-level radioactive waste stored on site.

On September 5, 1997, a Diplomatic Conference of the International Atomic Energy Agency approved the "Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management." Among its reporting requirements, signatories to the agreement must provide an inventory of applicable low-level radioactive waste that is being held in storage, has been disposed of, or "has resulted from past practices." At year's end, DOE and the NRC, signatories to the Convention on behalf of the United States, were discussing approaches for complying with the reporting requirements.

Interim storage and disposal requirements for the forthcoming year

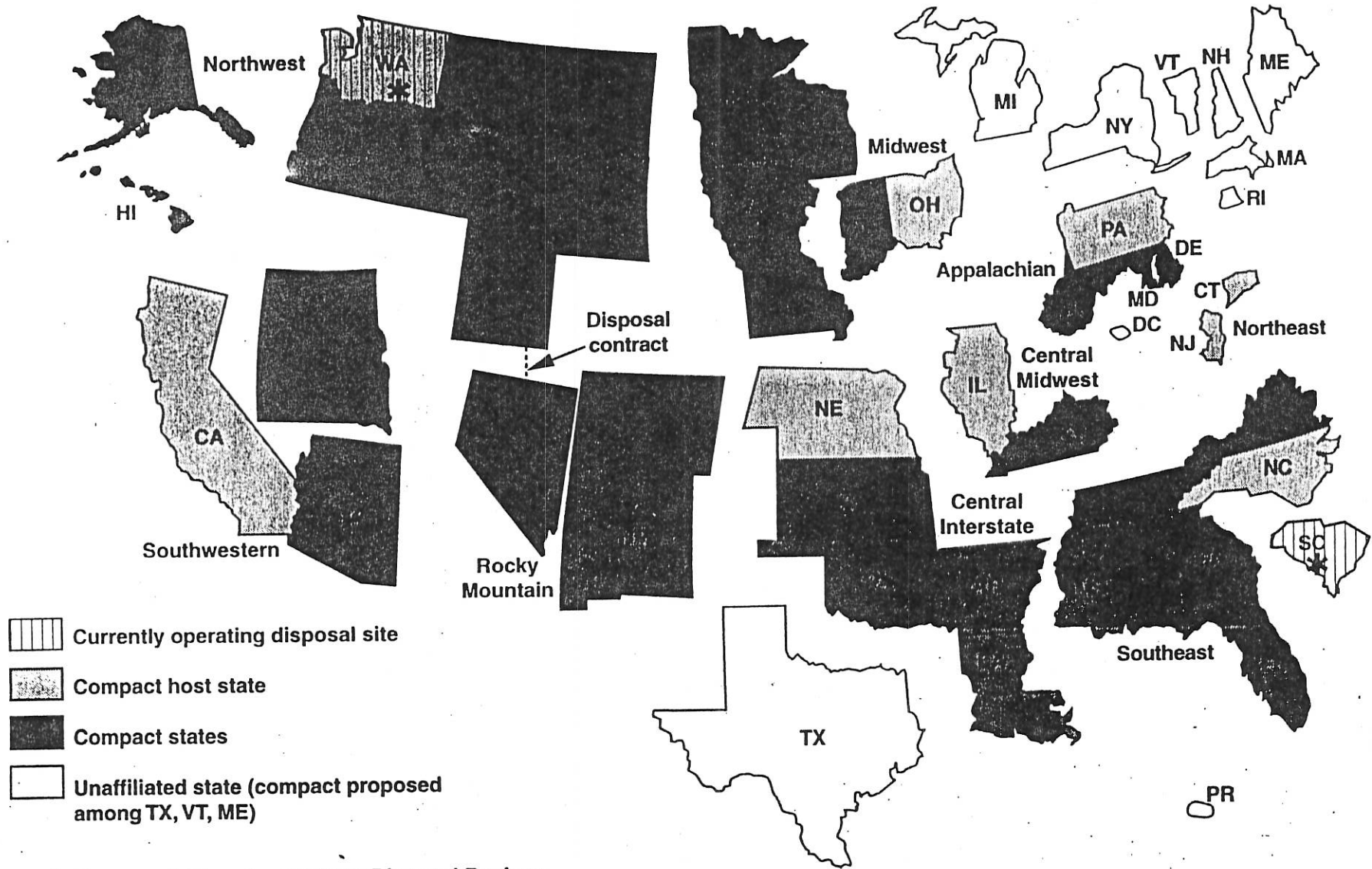
The Department of Energy does not collect data for projecting disposal requirements for the upcoming year. The economics of data collection would be far in excess of the benefits derived from the data. Generators of commercial low-level radioactive waste are regulated by the Nuclear Regulatory Commission and various state agencies, not the Department of Energy. With the significant amount of volume reduction that has taken place over the past decade, acceptance of all the Nation's waste does not pose operational problems for the Nation's currently operating disposal sites. In 1997, the South Carolina and Washington sites together received approximately _____ cubic feet of waste for disposal, down from 471,000 cubic feet the previous year. In 1985, the same two disposal sites received over 2,600,000 cubic feet of waste. In addition, the Envirocare site is also now available for disposal of some types of low-level radioactive waste.

Because disposal facilities are, in fact, available to waste generators in all states except North Carolina, generators who store their waste do so for reasons unrelated to the availability of disposal capacity.

Waste shipped for disposal

The National Low-Level Waste Management Program's Manifest Information Management System provides detailed information on low-level radioactive waste shipped for disposal. This system is accessible on the Program's Internet home page at <http://www.inel.gov/national/national.html>. The Department also provides data on the volumes and categories of low-level radioactive waste shipped for disposal on an annual basis in the report, the "State-by-State Assessment of Low-Level Radioactive Waste Shipped for Disposal." The report for 1996, document number DOE/LLW-243, was issued in September 1997. The annual data report for calendar year 1997 is scheduled to be published in September 1998.

Commercial Low-Level Waste Disposal Regions



1: Commercial Low-Level Waste Disposal Regions

D S E R

DRAFT SAFETY EVALUATION REPORT

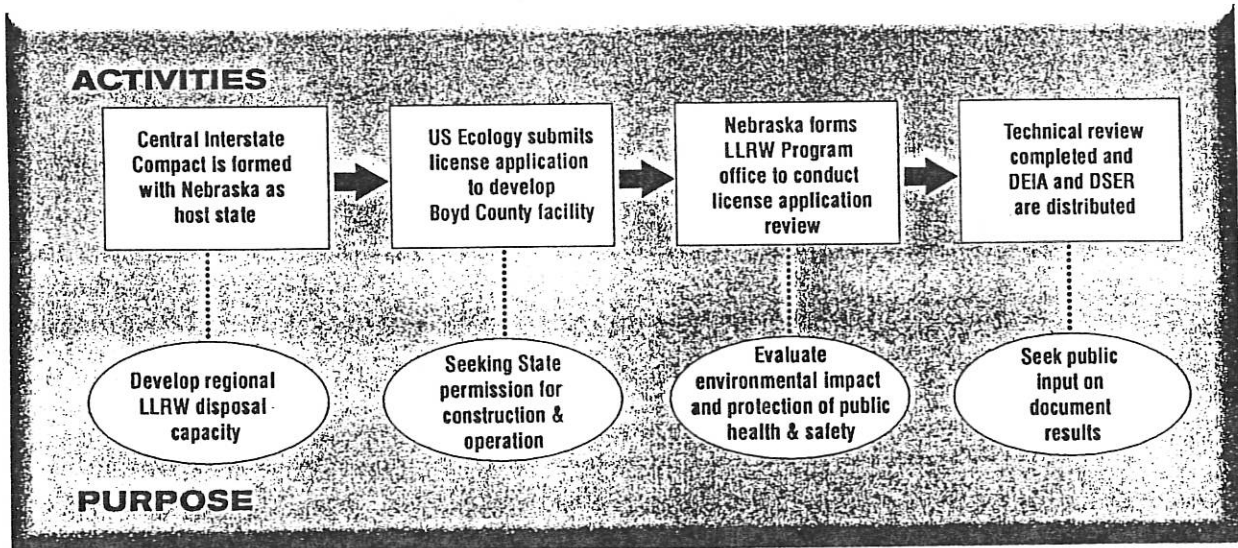
Executive Summary

INTRODUCTION

Activities Leading up to This Document

A private company, US Ecology, has submitted a license application to site, construct, operate, and ultimately close a Low Level Radioactive Waste (LLRW) disposal facility in Boyd County, Nebraska. Before any license decision is made, the State of Nebraska (State) must evaluate the application to determine if the proposed action meets State laws and regulations for protecting citizens' health, safety and the environment. The State must issue a license before any construction or disposal operations may begin. The State has enacted specific laws and regulations to govern any such facility and has created a dedicated organization, the Nebraska LLRW Program, to conduct activities that would ensure these laws are met.

LLRW ACTIVITY SUMMARY



In response to US Ecology's action, the LLRW Program has conducted an in-depth, comprehensive technical review of the license application. This review has concluded with the release of this Draft Safety Evaluation Report (DSER) and the companion document, the Draft Environmental Impact Analysis (DEIA). With the release of these documents, Nebraska is beginning a decision-making process regarding the licensing of the LLRW disposal facility proposed by US Ecology. Production of the DSER and DEIA documents allows the public to review and comment on: 1) the findings of the technical review with regard to protection of human health, safety, and the environment, and 2) impact to the environment, and the relative impacts of the Boyd County facility compared to other alternatives.

SAFETY EVALUATION

A Process for Evaluation and Public Disclosure

The DSER presents the results of the LLRW Program's technical review of the license application. The DSER provides the technical basis to allow the LLRW Program to determine if the facility meets applicable State laws and regulations, and if the facility's design, physical features, and safety systems are technically acceptable.

The DSER presents the evaluation of numerous different aspects of the facility including site characteristics, design and construction, operation, and closure. Each of these aspects is evaluated using accepted engineering methods and standards, U.S. Nuclear Regulatory Commission (NRC) guidance, and Nebraska laws and regulations.

The Nebraska LLRW Program has been responsible for the technical review of the license application. The "LLRW Program" is a term used to describe the State's regulatory partnership between the Nebraska Department of Environmental Quality (NDEQ) and the Nebraska Department of Human Health Services Regulation and Licensure (HHS R&L). The LLRW Program organized a team of technical professionals from government, universities, and private organizations to assist in review of the application. The resulting review team consists of more than 100 scientists, engineers, accountants, and legal professionals. The disciplines and areas of expertise within the review team are as follows:

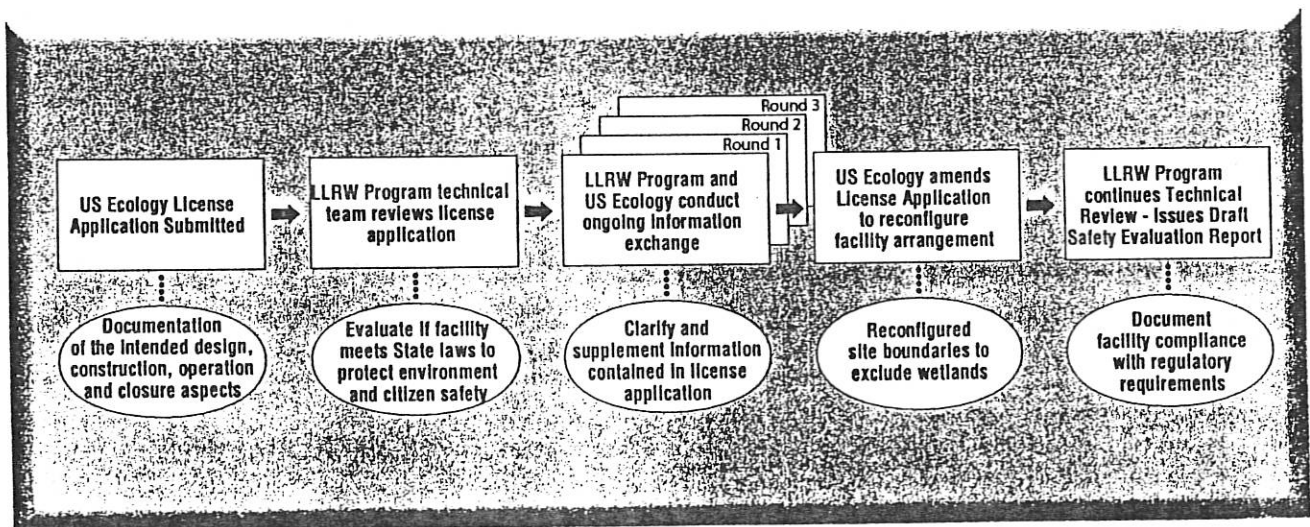
Biology	Mechanical Engineering
Civil Engineering	Nuclear Engineering
Climatology and Meteorology	Operational/Construction
Economics	Performance Assessment
Electrical Engineering	Project Management
Environmental Engineering	Quality Assurance
Environmental Law	Regulatory Analysis
Financial Assurance	Seismology
Geochemistry	Sociology
Geology	Soils Engineering
Health Physics	Structural Engineering
Hydrogeology	Surface Water Hydrology
Materials Engineering	

The LLRW Program's technical review activities must satisfy statutory obligations created by a body-of-law under State statutes: the Nebraska Low-Level Radioactive Waste Disposal Act and the Nebraska Radiation Control Act. These statutes and supporting regulations require that the license application for an LLRW disposal facility satisfactorily address the following topical areas:

- General Information
- Specific Technical Information and Analysis
- Institutional Information
- Financial Information
- Performance Objectives

In its role to protect public health, safety, and the environment, the LLRW Program conducted an extensive review of the license application. This technical review has been an iterative process in which the LLRW generated over 2200 questions and comments. These questions and comments were compiled in document form and transmitted to US Ecology in what was called a "comment round." US Ecology responded to the technical comments comprising each round. The information provided in the application, as well as information gained in the technical review and "comment round" process, was evaluated to determine the proposed facility's technical acceptability, and if regulatory requirements would be met. In addition, the LLRW Program technical review team conducted independent investigations and analyses to obtain information not provided in US Ecology's license application. The independent body-of-knowledge gained from these efforts provided the LLRW Program with additional ability to determine if the proposed facility is capable of meeting the performance objectives required by State law.

TECHNICAL REVIEW SUMMARY



The technical review required a multi-discipline effort of unprecedented scope and depth because, in part, the facility proposed by US Ecology is unlike any other existing LLRW disposal facility. Existing disposal facilities, and those proposed for Texas and California, use shallow land burial technology for disposal for LLRW. Nebraska law, however, requires that an LLRW disposal facility be designed for above-ground disposal or other technology which contains one or more engineered, artificially constructed barriers to isolate the waste from the surrounding environment. Additionally, the law requires that the facility be designed to meet zero-release objectives.

