
Evaluation of Nuclear Facility Decommissioning Projects

Project Summary Report
Elk River Reactor

Prepared by R. L. Miller, J. A. Adams

UNC Nuclear Industries

Prepared for
U.S. Nuclear Regulatory
Commission

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Most documents cited in NRC publications will be available from one of the following sources:

1. The NRC Public Document Room, 1717 H Street, N.W.
Washington, DC 20555
2. The NRC/GPO Sales Program, U.S. Nuclear Regulatory Commission,
Washington, DC 20555
3. The National Technical Information Service, Springfield, VA 22161

Although the listing that follows represents the majority of documents cited in NRC publications, it is not intended to be exhaustive.

Referenced documents available for inspection and copying for a fee from the NRC Public Document Room include NRC correspondence and internal NRC memoranda; NRC Office of Inspection and Enforcement bulletins, circulars, information notices, inspection and investigation notices; Licensee Event Reports; vendor reports and correspondence; Commission papers; and applicant and licensee documents and correspondence.

The following documents in the NUREG series are available for purchase from the NRC/GPO Sales Program: formal NRC staff and contractor reports, NRC-sponsored conference proceedings, and NRC booklets and brochures. Also available are Regulatory Guides, NRC regulations in the *Code of Federal Regulations*, and *Nuclear Regulatory Commission Issuances*.

Documents available from the National Technical Information Service include NUREG series reports and technical reports prepared by other federal agencies and reports prepared by the Atomic Energy Commission, forerunner agency to the Nuclear Regulatory Commission.

Documents available from public and special technical libraries include all open literature items, such as books, journal and periodical articles, and transactions. *Federal Register* notices, federal and state legislation, and congressional reports can usually be obtained from these libraries.

Documents such as theses, dissertations, foreign reports and translations, and non-NRC conference proceedings are available for purchase from the organization sponsoring the publication cited.

Single copies of NRC draft reports are available free upon written request to the Division of Technical Information and Document Control, U.S. Nuclear Regulatory Commission, Washington, DC 20555.

Copies of industry codes and standards used in a substantive manner in the NRC regulatory process are maintained at the NRC Library, 7920 Norfolk Avenue, Bethesda, Maryland, and are available there for reference use by the public. Codes and standards are usually copyrighted and may be purchased from the originating organization or, if they are American National Standards, from the American National Standards Institute, 1430 Broadway, New York, NY 10018.

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Project Summary Report
Elk River Reactor

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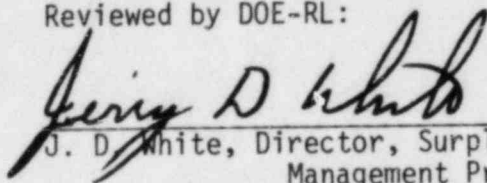
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Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555
NRC FIN B7568

EVALUATION OF NUCLEAR FACILITY DECOMMISSIONING PROJECTS

PROJECT SUMMARY REPORT

ELK RIVER REACTOR

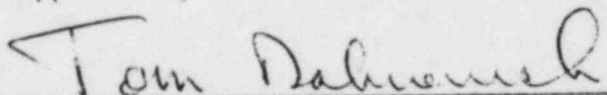
Reviewed by DOE-RL:



J. D. White, Director, Surplus Facilities
Management Program Office

11/5/82
Date

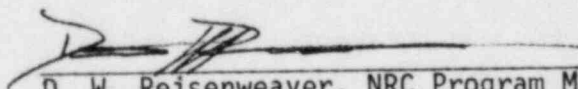
Approved by UNC:



T. E. Dabrowski, Director, Office of Surplus
Facilities Management

11/5/82
Date

Approved by NRC:



D. W. Reisenweaver, NRC Program Manager

11/10/82
Date

ABSTRACT

This report summarizes information concerning the decommissioning of the Elk River Reactor. Decommissioning data from available documents were input into a computerized data-handling system in a manner that permits specific information to be readily retrieved. The information is in a form that assists the Nuclear Regulatory Commission in its assessment of decommissioning alternatives and ALARA methods for future decommissionings projects. Samples of computer reports are included in the report. Decommissioning of other reactors, including NRC reference decommissioning studies, will be described in similar reports.

CONTENTS

ABSTRACT	iii
1.0 INTRODUCTION	1-1
1.1 Background Information	1-2
1.2 Acronyms & Definitions	1-3
2.0 FACILITY SUMMARY REPORT	2-1
2.1 Facility Description	2-1
2.2 Summary of Costs & Radioactive Waste	2-1
2.3 Comparison of Cost Items	2-1
2.3.1 Dollar Costs	2-