Another important factor contributing to the depth of the technical review was the hydrology of the proposed site. The original license application received in 1990 was in the form of two documents: the Safety Analysis Report (SAR), consisting of 11 volumes; and the Environmental Report (ER), in two volumes, totaling more than 4,000 pages. The site for the proposed facility in the original license application totaled 320 acres, including approximately 43 acres of wetlands. In January 1993, the NDEQ and NDOH (which has since become HHS R&L) issued a notice of intent to deny a license because the site did not meet the minimum requirements set forth in Nebraska regulations. These regulations require the site to be free of wetlands, well drained, and free of areas of flooding and frequent ponding. In August 1993, US Ecology amended its application to reconfigure the site from 320 to 110 acres in an effort to eliminate any wetlands from the site. At the time of the reconfiguration, the review was in the third-round of the comment process.

US Ecology provided detailed information about the reconfigured facility in April 1994 in their updated SAR, Revision 7, which contained extensive changes: nearly every section of the SAR had been affected by the reconfiguration. This revision required that the LLRW Program technical review team reevaluate all areas of the revised license application documents before issuing final technical review comments.

US Ecology continued to revise its license application to reflect changes made necessary by the site reconfiguration. In July 1995, US Ecology informed the NDEQ and HHS R&L that it had submitted its responses to the final round of comments and, what was to be the final SAR, Revision 8, noting, "We consider our work in this area to be complete..." The letter concluded that US Ecology had furnished all necessary information for the State to complete its technical review.

Since US Ecology's initial license application submittal in 1990, the size of the application review documentation has grown to approximately 30,000 pages. As the end product of the final technical review, the Nebraska LLRW Program has prepared and distributed this DSER and the DEIA.

SUMMARY OF DSER CONTENTS

Key Findings and Conclusions

The organization of this DSER reflects the LLRW Program's technical review and evaluation of US Ecology's license application. In this regard, the DSER is organized so that its topics can be directly compared to US Ecology's SAR and the standard review plans contained in NUREG-1200. The results of the license application technical review are organized around eleven subject areas and are summarized as follows:

- ▶ **DSER Section 1.0, General Information**, presents seven evaluation findings that discuss US Ecology's organizational structure, their technical and personnel qualifications, and the purpose and scope of the project. In those findings, the LLRW Program determined that the data and information presented in US Ecology's license application are substantially accurate, clearly presented, and acceptable.

- ▶ **DSER Section 2.0, Site Characteristics**, presents twenty-two evaluation findings that discuss US Ecology's description of the sites location, natural and demographic features, geologic features, surface and groundwater conditions, and preoperational environmental monitoring. In those findings, the LLRW Program determined that the data, analysis, and information presented in US Ecology's license application are acceptable.

- ▶ **DSER 3.0, Design and Construction**, presents forty-two evaluation findings that discuss US Ecology's descriptions of the proposed facility's principal design features, design considerations for normal and accident conditions, construction methods and equipment, and design features of auxiliary systems and facilities. In those findings, the LLRW Program determined that the data and information presented in US Ecology's license application accurately and clearly describe the design features and demonstrate that those features have been carefully considered in a coherent facility design.

- ▶ **DSER Section 4.0, Facility Operations**, presents sixteen evaluation findings that discuss US Ecology's proposed operational practices associated with the receipt, inspection, and disposal of LLRW. The LLRW Program determined the data and information regarding waste segregation, handling and emplacement programs, methods proposed for locating disposal units, and buffer zone dimensions are acceptable.

✓ The LLRW Program determined that aspects of US Ecology's proposed program for waste receipt and inspection are not acceptable. Several issues serve as the basis for this determination. Among those are the inadequacy of the programs for verification of waste classification and characterization, identification and remediation of damaged packages, and inspection

of waste packages at the source of generation. Their description of operations during the placement of waste in the disposal units is not acceptable because US Ecology's plan for filling void spaces lacks necessary information pertaining to the Class B/C units. The operational environmental monitoring and surveillance program is unacceptable because of the omission of several technical details from their Comprehensive Environmental Monitoring Project Plan including an inadequate number of groundwater monitoring wells around the perimeter of the site.

► **DSER Section 5.0, Site Closure Plan and Institutional Controls**, presents eleven evaluation findings that discuss US Ecology's proposed plans for site closure and stabilization. The LLRW Program determined that US Ecology's design features intended to prevent erosion after site closure, geotechnical aspects of the closure plan, structural performance monitoring system, and waste covers to be constructed over the disposal units during closure are acceptable.

✓ US Ecology's plan for demobilization and decontamination is acceptable with the exception of the program for maintaining worker exposures as low as reasonably achievable (ALARA) during site closure. US Ecology's description of their post-operational environmental monitoring program is not acceptable because several technical issues have not been adequately addressed.

► **DSER Section 6.0, Safety Assessment**, presents twenty-five evaluation findings that discuss US Ecology's safety assessment of the release of radioactivity, intruder protection, and long-term stability of the site. The LLRW Program determined US Ecology's description of the types, kinds, and quantities of LLRW to be generated during facility closure is acceptable, as is their determination of water flux through the engineered cover system. Additionally, US Ecology provided adequate descriptions of the surface water transfer mechanism, the procedures for the segregation of waste, measures to protect against inadvertent intrusion, and meteorological data for use in the pathway analyses. The LLRW Program determined that the hydrologic description including flooding determinations, erosion protection and stability features of the disposal site, analysis of settlement and subsidence, and remedial action associated with settlement are acceptable.

US Ecology adequately identified the potential accidents and unusual operating scenarios; release scenarios through the groundwater, air, surface water, and biotic pathways; the emanation of gamma radiation; and the conceptual model of the groundwater transfer mechanism. However, their evaluation of the effects caused by these pathway scenarios is unacceptable. Although US Ecology adequately described the conceptual model of atmospheric transport, the input parameters, source term, puff dispersion factors, and wind direction limits are unacceptable which renders the air pathway analysis unacceptable.

✓ US Ecology's description of the waste received during the operational period is unacceptable because their radionuclide inventory estimates are incomplete. Several issues relative to the details of this radionuclide inventory, computational

models, analytical methods, and, consequently, the dose calculations used in the analysis, resulted in the assessment of radiological impacts being unacceptable. The LLRW Program however, has conducted an independent performance assessment for which the results indicated annual doses less than the regulatory limits.

► **DSER Section 7.0, Occupational Radiation Protection**, presents fourteen evaluation findings that discuss US Ecology's description of the occupational radiation exposure, facility radiation sources, the radiation protection design features, and their radiation protection program. The LLRW Program determined that US Ecology's radiation protection design, methods of surveying for radioactivity, the use of portable and fixed instrumentation, and description of radiation sources are acceptable.

The LLRW Program determined that US Ecology's description of the proposed radiation protection program for the facility is acceptable. However, the personal dosimetry program is not acceptable because they have not included a summation of internal and external dose, a plan for a declared pregnant female worker program, and have not demonstrated an understanding of the rationale for the regulations requiring posting and access control.

US Ecology's program for controlling occupational radiation exposure is acceptable. However, their projection of worker exposures is not acceptable because they did not demonstrate adequate ALARA planning in their proposed method of operation. Also, the LLRW Program determined that aspects of US Ecology's facility ALARA design features and shielding program are not acceptable.

► **DSER Section 8.0, Conduct of Operations**, presents nine evaluation findings that discuss US Ecology's organizational structure, qualifications, and emergency planning. The LLRW Program determined that US Ecology's organizational structure and training programs are acceptable. Also, the LLRW Program has determined that US Ecology's operating organization and facility staffing plans are acceptable. The LLRW Program conducted an independent evaluation of the financial qualification of US Ecology and its parent company, American Ecology, Inc. However, given the changing nature of the variables affecting the commercial disposal of low level radioactive waste generally, and these impacts on US Ecology directly, a final evaluation of US Ecology's final qualifications will be conducted at the time the draft and final license decisions are made.

US Ecology's analyses of the credible accident scenarios in Section 6.0 were found to be unacceptable which also makes their proposed emergency response program unacceptable. The LLRW Program has independently assessed the emergency scenarios and the results of the truck fire scenario indicated that an off-site emergency response plan is warranted. US Ecology has not developed an off-site emergency response plan, nor presented letters of agreement which specify authority, responsibility, and limits of the actions with off-site agencies, fire departments, hospitals, contractors and state and local

emergency response teams.

► **DSER Section 9.0, Quality Assurance**, presents two evaluation findings that discuss the LLRW Program's evaluation of US Ecology's project and corporate quality assurance programs. In those findings, the LLRW Program determined that US Ecology has accurately and clearly described their quality assurance plan and their quality assurance organizational structure is adequate to carry out the efforts necessary to develop and operate this facility.

► **DSER Section 10.0, Financial Assurance**, presents four evaluation findings that discuss the LLRW Program's evaluation of US Ecology's financial assurance for the operational, site closure, and institutional control periods. In those findings, the LLRW Program determined that the data and information presented in US Ecology's license application are substantially accurate, clearly presented, and acceptable.

► **Section 11.0, License Conditions**, presents the LLRW Program's discussion of the recommended license conditions that appear in the DSER.

ONGOING ACTIVITIES

The Steps Following the DSER

The Directors of the NDEQ and HHS R&L – LLRW Program will deliberate whether to issue or deny issuance of a license to site, design, construct, operate, and close a LLRW disposal facility in Boyd County, Nebraska. As a part of the deliberative process, they will consider information presented in the DSER, the DEIA, as well as information and comments provided by agencies, organizations, and members of the public on these documents.

The release of this DEIA, and the DSER companion document, begins a public participation process. In early November, notice of an initial public hearing will appear in newspapers. This will begin a ninety-day public comment period allowing citizens the opportunity to make comments on their review of the state's documents. After the initial public hearing in early February, the DEIA and DSER will be revised and issued without the "draft" designation. A proposed license decision will then be announced by the State and will be the subject of a second public comment and hearing process. "Final" versions of the EIA and SER will be issued followed by the State's license decision.

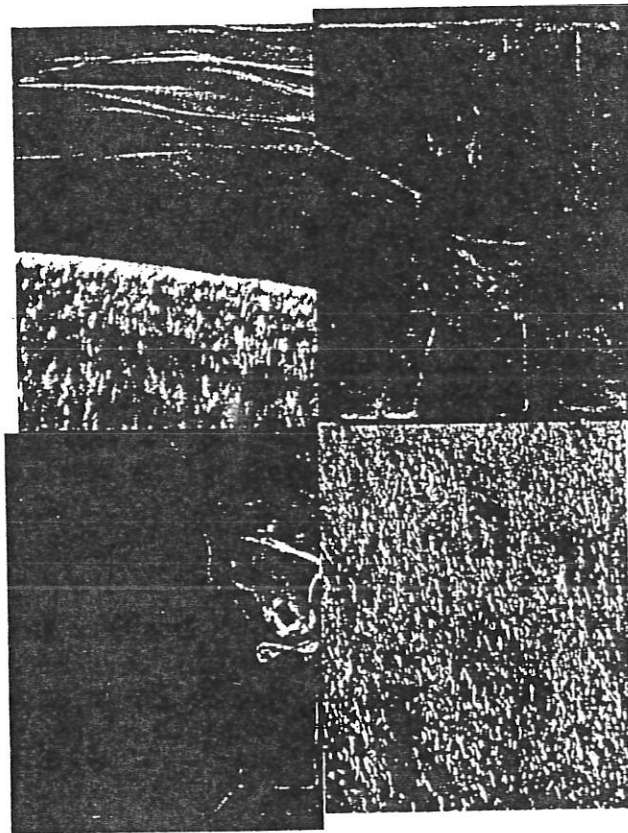
Additional specifics regarding ongoing State activities can be found in the INFO Guide resource document, and in Appendix A to the DSER.

DRAFT SAFETY EVALUATION REPORT

OF THE

Central Interstate Compact Proposed Low-Level Radioactive Waste Disposal Facility License Application

Volume II



Prepared by the
State of Nebraska
Low-Level Radioactive Waste Program

October 1997

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Appendix A State of Nebraska's Review of the License Application

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Section 11.0

License Conditions

The LLRW Program has conducted a comprehensive analysis of the license application and concluded that individual findings fell into three categories.

These categories are:

- findings found to be acceptable;
- findings found to be unacceptable; and
- findings for which recommended license conditions have been prepared.

The LLRW Program has developed recommended license conditions which are included in this Draft Safety Evaluation Report. Should a license be issued on the basis of the information presented in this DSER, other license application support documents, and the results of the public participation process, conditions will be imposed on the licensee.

The recommended license conditions contained in this DSER were divided into two broad categories. The first category is generally categorized as "procedures" or "plans and specifications." These license conditions are the result of the LLRW Program making an acceptable evaluation finding with the provision that US Ecology submit additional information for review at a later date. For example, in some cases, operating manuals and procedures cannot be completed until an actual facility is constructed. Thus, the recommended license condition might require submission of a detailed procedure for review and approval prior to the initiation of operations. Similarly, plans and specifications are generally not expected to be completed prior to a decision being made. Should a license be issued, complete construction plans and specifications would be required.

The second category is generally categorized as "administrative." These conditions identify the need for additional or updated information to be submitted. Examples include financial data, quality assurance program data, company organizational information and environmental monitoring data.

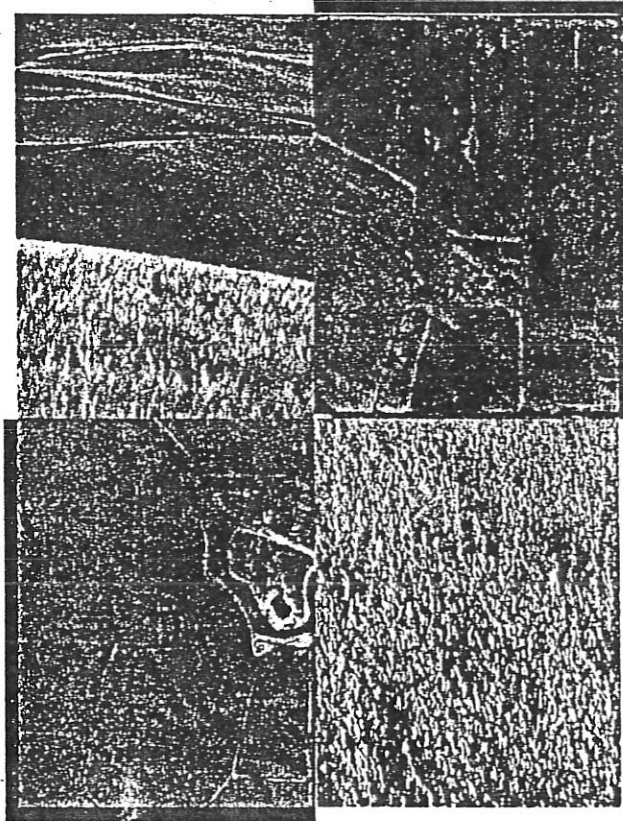
Where license conditions have been identified, either "procedures," "plans and specifications" or "administrative," they are included in the text of the individual sections of this Draft Safety Evaluation Report. These license conditions are provided in the DSER in order that US Ecology, the public and other interested parties have an opportunity to review and comment during the public participation process.

DRAFT SAFETY EVALUATION REPORT

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Central Interstate Compact Proposed Low-Level Radioactive Waste Disposal Facility License Application

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Section 10.0

Financial Assurance

Introduction

This section of the DSER presents the results of the State of Nebraska LLRW Program's technical review of the Financial Assurance Section in US Ecology's LLRW license application, including SAR, Section 10.0. The LLRW Program based its review on regulations stipulated in State of Nebraska Titles 194 and 180; guidance provided in NUREG-1200; published technical criteria; and professional standards of practice.

Section 10.0 of the DSER addresses the following subjects:

- 10.1 Financial Assurance Requirements for the Operational Period
 - 10.2 Financial Assurance Requirements for Site Closure and Stabilization
 - 10.3 Financial Assurance Requirements for the Institutional Control Period
 - 10.4 Insurance
- References for Section 10.0

Discussion within each of these subjects is organized as follows:

- *Review Objectives.* Presents specific objectives as they pertain to each subject of the license application technical review.
- *Evaluation Findings(s).* Discusses the finding(s) and basis for finding(s), as described in the following:
 - *Finding(s).* Provides a conclusive statement regarding the evaluation of the information presented in the license application.
 - *Basis for Finding.* Presents the acceptance criteria required by Titles 194 and 180 and other guidance documents and discusses how the license application does or does not meet those criteria.

Summary of Section 10.0 Evaluation Findings

Four evaluation findings were prepared as a result of the LLRW Program's technical review of the financial assurance information contained in US Ecology's license application. These findings are presented within this section of the DSER, and each is accompanied by a basis for finding. The evaluation findings for DSER, Section 10.0, Financial Assurance, are summarized in the following table:

Table 10-1. Summary of Evaluation Findings for DSER Section 10.0

Finding Number	Subject	Description	Page
10.1-1	Financial Assurance Requirements for the Operational Period	The LLRW Program has determined that US Ecology's financial assurances for the operational period are adequate and meet the requirements of Titles 194 and 180.	10-3
10.2-1	Financial Assurance Requirements for Site Closure and Stabilization	The LLRW Program has determined that US Ecology's financial assurances for site closure and stabilization are adequate and meet the requirements of Titles 194 and 180.	10-12
10.3-1	Financial Assurance Requirements for the Institutional Control Period	The LLRW Program has determined that US Ecology's financial assurances related to custodial care, corrective action, and cleanup on- and off-site are adequate and meet the requirements of Titles 194 and 180. US Ecology's description of institutional control requirements is acceptable.	10-18
10.4-1	Insurance	The LLRW Program has determined that US Ecology's information relative to insurance is acceptable and meets the requirements of Titles 194 and 180.	10-22

10.1 Financial Assurance Requirements for the Operational Period

Review Objectives

The financial assurance requirements for the operational period of the proposed LLRW disposal facility are described in SAR, Section 10.0, and the other related license application documents. This information was evaluated during the technical review to determine whether US Ecology has demonstrated that it meets the financial criteria established by the State of Nebraska to construct, operate, and maintain an LLRW disposal facility.

Evaluation Finding

Finding 10.1-1, Financial Assurance Requirements for the Operational Period

The LLRW Program has determined that US Ecology's financial assurances for the operational period are adequate and meet the requirements of Titles 194 and 180. In the event a license is issued, the following license conditions are recommended:

Recommended License Conditions

- US Ecology shall, within 120 days after issuance of the license, obtain the construction financing, as specified in SAR, Revision 8, Section 10.3.1, updated to current dollars from 1994 dollars. US Ecology shall provide the necessary documentation to the State of Nebraska reflecting this financing.
- US Ecology shall provide 10-Qs and 10-Ks annually.

Basis for Finding 10.1-1, Financial Assurance for the Operational Period

This Basis for Finding presents the applicable regulatory requirements followed by an evaluation of US Ecology's description of their financial assurances for the operational period.

- *Title 194, Chapter 6:001, and Title 180, Chapter 1:012.33, require an applicant to show that it has the necessary funds, or written, assurance of obtaining the funds necessary to plan, design, operate, and remediate a facility.*

An overview of the various funds required as part of financial assurances is included as Attachment 10-A.

The LLRW Program identified the need for information on the parent company, American Ecology (AE), which provides the financial resources for US Ecology, in order to judge the total financial feasibility of the project. In response, US Ecology indicated that, as a publicly traded company, the financial reporting activities of AE are strictly regulated by the US Securities and Exchange Commission (SEC). US Ecology also indicated that if there are specific questions or issues with any of the financial reports submitted, US Ecology and AE would try to respond in as precise a manner as possible or within the limits prescribed by SEC reporting requirements.

The LLRW Program identified the need for a statement whether US Ecology's parent company had ever sought bankruptcy. In response, US Ecology indicated that neither US Ecology nor AE had ever filed or been forced by creditors to file for bankruptcy.

The regulations establish the financial assurance requirements that must be met by US Ecology to cover costs during the operating life of the facility. The operational life of the facility to mean the period of time commencing when LLRW is initially received at the facility and ending when the facility permanently ceases to receive such waste for disposal. Under the *LLRW Disposal Act*, the LLRW facility will accept waste for a period not to exceed 30 years or until 5 million cubic feet of LLRW has been received, whichever occurs sooner.

The operating costs that must be covered by financial assurance include:

- construction costs;
- waste disposal costs (to include all operating costs); and
- costs of corrective action or cleanup on real or personal property on- and off-site if a release of radioactive material occurs.

Title 194, Chapter 6:001, and Title 180, Chapter 1:012.33, provide the LLRW Program with discretion to accept various types of financial assurance mechanisms to cover these costs. First, an applicant could show that it possesses the necessary funds to cover operating costs prior to receiving a license. An applicant could also demonstrate, instead of actual funds, that it possesses written assurance of obtaining the necessary funds. This written assurance may include certain specifically enumerated financial or surety arrangements or other form of

written assurance deemed acceptable by the NDEQ. The specifically identified financial or surety arrangements include the following:

- Surety bonds
- Cash deposits
- Certificates of deposit
- Deposits of government securities
- Escrow accounts
- Irrevocable letters or lines of credit
- Trust funds

If one of these mechanisms is relied on by an applicant, Title 194, Chapter 6:002.08, and Title 180, Chapter 1:012.33, require that the issuing institution must be an entity that has authority to issue letters of credit and whose letter of credit operations are examined or regulated by a federal or state agency. Additionally, Title 194, Chapter 6:002.08, and Title 180, Chapter 1:012.33, provide the LLRW Program with authority to approve other types of financial assurance mechanisms or written assurances to be used to cover closure/stabilization costs, with the exception of self-insurance.

US Ecology provided the following in SAR, Revision 8:

- Definition and description of US Ecology
- Financial and stock transactions
- Outstanding securities and liabilities as of March 31, 1994
- Legal actions related to US Ecology
- Outstanding corporate liabilities and surety arrangements
- US Ecology's financing plan
- Financing and assurances of site closure and stabilization
- Decontamination and demobilization, closure of cells, and monitoring information
- Organization and cost information
- Radiation site closure and reclamation fund information

- Remedial action assurances
- Financial assurances for institutional control
- Rates information
- Financial proformas

The proposed facility would be constructed in three phases. Phase I would include the development of the facility infrastructure, construction of four Class A cells and one Class B/C cell. Phase II, projected to begin about year 11 of operation, would consist of construction of four additional Class A cells. Phase III, projected to begin about year 21 of operation, would consist of construction of the final four Class A cells.

Cost estimates for the phases are as follows:

- Phase I: \$51,600,000
- Phase II: \$23,900,000
- Phase III: \$23,900,000

The cost estimates are based on 1994 dollars. US Ecology stated that the construction financing would be accomplished through construction loans with 10-year terms. This term essentially corresponds with the operating life of the cells that would be constructed.

The LLRW Program identified the need for information on financial sources on which US Ecology proposes to rely, showing the adequacy and availability of resources for financing the project. In response, US Ecology indicated that the 49-million-dollar, 10-year loan that US Ecology proposes to obtain is being structured as a normal project-financing loan and, as such, the only assets that they propose to use for securing the loan are those directly related to the project. It was indicated that the CIC/US Ecology contract, the projected waste volumes, and future revenue generated by the facility would serve as collateral for the loan. US Ecology indicated that no formal loan commitment would be provided until the project's license has been approved because the project itself is a part of the loan arrangement. In the event a license is issued, US Ecology shall be required to demonstrate that construction financing has been obtained.

US Ecology offered several methods of providing the assurance of obtaining the necessary funds. These included:

- A Performance Guarantee has been provided by American Ecology Corporation, the parent company of US Ecology, that guarantees the full

performance of all terms, agreements, and written conditions in the license application and related agreements.

- US Ecology has contacted financial institutions that may be interested in financing construction. One written expression of interest is provided as an *expression of interest* in SAR, Revision 8. The LLRW Program notes that the written expression of interest is not a firm financial commitment.
- US Ecology indicated that the contract between them and the CIC Commission also provides assurance of construction financing. This results from Article 3.04, Article 3.05, and Article 3.06. In essence, US Ecology may obtain the financing from outside sources, or the CIC Commission may provide the construction financing, either as a loan or as a contribution on behalf of the Commission.

Thus, to meet the requirements of Title 194, Chapter 6:001, and Title 180, Chapter 1:012.33, US Ecology must be able to finance \$51,600,000 at the start of construction. For purposes of the license application, they indicated that the construction financing would be obtained from a third-party financial institution.

US Ecology has proposed three plausible methods of providing the necessary assurance. The first one, a performance guarantee by the parent company, is difficult to evaluate in quantitative terms. However, the statement that they intend to use third-party financing essentially indicates that the performance guarantee would not be either necessary or utilized. Accordingly, it will not be evaluated further as a viable means of assurance.

The second method, third-party financing, is the selected method for purposes of the license application. This most closely resembles a typical construction project in the United States. In other words, if a license is received by US Ecology from the State of Nebraska, US Ecology expects financial institutions would be interested in providing the financing. It would be expected that the financing would come from an institution with authority to issue letters of credit or they would not be in the construction financing business. Thus, the requirements of Title 194, Chapter 6:002.08, and Title 180, Chapter 1:012.33, would be met. US Ecology is not proposing self-insurance or pledging the assets of the licensee or any corporate, legal, or financial affiliate of US Ecology.

The third method, financing through the resources of the CIC Commission, is also feasible. Because the financial resources of the Commission are generally derived from the major generators, it is reasonable to assume that any financing provided by the Commission would be on terms as favorable, or more favorable, than those available in the outside construction financing market. Thus, US Ecology, by choosing to use third-party financing for purposes of the license application, has selected the most stringent method of financing and demonstrated that the

necessary assurances required by Title 194, Chapter 6:001, and Title 180, Chapter 1:012.33, could be met.

Disposal costs would commence upon completion of construction and issuance of the authorization from the State of Nebraska to receive and dispose of LLRW. Self sufficiency for disposal costs results from the imposition of disposal rates at the facility in an amount necessary to cover all operational costs and from the captive supply of waste based on the CIC Agreements. The rates are subject to approvals by the State of Nebraska. This analysis is based on the assumption that satisfactory rate negotiations would be conducted among all affected parties.

US Ecology provided a list of key assumptions and factors upon which the operating costs are based. These include:

- recovery of all operational costs would be through the rate base;
- all accounting for the facility would be done separately from any other business activities of US Ecology; and
- disposal fees would be based on unit costs - dollars per cubic foot.

For purposes of the disposal period, US Ecology has combined two years of start-up and 30 years of operation into a single analysis. Major operational costs accounted for include the following:

- Salaries and benefits
- Office costs for Butte and Lincoln offices
- Insurance costs
- Other direct costs
- Community Improvement Funds
- Local Monitoring Committee costs
- State of Nebraska LLRW Program fees
- Subcontracts
- US Ecology overhead and fee

The total cost during the start-up and operational period, in 1994 dollars, is \$201,923,388. The single largest component of the cost is the Community Improvement Fund of \$60,000,000. The second largest component is for salaries

and benefits at \$56,223,750. Other significant cost elements are for US Ecology overhead and fee, Butte facility costs, and radiological laboratory costs.

Thus, to meet the regulatory requirements, US Ecology must be able to generate funds from operations to cover the costs of start-up and operations in the amount of \$201,923,388. For purposes of the license application, US Ecology indicated that the operational financing would be obtained from the rate base.

A detailed revenue calculation is provided in SAR, Revision 8, for the first 3 years of operation. The calculations provided by US Ecology indicate that the disposal fee for the first 3 years of operation would range from approximately \$465 per cubic foot to \$901 per cubic foot. This is based on receipt of 55,000 cubic feet of waste per year. Because some of the costs in the revenue calculation are essentially fixed, it is reasonable to assume that if the volume is greater than 55,000 cubic feet per year, the disposal cost per cubic foot would decrease. Similarly, it is also reasonable to assume that if the volume is less than 55,000 cubic feet per year, the disposal cost per cubic foot would increase.

The following table presents an analysis of volume versus disposal fee for various projected volume levels:

Table 10-2. Waste Volume Versus Disposal Fee

Volume (Cubic Feet)	Disposal Fee ⁽¹⁾⁽²⁾ (Dollars per Cubic Foot)		
10,000	\$2,555	to	\$2,702
20,000	\$1,277	to	\$1,351
30,000	\$852	to	\$901
40,000	\$639	to	\$676
50,000	\$511	to	\$540
55,000	\$465	to	\$491
60,000	\$426	to	\$450
70,000	\$365	to	\$386
80,000	\$319	to	\$338
90,000	\$284	to	\$300
100,000	\$255	to	\$270

(1) 1994 dollars.

(2) LLRW Program analysis based on US Ecology data in SAR, Revision 8.

The revenue per cubic foot calculation is allocated into the various components such as contributions to the various regulatory funds, operating expenses, community and local monitoring funds, State of Nebraska fees, depreciation and amortization, and interest expense.

Also provided is a project income statement for the construction period and the first 3 years of operation. The project income statement demonstrates that the revenue exceeds the operating expense resulting in positive operating income. After provision for overhead, interest, and taxes, a positive net income results. Thus, US Ecology has demonstrated that the project is self-supporting based on revenue from the rate base. The income statement does not include provision for property taxes because the requirement (via LB 1201) was not effective until 1996, approximately one year after submittal of Revision 8 of the SAR. Accordingly, it should be noted that provision for property taxes would impact the project income statement.

The LLRW Program requested an updated listing of activities that contribute to gross revenues, including the percentage of gross revenues derived from each activity. In response, US Ecology indicated that they had two principal business activities (services) that are integrated with the ultimate disposal of material. US Ecology also indicated that they do not list revenues independent of total disposal revenues and that division of financial percentages of gross revenues beyond two principal business activities would be considered proprietary and public release of such information would place the company at a serious competitive disadvantage in the industry.

US Ecology has examined realistic accident scenarios during operation. During operation, the *dropped container* scenario is the bounding case accident for releases during operation. In this scenario, a Class B/C waste container filled with ion-exchange resin is dropped, and the container loses its contents. According to the information provided, this release would not exceed regulatory limits or necessitate any off-site remediation.

For cleanup on-site, US Ecology has provided a detailed cost estimate for cleanup of a dropped container as previously described. The cost estimate is reasonable as presented with a total estimated cost of \$32,420. US Ecology indicated that this magnitude of cleanup is within the on-site capability and scope of normal operational activity. This is reasonable as presented. The cleanup of an accident with a cost of less than \$33,000 should be well within the day-to-day capability of an operating facility and, thus, would not require any additional assurance to meet the regulatory requirements.

US Ecology stated that no off-site release would occur. However, SAR, Section 8.4, indicates the possibility of a truck fire with off-site consequences. For cleanup off-site, US Ecology would seek maximum coverage allowable through American Nuclear Insurance Company. According to SAR, Revision 8, the American Nuclear Insurance Company coverage would include any remedial cleanup costs for on-site as well as off-site contamination.

SAR, Revision 8, relates that the funds required to construct, operate, and close the facility are project-specific and, as a result, the Nebraska project would not bear any costs that might be incurred by US Ecology in other non-Nebraska projects.

The LLRW Program requested copies of the 10-Q form for the quarters ending June 30, 1991; September 30, 1991; and December 31, 1991, and requested to be included on future mailing lists for 10-Qs, 10-Ks, annual audit reports, and notices of shareholders meetings. In response, US Ecology provided the requested 10-Q statements and placed the LLRW Program on the mailing lists for all future 10-Qs, 10-Ks, annual audit reports, and notices to shareholders. In the event a license is issued, US Ecology shall submit these reports on an annual basis.

In summary, US Ecology has provided documentation that reasonably demonstrates that they can obtain the necessary funds to cover the estimated cost of conducting licensed activities over the planned operating life of the facility, including the cost of construction and disposal. Proformas contained in SAR, Revision 8, are on a project level and demonstrate that the repayment of the project construction loans and annual operating costs would be met through the projected fees to be collected. US Ecology related that its financing plan and proposed financial assurances would help to insulate the project from any nonproject-related actions. US Ecology stated that the project is designed to be self-sufficient. The project is an exclusive franchise granted to US Ecology by the CIC, and the contract between US Ecology and the CIC provides the basis for the franchise and segregates the Nebraska project from other aspects of US Ecology's or their parent company's business.

State of Nebraska
Low Level Radioactive Waste Program
DRAFT SAFETY EVALUATION REPORT
October 1997

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Final Report
December 8, 1997

EXECUTIVE SUMMARY

The State of Nebraska's Low Level Radioactive Waste (LLRW) Program has conducted a technical review of a license application by US Ecology to site construct, operate, and ultimately close a LLRW facility in Boyd County, Nebraska. The LLRW Program has developed, and released for public comment, draft versions of two technical analysis documents: i) a **Draft Environmental Impact Analysis (DEIA)** describing the proposed facility, the potential environmental impact of the facility, and alternatives to the proposed facility (including alternative waste management strategies), and ii) a **Draft Safety Evaluation Report (DSER)** presenting the results of the Nebraska LLRW Program's technical review of the acceptability of the US Ecology license application, including determination of whether the facility meets state laws and regulations.

Duke Engineering & Services was tasked by the Nebraska Public Power District to review the DEIA and DSER, to evaluate the DSER unacceptable findings and to propose resolutions or approaches to resolutions of the unacceptable findings in the DSER. A summary of the unacceptable findings, proposed resolutions and cost estimates for resolution is provided in Table 1. Most of the unacceptable findings are classified as minor to intermediate severity, with only one major issue involving US Ecology's evaluation of radionuclide release under normal conditions (Section 6.0). All of the issues are resolvable, providing opportunities exist for the parties to discuss and mediate the resolutions, and assuming revisions and resubmission of parts of the Safety Analysis Report.

The DSER is organized into eleven sections which reflect the topics addressed in US Ecology's Safety Analysis Report (SAR) and the standard review plans contained in NUREG-1200.

Section 1.0, General Information, addresses US Ecology's organizational structure, technical and personnel qualifications. The LLRW Program found this part of the license application is acceptable.

Section 2.0, Site Characteristics, addresses US Ecology's description of the site location, natural and demographic features, geology, surface water, ground water and pre-operational monitoring. The LLRW Program issued 22 findings that determined this part of the license application is acceptable.

Section 3.0, Design and Construction, addresses the facility's design, design consideration for normal and accident conditions, construction methods and equipment, and auxiliary systems and facilities. The LLRW Program review issued 42 findings that all find this part of the license application acceptable.

Section 4.0, Facility Operations, addresses receipt, inspection, and disposal of LLRW. There are sixteen separate findings in Section 4.0. Eight of the 16 findings are unacceptable. The LLRW Program found deficiencies in the US Ecology program for waste classification and verification of contents and radiation levels of manifested waste packages. Resolution can be achieved on these issues by US Ecology providing additional information on the details of the waste classification and manifesting programs, including a program for identification and disposition of unacceptable packages, enhancements to the Class B/C and HIC verification programs, and additional information on the computer code (HR-Stat) used to quantify the I-131 and Tc-99 inventory. The LLRW Program also determined that the US Ecology program for minimizing and filling void space in the B/C cells is unacceptable. It is possible that this issue is simply a miscommunication, since the DEIA indicates that the SAR does call for the filling of void spaces. US Ecology will also need to develop a crack inspection program for the final cover as well as an exposure analysis related to crack inspections.

The proposed buffer zone around the facility is appropriately sized; however, the number and location of monitor wells is considered unacceptable due to uncertainties in the direction of groundwater flow. The license application also lacks specificity on the investigation and reporting levels, as well as action levels. These issues are resolvable by providing for additional monitor wells based on groundwater flow and particle tracking analyses, and identifying appropriate reporting and action levels and the methodology used to determine action levels.

The estimated cost to resolve issues in Section 4.0, Facility Operations, is \$148,000. Of these costs, \$55,000 is associated with the installation (at the time of construction) of 11 additional wells, and \$93,000 is related to additional analyses, evaluations, program revisions, and reporting.

Section 5.0, Site Closure Plan and Institutional Controls, address US Ecology's proposed plans for erosion protection, structural performance monitoring, final covers over the disposal units, demobilization and decontamination, and post-operational monitoring. The LLRW Program finds that the plans for erosion protection, structural performance monitoring, and final covers are acceptable. The program for demobilization and decontamination is acceptable for the most part. However, the program described for maintaining exposures ALARA during demobilization and closure is unacceptable. The program lacks action levels and exposure analyses for some closure and post-operational activities, and lacks a commitment to inspect and repair cracks in the covers. The post-operational monitoring program lacks air monitoring and TLD monitoring, a comprehensive analysis of the dose resulting from the groundwater pathway, and lacks post-operational reporting levels and action levels. The resolution of issues in Section 5.0, Site Closure Plan and Institutional Controls, can be accomplished with minimal effort of about \$12,000 in labor. The costs associated with resolving the post-operational monitoring issues related to groundwater monitoring are included in the cost estimates for resolving Section 4.0.

Section 6.0, Safety Assessment, addresses US Ecology's safety assessment of the release of radioactivity, intruder protection, and long-term stability of the site. Most of the Safety Assessment findings were acceptable, including those related to LLRW generated during facility closure, infiltration through the engineered cover, the surface water radionuclide transfer mechanisms, waste segregation, intruder protection, flooding potential, erosion protection, subsidence, accidents, and release scenarios through the groundwater, air, surface water, and biotic pathways.

Although the description of the groundwater, air, surface water, and biotic pathway release scenarios under normal operating conditions was acceptable, the evaluation of the scenarios was unacceptable for several reasons. The radionuclide inventory, and therefore the source term, is incomplete; daughter products (chain decay) were not considered in the groundwater transport analyses; the air pathway release scenario is analyzed using parameters that the LLRW Program considers questionable; the credible scenarios for gamma emanation did not include all credible HIC scenarios; and insufficient details were provided for the skyshine analyses. In general, there appears to be a significant difference between the level of detail at which US Ecology conducted the release analyses and the level of detail expected by the LLRW program. Considerable discussions and iterations may be required to resolve the differences, and there is the potential that the resolution may result in relatively major facility design modifications. The impact of the facility modifications on the remainder of the license application would then need to be assessed. The LLRW Program considered the evaluation of accidents or unusual operating scenarios was unacceptable because the source term for a broken HIC had not been explicitly defined, and explanation of how the HIC was broken was considered inadequate.

The truck fire scenario was not considered conservative, and the crushed-by-a-tornado HIC scenario may not be conservative. The issues related to evaluation of accidents or unusual operating scenarios are all classified as minor to intermediate severity. Resolutions can be achieved

with license application revision, revised dose calculation methodology, and explanations or details provided as needed.

US Ecology's evaluation of the ground water transfer mechanism was considered unacceptable. The program can be improved by having more conservative distribution coefficients used in the model for the redox-sensitive modeling; also by carrying the ground water model out farther than 10,000 years to compensate for the relatively large distribution coefficient, and by using a more conservative approach for both Carbon-14 and technetium-99 for the redox arguments. Constructing geochemical arguments and using geochemical engineering designs as well as revising the ground water transport analyses should produce an acceptable evaluation of the ground water transfer mechanism at an estimated cost of \$119,000.

The input parameters for the ground water transfer mechanism were found by the LLRW Program to be unacceptable. This deficiency can be resolved by using a more complete inventory as the source term and remodeling the ground water pathway. If it cannot be shown that the longer-lived isotopes are immobilized at the source, then modeling and predicting doses out to time periods longer than 10,000 years will be necessary. The revisions to the ground water transfer mechanism will cost an estimated \$20,000.

The parameters in the atmospheric transport and diffusion models were found to unacceptable. The parameters in the models can be improved through the following ways: a revised document should be submitted with modifications made to the source terms included, a thorough review of the air dispersion calculations and equations in order to determine the need to switch to a puff dispersion model, a review of the correctness of the puff dispersion model used, and if additional considerations are brought into the air dispersion model, such as downwash, then additional computer and human resources will be necessary to revise calculations. The estimated cost to revise the parameters is \$29,000.

The calculations of radiological impacts on individuals and compliance with the regulatory criteria in the SAR was considered unacceptable by the LLRW Program. The deficiencies in the SAR can be resolved by incorporating the following issues: puff dispersion and wind direction limits for the atmospheric transport and diffusion model revised for accident conditions, dose assessment inputs, methods to control releases ALARA, revisions to the FSM to include performance objectives and radiation protection standards, revisions to the analysis that yielded the projected doses, and verification documentation for software codes. Revising the SAR to implement responses to the findings will cost an estimated \$6,000. The total cost to resolve issues in Section 6.0, Safety Assessment, is estimated at \$329,000.

Section 7.0, Occupational Radiation Protection, addresses occupational radiation exposures, radionuclide inventories, radiation protection design features, and the facility's radiation protection program. Of the fourteen findings in Section 7.0, six were determined by the LLRW Program to be unacceptable. The acceptable findings include the description of radiation sources, the radiation protection design, the methods of surveying for radioactivity, the use of portable and fixed instrumentation, and the proposed radiation protection program for the facility.

However, the LLRW Program determined that US Ecology did not demonstrate ALARA planning to minimize exposure to workers in their proposed method of operation. An ALARA evaluation of the two proposed methods of disposal of Class A waste needs to be performed, and US Ecology should demonstrate that remote handling of wastes greater than 1 rem/hr in a separable cell bay is ALARA and results in less exposure than mixing with lower dose rate packages. US Ecology also needs to provide a basis for their assumed 1 mrem/hr dose rate and also provide a basis for neglecting airborne exposures. Some of the facility's design features, such as permanent shielding at HVAC penetrations and temporary shielding, also need ALARA demonstrations.

The LLRW Program determined that US Ecology's ventilation systems, airborne radiation monitoring, and area radiation monitoring are unacceptable. Required revisions include continuous air monitoring in the work areas (although there appears to be some confusion as to whether breathing zone continuous air monitoring has been recognized by the LLRW Program as part of the proposed program). Key elements of the ventilation system monitoring program, specifically charcoal filter efficiency testing, pressure drop monitoring, and routine surveillance also need to be addressed.

US Ecology's personnel dosimetry program is unacceptable to the LLRW Program. It should include a program for the summation of external and internal dose (or a program to determine if summation of doses is necessary), and a plan for a Declared pregnant worker program. US Ecology has proposed to essentially "overpost" restricted areas as radiation areas, thus allowing a much larger radiation area than deemed appropriate by the LLRW Program. US Ecology should also demonstrate a more complete understanding of the rationale for posting and access control. For instance, during periods in which disposal operations are not occurring, access control and posting should be limited to the actual High Radiation Area (or Very High Radiation Area).

US Ecology's proposed organization is not acceptable in that the Facility Radiological Control and Safety Officer would assume facility management responsibility in the absence of both the Facility Manager and Facility Assistant Manager. This can be simply resolved by revising the description of duties and responsibilities to ensure the Radiological Safety Officer is not in line management.

The total cost to resolve issues in Section 7.0, Occupational Radiation Protection, is estimated at \$30,000.

Section 8.0, Conduct of Operations, addresses the organizational structure, the qualifications of US Ecology, training, emergency planning, review and auditing, administrative and operating procedures, and security. The organizational structure was acceptable; however, the LLRW Program reserved final evaluation on US Ecology qualifications until the final Safety Evaluation Report and license decisions are made, citing the dynamic nature of commercial low level radioactive disposal and the relatively weak financial condition of both US Ecology and the parent firm, American Ecology.

Because the LLRW Program determined in Section 6.0 that the source term is inadequately defined, the description of credible accidents and emergencies in Section 8.0 is considered unacceptable. Most of the issues related to credible accidents and emergencies would be addressed by resolution of the source term issues in Section 6.0. From the resolutions will likely come the need for an off-site emergency response plan, which is required if the most severe credible on-site accident will yield an off-site dose equivalent of greater than 0.01 rem to the whole body or 0.05 rem to the lungs. The development of an acceptable off-site emergency response plan could be a significant challenge for US Ecology, considering the nature of the task (which must include cooperation of local authorities and affected populations) and the apparent tensions in the Boyd area. US Ecology will also need to have current letters of agreement with off-site agencies assuring off-site assistance during an emergency. Some of the existing letters of agreement date to 1991. US Ecology's review and audit programs will need to be revised to show independence of internal audits and reviews, and a more descriptive definition for "minor change," which does not require prior notification and approval or auditing. The distinction between "administrative" and "operating" (or implementing) procedures must be made clear and consistent with NUREG guidance.

The unacceptable issues identified in Section 8.0, Conduct of Operations, can be resolved by revising sections of the SAR license application. Significantly, US Ecology will also likely need to develop an off-site emergency response plan, which will require the participation and cooperation of local authorities and affected populations. The task could be relatively time consuming, and the

community involvement itself estimated at a cost of \$100,000. The remainder of the issues in Section 8.0 can be resolved at an approximate cost of \$49,000, for a total of \$149,000.

Section 9.0, Quality Assurance, was found acceptable by the LLRW Program. US Ecology has demonstrated, through LLRW Program audits and surveillances, that their project and corporate QA programs are appropriately and adequately implemented. US Ecology has demonstrated that they would retain QA responsibility for all phases of the proposed facility, including QA responsibility for subcontractors, consultants, and suppliers.

Section 10.0, Financial Assurance, addresses financial assurances for all phases of the facility, from the operational phase to the institutional control period, as well as insurance requirements. US Ecology demonstrated, through proforma calculations, that they can obtain the necessary funding, that the facility is self-financing, and that their proposed financial assurances would help insulate the project from any nonproject-related actions. US Ecology also provided documentation demonstrating that they could obtain the necessary funds to cover the estimated cost of site closure and stabilization. US Ecology estimated a closure and reclamation fund accumulation of \$205.6 million (from surcharges in the user fees) from an initial \$23 million on construction. US Ecology also demonstrated that it would provide for property and third party liability insurance, included in a nuclear energy liability insurance policy, acceptable to the Nebraska Environmental Quality Council.

Section 11.0, License Conditions, identifies that the LLRW Program has specified proposed license conditions (where appropriate) in the previous 10 sections.

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TABLE 1. DSER UNACCEPTABLE FINDINGS

SECTION	FINDING	DESCRIPTION	SEVERITY	COST
4.0 Facility Operations	4.1-1	Waste Classification	Minor	12K
	4.1-2	Radioactive Waste Characteristics	Minor	12K
	4.1-4	Manifest	Minor	6K
	4.1-5	Verification	Minor	6K
	4.1-6	Inspection of LLRW on Arrival	Minor	6K
	4.3-2	Filling of Void Space	Intermediate	15K
	4.3-3	Buffer Zone	Intermediate	70K
	4.4-1	Operational Environmental Monitoring and Surveillance	Intermediate	21K
Subtotal				\$148 K
5.0 Site Closure Plan and Institutional Controls	5.2-3	Exposures during Demobilization and Closure	Minor	3K
	5.3-1	Description of Post Operational Environmental Monitoring & Surveillance	Minor	9K
	5.3-3	Data Recording and Statistical Analysis	Minor	--
Subtotal				\$ 12 K
6.0 Safety Assessment	6.1.3-1	Radionuclide Release Under Normal Conditions	Major	82K
	6.1.4-1	Identification of Accidents or Unusual Operating Scenarios	Minor	6K
	6.1.4-2	Evaluation of Release	Intermediate	67K
	6.1.5.1-1	Conceptual Model	Intermediate	119K
	6.1.5.1-2	Input Parameters	Intermediate	20K
	6.1.5.2-1	Atmosphere Transport and Diffusion Models	Intermediate	29K
	6.1.6-1	Assessment of Impacts and Regulatory Compliance	Minor	6K
Subtotal				\$329 K
7.0 Occupational Radiation Protection	7.1-2	Occupational Exposure Estimates	Minor	6K
	7.3-1	Facility Design Features and Shielding	Minor	3K
	7.3-2	Ventilation Systems, Airborne, and Area Radiation Monitoring	Intermediate	9K
	7.4-2	Occupational Dose Limits and Dosimetry - Adults	Minor	6K
	7.4-3	Posting and Control of Exposure from External Sources	Minor	6K
	7.4-8	Organization-Qualifications, Responsibility, and Authority	Minor	--
Subtotal				\$ 30 K
8.0 Conduct of Operations	8.4-1	Credible Accidents and Emergencies	Intermediate	115K
	8.4-2	Emergency Response Program	Minor	6K
	8.4-3	Off-Site Support	Minor	10K
	8.5-1	Review and Audit	Minor	6K
	8.6-1	Administrative and Operating Procedures	Minor	12K
Subtotal				\$149 K
TOTAL				\$668 K



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DEIA

DRAFT ENVIRONMENTAL IMPACT ANALYSIS

Executive Summary

OCTOBER 1997

DEIA

DRAFT ENVIRONMENTAL IMPACT ANALYSIS

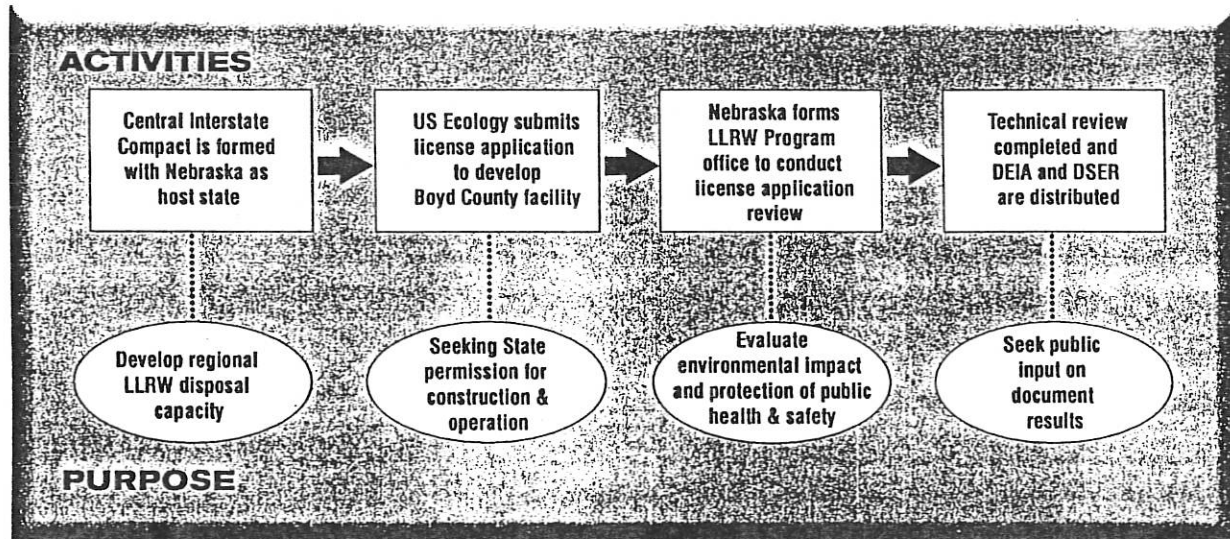
Executive Summary

INTRODUCTION

Activities Leading up to This Document

A private company, US Ecology, has proposed to construct, operate, and ultimately close a Low-Level Radioactive Waste (LLRW) disposal facility in Boyd County, Nebraska and has submitted a license application for this action. The State of Nebraska must evaluate the application and if acceptable issue a license before any construction or operations may begin. The State has enacted specific laws and regulations to govern any such facility and has created a dedicated organization, the Nebraska LLRW Program, to conduct activities that would ensure these laws are met.

LLRW ACTIVITY SUMMARY



With the release of the Draft Environmental Impact Analysis (DEIA), and the companion Draft Safety Evaluation Report (DSER), Nebraska is beginning the decision making process for the LLRW disposal facility proposed by US Ecology. Activities by federal lawmakers, the state of Nebraska, and other organizations have preceded this decision point, and have resulted in the creation of this document. The Program's distribution of the DEIA and DSER documents allows the public to review and comment on: 1) the impact to the environment, and the relative impacts of the Boyd County facility compared to the other alternatives, and 2) the findings of the technical review with regard to protection of human health and safety.

ENVIRONMENTAL IMPACT ANALYSIS

A Process for Evaluation and Public Disclosure

The environmental impact analysis process has been implemented to meet the statutory obligations of Nebraska law. This DEIA contains an explanation of why there is a need for the facility, and a description of the facility itself. It describes in detail what the environment is like today and explores how that environment may change if the facility is built. For comparison purposes, the DEIA also identifies and evaluates alternatives to the proposed Boyd County facility. Among the alternatives considered are different site locations for a disposal facility, different engineering technologies for the disposal facility design, and alternative waste management strategies. The DEIA paints a picture of how Nebraskans may be affected if the facility is developed. The environmental impact analysis process, and this DEIA, have a very specific purpose: to compare and inform the public and decision-makers of the environmental consequences of the proposed Boyd County facility to other reasonable alternatives. The environmental consequences include changes that could occur to Nebraska's air, water, land, and people. Decision makers use the results of the technical review, the DEIA information, and input from the public to make a decision regarding the license application.

The Nebraska LLRW Program has been responsible for the technical review of the license application. The "LLRW Program" is a term used to describe the State's regulatory partnership between the Nebraska Department of Environmental Quality (NDEQ) and the Nebraska Department of Human Health Services Regulation and Licensure (HHS R&L). The LLRW Program organized a team of technical professionals from government, universities, and private organizations to assist in review of the application. The resulting review team consists of more than 100 scientists, engineers, accountants, and legal professionals. The disciplines and areas of expertise within the review team are as follows:

Biology	Sociology
Climatology and Meteorology	Structural Engineering
Electrical Engineering	Civil Engineering
Financial Assurance	Economics
Geology	Environmental Engineering
Hydrogeology	Geochemistry
Mechanical Engineering	Health Physics
Operational/Construction	Materials Engineering
Project Management	Nuclear Engineering
Regulatory Analysis	Performance Assessment

The LLRW Program's technical review activities must satisfy statutory obligations created by a body-of-law under two state statutes—the Nebraska Low-Level Radioactive Waste Disposal Act and the Nebraska Radiation Control Act. Those statutes and supporting regulations require that the LLRW Program produce a written analysis of environmental impacts including:

- An assessment of the radiological and nonradiological impacts to the public health
- An assessment of any impact on any waterway and ground water
- Consideration of alternatives to the activities to be conducted, including alternative sites and engineering methods
- Consideration of long-term impacts including closure, decommissioning, decontamination, and reclamation of facilities and sites associated with the licensed activities and management of any radioactive materials which will remain on the site after such closure, decommissioning, and reclamation

The LLRW Program is the state organization responsible to the public for implementing the environmental impact analysis. In addition to accomplishing the requirements of state law, the LLRW Program included an analysis of selected information identified in the National Environmental Policy Act (NEPA).

SUMMARY OF DEIA CONTENTS

Key Findings and Conclusions

Purpose of and Need for Proposed Action

The proposed action is for US Ecology to site, design, construct, operate, and close an LLRW disposal facility in Boyd County, Nebraska. The purpose of the proposed action is to provide safe, permanent disposal of LLRW generated within the Central Interstate Compact (CIC) states. The need for this action is based on the legal and practical prohibitions against continued disposal at sites outside the CIC region. This stems from legislation passed by the US Congress in 1980 and amended in 1985 which makes each state responsible for disposal of the LLRW generated within its borders. This legislation encourages states to meet their disposal needs, and minimize the number of new disposal sites, by forming regional compacts.

In response to the Federal legislation, Nebraska joined with Kansas, Oklahoma, Louisiana, and Arkansas to create the CIC which was ratified by Congress in 1985. Studies were made of the five states in the CIC to determine a host state for an LLRW facility. Selection criteria included:

- Geologic suitability of the state for waste disposal
- Volume and waste characteristics of LLRW produced in each state

- Transportation distances from major centers of waste generation in the CIC

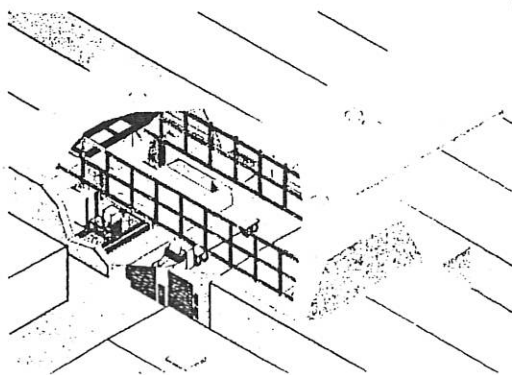
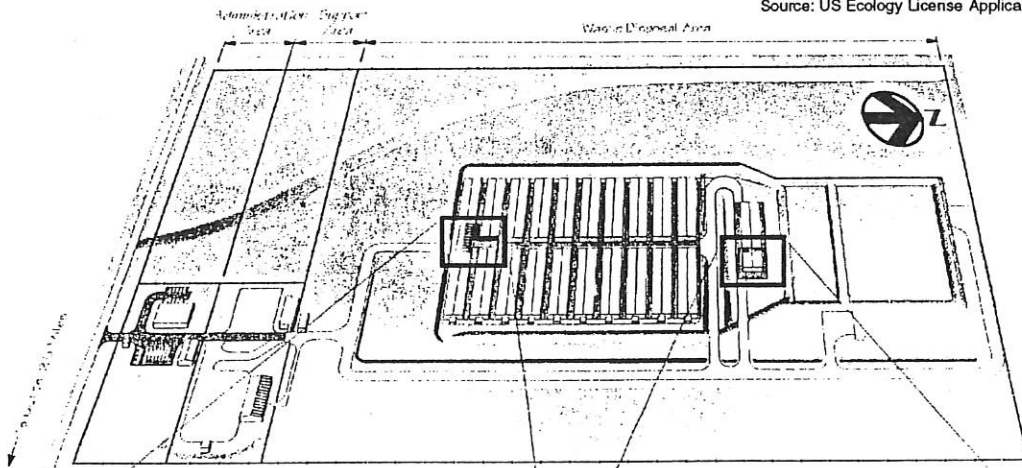
Nebraska was chosen by the CIC as the first host state on December 15, 1987. The CIC also selected US Ecology to develop and operate an LLRW disposal facility. US Ecology then studied numerous sites in Nebraska, selected three for in-depth evaluations, and finalized the process by selecting the Boyd County site as its preferred location. The proposed action to construct and operate an LLRW disposal facility in Boyd County, Nebraska would fulfill Nebraska's obligation as host state, and the CIC's obligation under the federal legislation to establish a mechanism to handle and dispose of LLRW regionally.

The Proposed Action

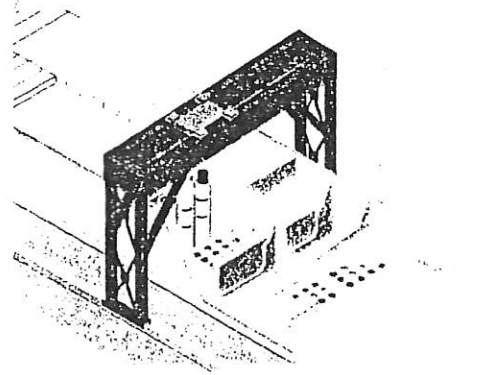
The proposed action is the development of an LLRW facility on 110 acres of land about 2.5 miles west of Butte, Nebraska. The facility would consist of waste disposal units, administration and support buildings, and utility and drainage systems to support disposal operations. The project is designed to operate for thirty years or until five million

Overall Site Arrangement

Source: US Ecology License Application



Class A Waste Handling and Disposal Unit



Class B/C Waste Handling and Disposal Unit

cubic feet of LLRW is received, whichever comes first. The current waste generation rate in the CIC region is approximately 50,000 to 75,000 cu ft/year of Class A, Class B, and Class C wastes. Assuming this rate continues for the thirty year operational life of the facility, the facility could receive approximately 1.5 to 2.25 million cu ft of LLRW.

The disposal structures would be above-grade reinforced-concrete units. The Class A unit would consist of twenty separate concrete disposal cells. A movable corridor building would be located between the cells. The Class B/C unit would be a single structure with removable roof panels and an overhead straddle crane for placement of the waste. Both the Class A and Class B/C units would be supplied with power, drainage, fire protection, security, communications, and monitoring. The Class A unit and corridor building would be supplied with ventilation. The entire disposal area would be fenced to control site access. Administrative and support facilities would be located outside the restricted waste disposal area but within the site perimeter fence.

After operations, the facility would be closed. Closure activities would include decontamination and decommissioning of the ventilation systems, retention pond, and various other structures. A single, multi-layered closure cap would be constructed over both disposal units. The closure cap, designed to minimize infiltration, would consist of layers of sand, soil, concrete, and clay. The ground water collection systems would be extended to the edge of the closure cap and remain functional to provide cell monitoring capabilities for a minimum of 100 years.

US Ecology would conduct environmental monitoring during the operational life of the project and would continue monitoring for at least five years after completion of the closure cap. At the end of this period, ownership of the facility would be transferred from US Ecology to the state. An institutional control agency designated by the state would continue monitoring and would restrict site access for a minimum of 100 years following transfer of ownership.

Alternatives to the Proposed Action

One activity in the DEIA process is to explore alternatives to the proposed action. As required by State law, the LLRW Program considered a broad range of alternatives to US Ecology's proposal. Those considered include alternative sites, engineering methods, and waste management strategies. Over thirty potential alternatives were evaluated. The potential alternatives were identified by the Nebraska LLRW Program, by US Ecology, and by the general public. These alterna-

tives were placed into one of four categories:

1. **Alternative Sites** - different locations for a disposal site; both existing and new, were identified. These would allow a LLRW disposal facility in a location other than Boyd County
2. **Alternative Engineering Methods** - different technologies for designing, constructing, and operating a disposal facility
3. **Alternative Waste Management Strategies** - different methods of handling waste and a change in the operations (such as power generation or nuclear medicine) that produce the waste
4. **No action** - an alternative that continued current practices without implementing the proposed action

Examples of the criteria used to evaluate the alternatives include compliance with the law, and ability to fulfill the stated need regarding LLRW. The diagram on the following page lists all of the potential alternatives. The evaluation criteria were used as a screening mechanism to identify "reasonable alternatives." Five reasonable alternatives were identified and are summarized below.

Proposed Action. The proposed action is to design, construct, operate, and close an LLRW disposal facility in Boyd County, Nebraska.

Nemaha County. The Nemaha County alternative involves construction of the proposed LLRW facility at the former candidate site identified in this county by US Ecology. The assumption used in evaluating this alternative is that the facility uses the same design as the proposed action. The major difference between this alternative and the proposed action, other than the location of the site, is that instead of using a 110-acre site for disposal, this alternative would use a 320-acre site. Consideration of this site is not intended to imply that a facility would be developed at this location. The reason for considering this alternative is to meet the requirements of the Nebraska statute and to provide the decision makers with a comparative basis to evaluate advantages and disadvantages associated with the proposed site.

Nuckolls County. The Nuckolls County alternative involves construction of the proposed LLRW facility at the former candidate site identified in this county by US Ecology. The assumption used in evaluating this alternative is that the facility uses the same design as the proposed action. The major difference between this alternative and the proposed action, other than the location of the site, is that instead of using a 110-acre site for disposal, this alternative would use a 320-acre site. Consideration of this site is not intended to imply that a facility would be developed at this location. The reason for considering this alternative is to meet the requirements of the Nebraska statute and to provide the decision makers with a comparative basis to evaluate advantages and disadvantages associated with the proposed site.

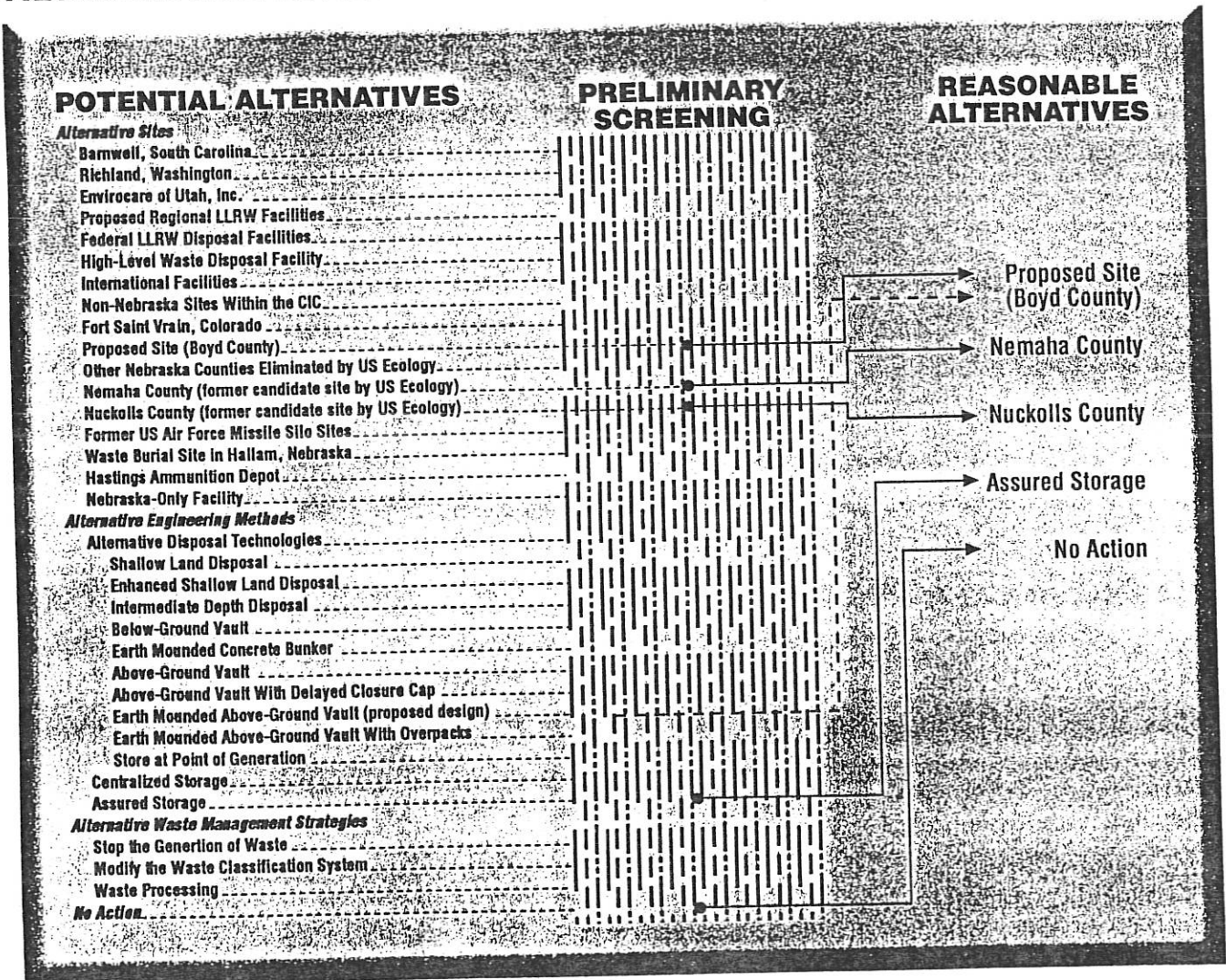
Assured Storage. Assured storage is evaluated as a reasonable alternative to the proposed action. This alternative

differs from the traditional disposal concepts in that assured storage is not necessarily permanent. If the facility performs well, it may become a permanent disposal site. If the facility does not perform well, modifications would be required or the waste would have to be moved to another storage or disposal facility. In addition, the assured storage concept relies primarily on institutional controls to isolate the waste whereas disposal facility concepts rely on the natural characteristics of the site to isolate the waste.

No Action. Under the no action alternative, the management of LLRW would continue as in the past few years. The assumption used in evaluating this alternative is that the proposed facility would not be built in Boyd County.

Description of Affected Environment

ALTERNATIVES EVALUATION DIAGRAM



In order to determine any environmental impact, it is first necessary to evaluate and describe the existing, or affected, environment. The Boyd County site and former candidate sites in Nemaha and Nuckolls counties have been used to describe the environments for all the reasonable alternatives. The environmental resources that could experience impacts have been examined one by one. Conditions, or situations, are depicted as they now exist, before the LLRW facility or any alternative is implemented. The environmental resources examined include the following categories:

- Land
- Meteorology and air quality
- Background radiation levels
- Hydrology, including surface water and ground water
- Geology
- Ecology
- Socioeconomic
- Cultural

The environmen-

tal resources found at these sites are typical of those found across the state of Nebraska. The land is now used for agriculture purposes, the quality of the air meets regulatory standards, and background radiation is present from natural and man-made sources. Each of the alternative sites are in the upper portion of their respective drainages, so very limited quantities of surface water are present on the sites. Ground water is present, but also limited in quantity. The ecosystems of these areas are also typical of Nebraska—a wide variety of common birds, mammals, and vegetation. There are no threatened or endangered species at the sites. Socioeconomic conditions are common for rural areas. Sociocultural conditions are also generally common for rural areas except for Boyd County, where community cohesion is less apparent. Significant cultural resources were found only at the Nemaha site. The existing environmental conditions form the basis for evaluating the environmental impacts of the proposed action and other reasonable alternatives.

Environmental Consequences

An environmental consequence is a change that can occur to the environment when a specific action takes place. Another word for “consequence” is “impact.” This section identifies and compares the impacts, both beneficial and adverse, on specific environmental resources that would be likely from the proposed action (Boyd County LLRW facility) and its reasonable alternatives.

The relative environmental consequences of five reasonable alternatives are documented in this DEIA. The Environmental Impact Summary chart on the following page tabulates the effects that each of the five reasonable alternatives could have on specific environmental resources. Alternatives are fully considered so that the relative environmental, safety, and health impacts of the proposed action can be better understood. This provides a comparative basis for evaluating them.

ENVIRONMENTAL IMPACT SUMMARY

Environmental Resources	Alternatives..... Proposed Action (Boyd County Site)
<i>Land</i>	Remove 110 acres from agricultural use
Meteorology	
Climate	None
Air Quality	Vehicle emissions during construction increases background level of some priority pollutants; Dust levels would increase
<i>Background Radiation Levels</i>	A small increase to background radiation levels could occur following closure. No adverse impact or regulatory excursion is expected.
<i>Hydrology</i>	
Surface Water	Modified on-site drainage patterns: potential sediment loading in stormwater runoff during construction. Potential radiological contamination of surface water during operations.
Ground Water	Potential increase of radiological constituents in groundwater
<i>Geology</i>	During construction, increased potential for soil erosion
<i>Ecology</i>	
Vegetation	Disturbed vegetation. Loss of on-site wetland. Potential sediment loading to off-site wetlands
Wildlife	Common species may be displaced off-site. Potential for increased road kills and illegal hunting
Aquatic	None
Threatened and Endangered Species	None
<i>Socioeconomics</i>	
Population	Construction workers from outside the immediate area would be temporary residents. Small permanent increase in local and regional population.
Regional Economy	Expenditures would stimulate local and regional economics.
Land Values	Potential increase in land values due to population influx. Potential initial negative effects on property values.
Housing	Increase Demand for temporary housing and permanent housing
Public Utilities	Sewer and water supply may not be adequate
Law Enforcement	Law enforcement may not be adequate
Fire Protection	Fire protection may not be adequate
Health Care	Commitment from Village of Butte to fund a county-wide health plan.
Public Education	Slight increase in school enrollment and costs. Slight increase in education funding from property taxes
Transportation	Increased traffic and possible traffic congestion at site entrances Probable increase in traffic accidents
Public Revenues and Expenditures	Increased community services funding (approximately \$2 million annually).
Outdoor Recreation	Increased demands; temporary workers may use campgrounds as temporary housing.
Sociocultural Conditions	Strained personal relationships because of controversy over the facility.
<i>Cultural Resources</i>	None
<i>Accident Scenarios</i>	Potential impact from dropped containers, fire, or gas release from waste decomposition. Potential for radioactive releases due to transportation accidents.

Alternatives			
Nemaha	Nuckolls	Assured Storage	No Action
Remove 320 acres from use	Same as Nemaha	Same as Proposed Action	None
None	None	None	None
Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	None
Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	None
None	None	None	None
Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	None
Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	None
Same as Proposed Action	Same as Proposed Action, except no wetlands impacted	Same as Proposed Action	None
Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.	None
None	None	None	None
None	None	None	None
Same as Proposed Action; reduced magnitude	Same as Proposed Action; reduced magnitude	Same as Proposed Action	None
Same as Proposed Action; reduced magnitude	Same as Proposed Action; reduced magnitude	Same as Proposed Action	None
Same as Proposed Action; reduced magnitude	Same as Proposed Action; reduced magnitude	Same as Proposed Action	None
Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	None
None.	None	Same as Proposed Action	None
Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	None
None	None	Same as Proposed Action.	Difficult Equipment Funding
None	None	None.	Health Plan Not Available
Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	Potential for Continued School Consolidation
Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	None
Community service funding	Same as Nemaha	Same as Proposed Action	Loss of CICF Revenue
Increased demand upon outdoor recreation facilities	None	Same as Proposed Action	None
Same as Proposed Action; reduced magnitude	Same as Proposed Action; reduced magnitude	Same as Proposed Action	None
Wooden-peg bam would be moved	None	None	None
Same as Proposed Action	Same as Proposed Action	Same as Proposed Action	None

Environmental Mitigation

Development of the proposed LLRW facility would result in impacts or consequences to several environmental resources. Some of these impacts have the potential to create adverse results. Mitigation measures and environmental commitments have been identified that would reduce or eliminate adverse effects of the proposed Boyd County LLRW facility. The impact mitigation chart at the end of the executive summary summarizes the affected environmental resources, the impacts that are expected as a result of the facility, and the proposed mitigation measures.

All potential adverse environmental impacts can be mitigated except for sociocultural impacts. These impacts are characterized by the tension and conflict caused between members of the community in the immediate area of the proposed LLRW facility. These impacts are expected to decline during the period of facility operations assuming the facility operates without radiological accidents.

Public Involvement and Coordination

Public involvement and coordination have been important elements in the development and review of the license application for the proposed disposal facility. The LLRW Program has sought public input throughout the license review process. Numerous comments were obtained and utilized during the scoping process. Comments were used:

- to determine the scope of the Draft Environmental Impact Analysis, and
- to assist the LLRW Program in the technical review of the license application

The approximately seven hundred public comments were used to identify significant issues to be addressed in the DEIA. Additionally, all comments were evaluated to ensure that any technical issues were addressed by the technical review process. If an issue had not been addressed, the comment was forwarded to US Ecology for response. As a result of this process, sixty-eight public comments were incorporated into the technical review process.

ONGOING ACTIVITIES

The Steps Following the DEIA

The release of this DEIA, and the DSER companion document, begins a public participation process. In early November, notice of an initial public hearing will appear in newspapers. This will begin a ninety-day public comment period allowing citizens the opportunity to make comments on their review of the state's documents. After the initial public hearing in early February, the DEIA and DSER will be revised and issued without the "draft" designation. A proposed license decision will then be announced by the State and will be the subject of a second public comment and hearing process. "Final" versions of the EIA and SER will be issued followed by the State's license decision.

Additional specifics regarding ongoing State activities can be found in the INFO Guide, a resource document.

IMPACT MITIGATION SUMMARY

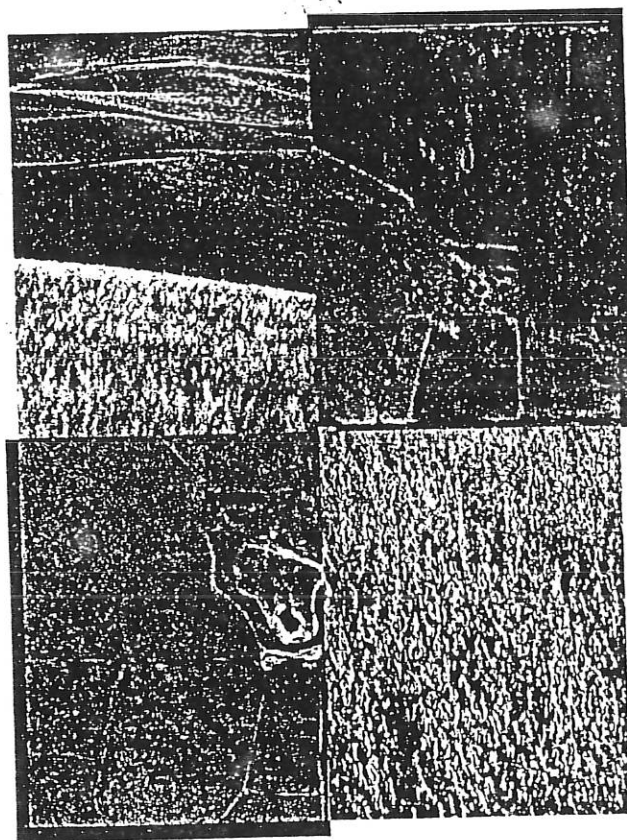
Environmental Resources	Environmental Impacts of the Proposed Action (Boyd County Site)
<i>Land</i>	Remove 110 acres from agricultural use
Meteorology	None
Climate	None
Air Quality	Vehicle emissions during construction increases background level of some priority pollutants; Dust levels would increase
<i>Background Radiation Levels</i>	A small increase to background radiation levels could occur following closure. No adverse impact or regulatory excursion is expected.
<i>Hydrology</i>	Modified on-site drainage patterns: potential sediment loading in stormwater runoff during construction. Potential radiological contamination of surface water during operations.
Surface Water	Potential increase of radiological constituents in groundwater
Ground Water	During construction, increased potential for soil erosion
<i>Geology</i>	Disturbed vegetation. Loss of on-site wetland. Potential sediment loading to off-site wetlands
<i>Ecology</i>	Common species may be displaced off-site. Potential for increased road kills and illegal hunting
Vegetation	None
Wildlife	None
Aquatic	None
Threatened and Endangered Species	None
<i>Socioeconomics</i>	Construction workers from outside the immediate area would be temporary residents. Small permanent increase in local and regional population.
Population	Expenditures would stimulate local and regional economics.
Regional Economy	Potential increase in land values due to population influx. Potential initial negative effects on property values.
Land Values	Increase Demand for temporary housing and permanent housing
Housing	Sewer and water supply may not be adequate
Public Utilities	Law enforcement may not be adequate
Law Enforcement	Fire protection may not be adequate
Fire Protection	Commitment from Village of Butte to fund a county-wide health plan.
Health Care	Slight increase in school enrollment and costs. Slight increase in education funding from property taxes
Public Education	Increased traffic and possible traffic congestion at site entrances
Transportation	Probable increase in traffic accidents
Public Revenues and Expenditures	Increased community services funding (approximately \$2 million annually).
Outdoor Recreation	Increased demands; temporary workers may use campgrounds as temporary housing.
Sociocultural Conditions	Strained personal relationships because of controversy over the facility.
<i>Cultural Resources</i>	None
<i>Accident Scenarios</i>	Potential impact from dropped containers, fire, or gas release from waste decomposition. Potential for radioactive releases due to transportation accidents.

Proposed Mitigation Activities
None
None
Wetting graded areas to reduce dust generation. Regular maintenance of vehicles and diesel-powered equipment. Revegetating disturbed areas
USE to monitor (air, water, soils, and vegetation) to detect radioactive leakage during operations, closure, and post-closure
Vegetative covers, retention ponds, and sediment barriers reduce particulate loading in stormwater runoff; testing of stormwater before release off-site
None
Dust and erosion control during construction; revegetation of exposed areas
Stormwater and sediment retention ponds to minimize effects on surface water drainage patterns and wildlife; on-site wetland would be replaced;
Fence off-site wetlands; design facility to avoid wetland encroachment
Educate construction work force regarding hunting and fishing regulations, and legal status of raptors
None
None
None
None
None
Allow property owners to recoup losses in property value within the first five years of facility operation
Provide temporary housing for construction workers
CICF/USE funds could be used to upgrade water and sewer services.
CICF/USE funds could be used to provide additional deputies
USE funds provide fire protection equipment/emergency response training.
None
CICF funds could be used to offset the costs associated with increased school enrollment.
Alternating start-work times during peak construction activities; provide on-site parking
CICF for education facilities and infrastructure; reducing county tax burden
Provide temporary housing so recreational campgrounds are not overburdened.
USE to monitor social service case loads; reinstate conflict resolution group
Newly discovered artifacts would be evaluated, curated, and preserved.
Off-site emergency response program; waste trucks would use designated transportation routes; provide training for radiological response along transportation routes.

DRAFT ENVIRONMENTAL IMPACT ANALYSIS

OF THE

Central Interstate Compact Proposed Low-Level Radioactive Waste Disposal Facility License Application



Prepared by the
State of Nebraska
Low-Level Radioactive Waste Program

October 1997

Table 3-2. Disposition of Alternatives

The following alternatives were evaluated by the LLRW Program. Five alternatives were retained for evaluation of their environmental impacts. The remaining alternatives were eliminated because they were not reasonable.

Subsection	Alternative Disposal Sites	Alternative	Retained	Rationale for Elimination
3.4	Existing Commercial LLRW Facilities	Alternative 1	No	Does not meet purpose or fulfill need
3.4.1	Barnwell, South Carolina	Alternative 2	No	Practically infeasible; does not meet purpose or fulfill need
3.4.2	Richland, Washington	Alternative 3	No	Does not meet purpose or fulfill need
3.4.3	Envirocare of Utah, Inc.	Alternative 4	No	Practically infeasible; does not meet purpose or fulfill need
3.5	Proposed Regional LLRW Facilities			
3.6	Federal Disposal Facilities	Alternative 5	No	Conflicts with public policy and legal authority
3.6.1	Federal LLRW Disposal Facilities			
3.6.2	High-Level Waste Disposal Facility	Alternative 6	No	Practically infeasible; conflicts with federal law
3.7	International Facilities	Alternative 7	No	Practically infeasible; conflicts with federal and state law
3.8	Sites Outside Nebraska	Alternative 8	No	Practically infeasible; conflicts with federal and state law
3.8.1	Sites Within the CIC			
3.8.2	Fort Saint Vrain, Colorado	Alternative 9	No	Practically infeasible; does not meet purpose or fulfill need
3.9	Sites Within Nebraska	Alternative 10	Yes	
3.9.1	Proposed Site (Boyd County)	Alternative 11	No	Not necessary to reenter screening process
3.9.2	Other Counties Eliminated by US Ecology	Alternative 12	Yes	
3.9.3	Nemaha County (former candidate site by US Ecology)	Alternative 13	Yes	
3.9.4	Nuckolls County (former candidate site by US Ecology)	Alternative 14	No	Practically infeasible; creates health or environmental risks; conflicts with state law
3.9.5	Former US Air Force Missile Silo Sites	Alternative 15	No	Creates health or environmental risks
3.9.6	Waste Burial Site in Hallam, Nebraska			

601-1

1-1/10

Table 3-2. Disposition of Alternatives (Continued)

The following alternatives were evaluated by the LLRW Program. Five alternatives were retained for evaluation of their environmental impacts. The remaining alternatives were eliminated because they were not reasonable.

Subsection	Alternative Disposal Sites	Alternative	Retained	Rationale for Elimination
3.9.7	Hastings Ammunition Depot	Alternative 16	No	Creates health or environmental risks; conflicts with state law
3.9.8	Nebraska-Only Facility	Alternative 17	No	Does not meet purpose or fulfill need
Alternative Engineering Methods				
3.10	Alternative Disposal Technologies			
3.10.1	Shallow Land Disposal	Alternative 18	No	Conflicts with state law
3.10.2	Enhanced Shallow Land Disposal	Alternative 19	No	Conflicts with state law
3.10.3	Intermediate-Depth Disposal	Alternative 20	No	Conflicts with state law
3.10.4	Below-Ground Vault	Alternative 21	No	Conflicts with state law
3.10.5	Earth-Mounded Concrete Bunker	Alternative 22	No	Conflicts with state law
3.10.6	Above-Ground Vault	Alternative 23	No	Does not meet performance objectives
3.10.7	Above-Ground Vault With Delayed Closure Cap	Alternative 24	No	Does not meet performance objectives
3.10.8	Earth-Mounded Above-Ground Vault (proposed design)	Alternative 25	Yes	
3.10.9	Earth-Mounded Above-Ground Vault With Overpacks	Alternative 26	No	Does not meet performance objectives
3.11	Alternative Storage Methods			
3.11.1	Store at Point of Generation	Alternative 27	No	Conflicts with legal authority; creates health or environmental risks; does not meet purpose or fulfill need
3.11.2	Centralized Storage	Alternative 28	No	Does not meet purpose or fulfill need
3.11.3	Assured Storage	Alternative 29	Yes	
Alternative Waste Management Strategies				
3.12	Stop the Generation of Waste	Alternative 30	No	Practically infeasible; creates health or environmental risks; does not meet purpose or fulfill need
3.13	Modify the Waste Classification System	Alternative 31	No	Practically infeasible; does not meet purpose or fulfill need
3.14	Waste Processing	Alternative 32	No	Does not meet purpose or fulfill need
3.15	No Action	Alternative 33	Yes	



Kansas Solid Waste Program Report

*An Assessment of
State Needs and Program Expenditures*

"Selected Facts and Figures"

prepared for
the 1998 Legislature

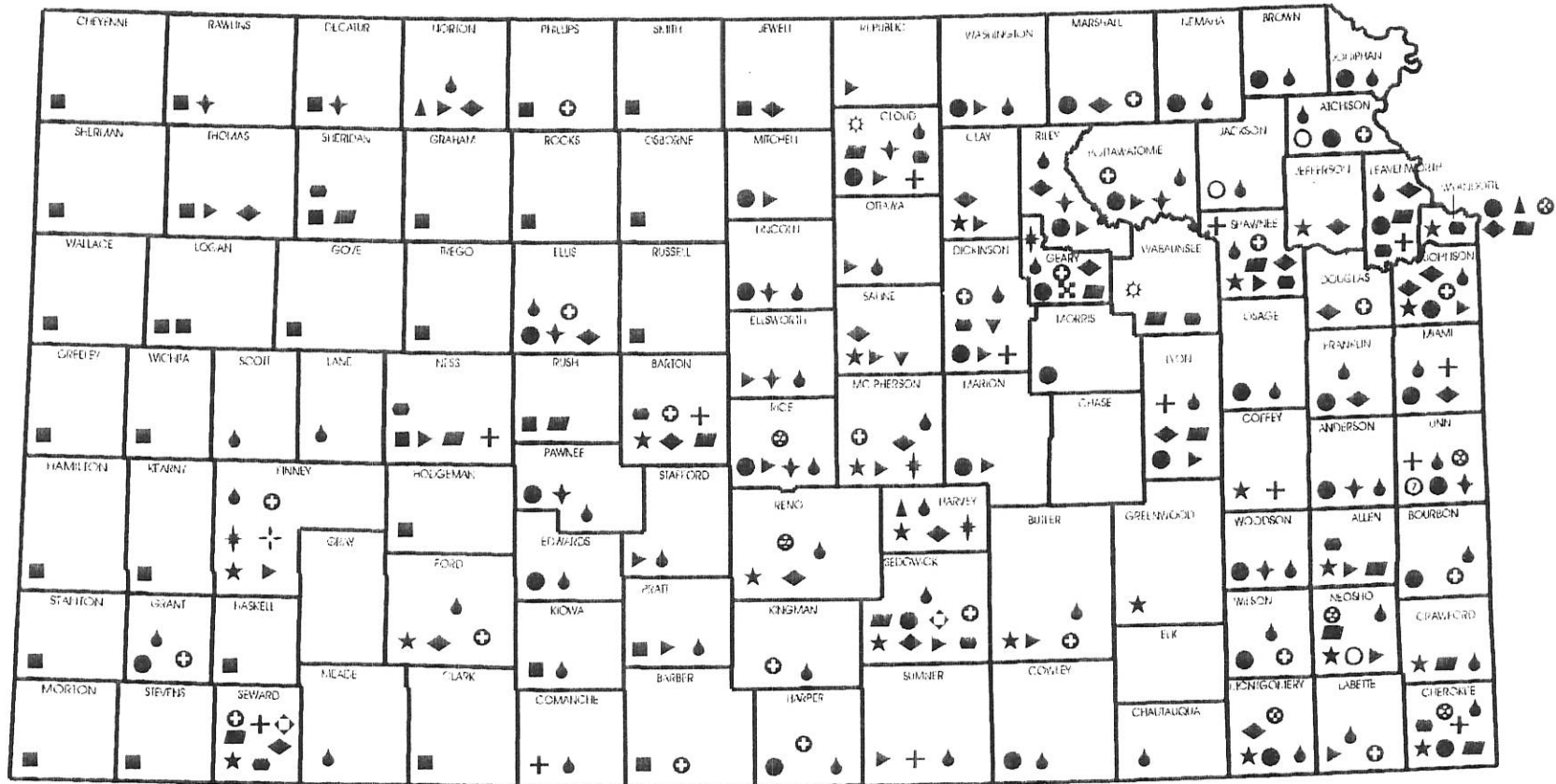


by
Kansas Department of Health and Environment



*House Environment
2-16-98
Attachment 2*

PERMITTED SOLID WASTE FACILITIES



SOLID WASTE PERMITS

- Small Exempt Landfill
- ▲ Incinerator
- ★ Subtitle D Landfill
- Rolloff Container Transfer Station
- Transfer Station
- + Medical Waste Processor
- ✦ Landfarm
- ✦ Tire Monofill
- C & D Landfill
- ⊕ Industrial Landfill

YARD WASTE COMPOSTING

- ✦ County Compost Site
- ▶ City Compost Site
- ▼ Private Compost Site
- ⊗ Military Compost Site

WASTE TIRE FACILITIES

- ▨ Tire Transporter
- Tire Processor
- ⊕ Tire Collection Center
- ⊙ Mobile Waste Tire Processor

HOUSEHOLD HAZARDOUS WASTE

- ◆ Permanent Facility

PERMITTED DISPOSAL AND PROCESSING FACILITIES 1997

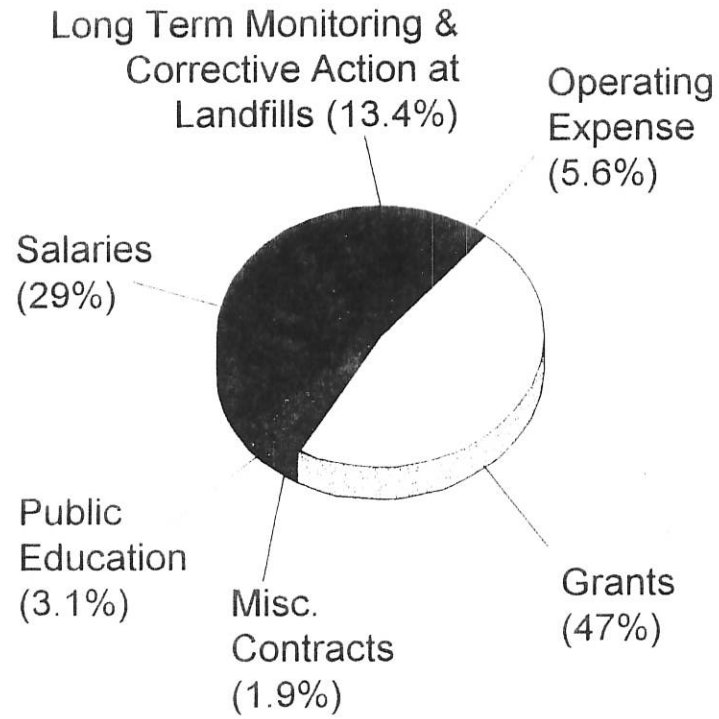
● Full Subtitle D Landfills	21
● Small and Exempt Landfills	30
● Transfer Stations	52
● Incinerators	3
● C & D Landfills	105
● Industrial Landfills	46
● Waste Tire Monofills	18
● Medical Waste Treatment	1
● Household Hazardous Waste Collection	26
● Yard Waste Composting	62
● Bioremediation Landfarms	4
● Solid Waste Processor	1
Total Permitted Facilities	369

and about 1000 closed or abandoned dumps



SOLID WASTE PROGRAM EXPENDITURES AND GRANTS

FY 1998 BUDGETED EXPENDITURES



SOLID WASTE GRANT PROGRAMS FY 94 to 1st Quarter FY 98

<u>Grant Type</u>	<u>Number of Grants</u>	<u>Total Awards (1000\$)</u>
Local Planning	38	3,982
Solid Waste Base (Eliminated)	19	277
Household Hazardous Waste Collection & Disposal	30	692
Agricultural Pesticide Collection & Disposal	7	171
Small Quantity HW Generator Collection Programs	2	77
Plan Implementation (Recycling, Composting, etc.)	77	3,821
TOTALS	173	9,020



Kansas Department of Health & Environment

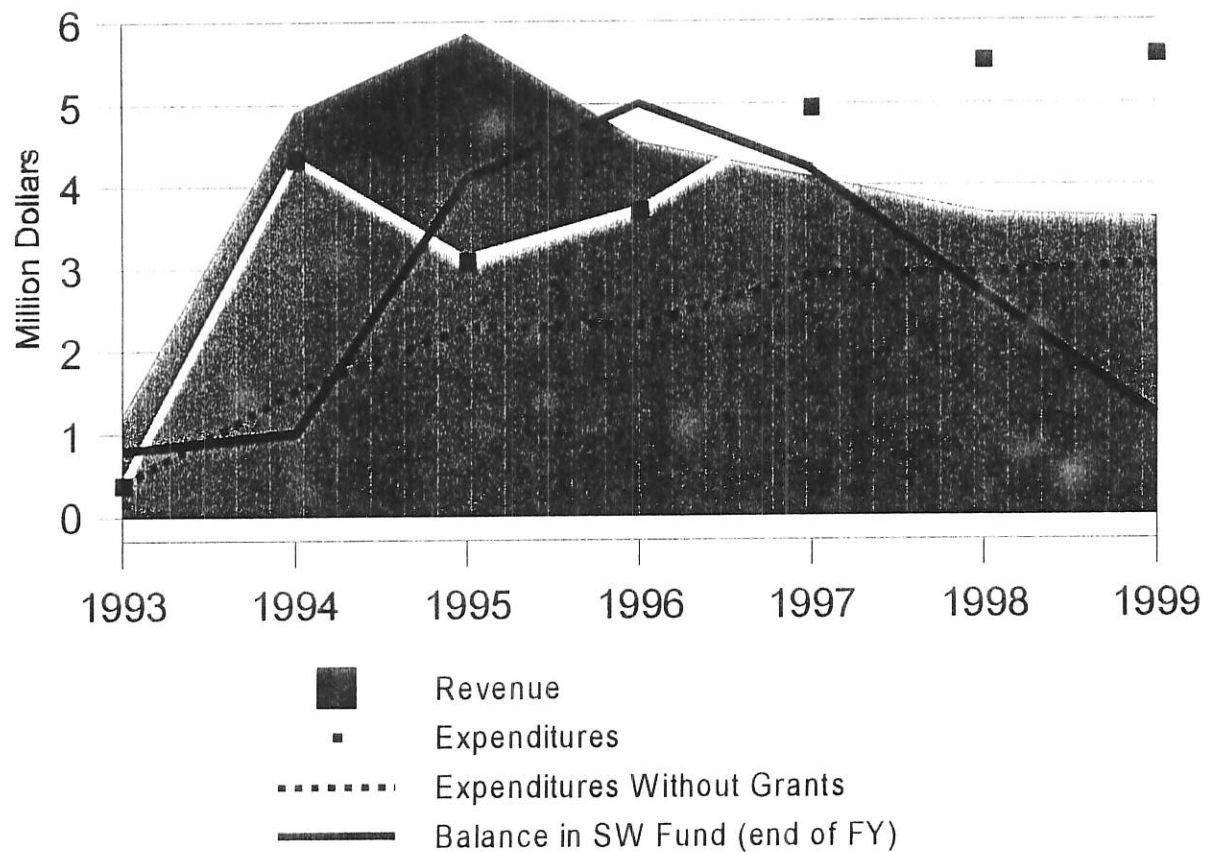


RECOMMENDED USES FOR SOLID WASTE FUND

	Rank	Percent of Survey Respondents Wanting Funding
Waste reduction, recycling, composting grants	1	90
Repair old dumps	2	92
Market development for recyclables	3	85
Household hazardous waste grants	4	90
Public Education	5	87
Training programs and seminars	6	89
Solid waste planning grants	7	84
Agricultural pesticide collection grants	8	84
Statewide conferences	9	84
Technical studies and research	10	85
CESQG collection grants	11	77



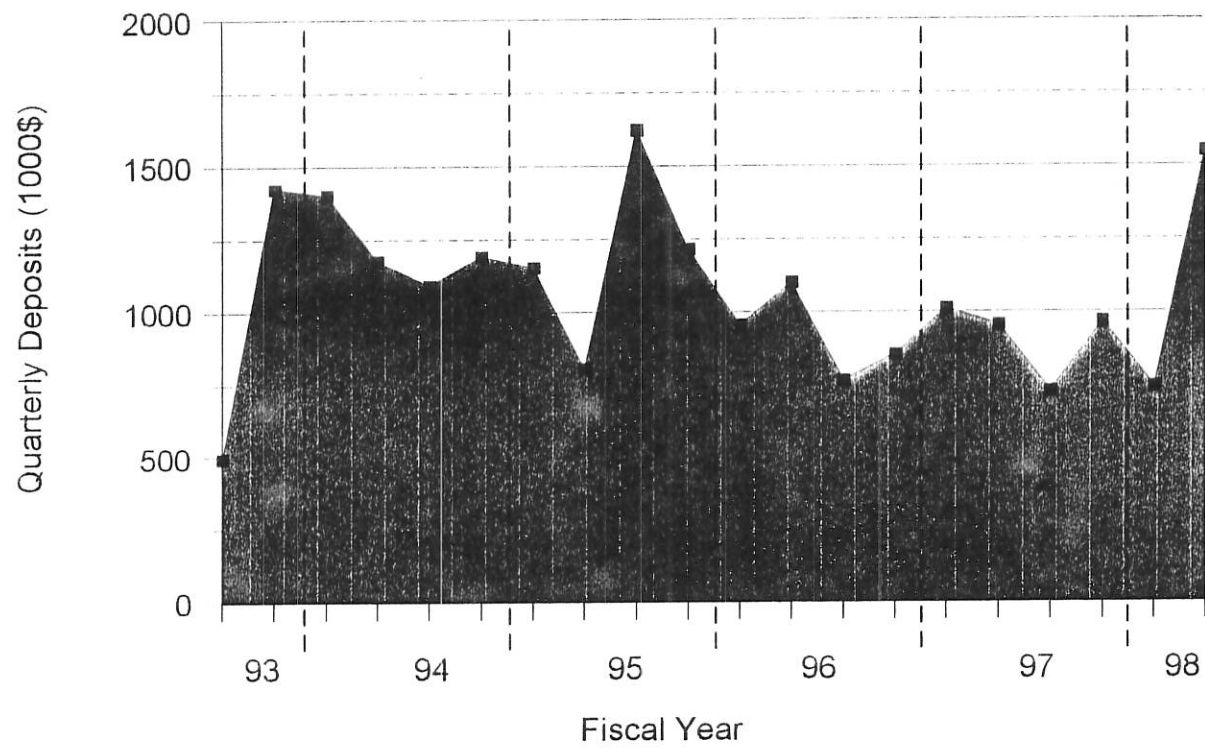
TIPPING FEE REVENUE VS EXPENDITURES and FUND BALANCE



Kansas Department of Health & Environment



Landfill Tipping Fee Revenue



Kansas Department of Health & Environment



MAJOR REPORT RECOMMENDATIONS

- Return Tipping Fee to \$1.50 per Ton effective January 1, 1999
- Apply Tipping Fee to Landfilled Waste Tires
- Maintain All Current Solid Waste Grant Programs
- Develop a Strategic Plan for Solid Waste Grants in Cooperation with Governor's Grants Advisory Committee
- Continue Solid Waste Public Education Program ("Kansas Don't Spoil It" Initiative)
- Enhance and Maintain State Sponsored Technical Training for Local Officials and Facility Operators
- Identify Ways to Improve Markets for Recyclables
- Maintain Old Dump Monitoring and Repair Program
- Prepare an Annual Report to Legislature on Solid Waste Fee Collection and Fund Expenditures
- Prepare a Comprehensive Report to Legislature in 2003 which evaluates all Aspects of Program



Kansas Department of Health & Environment

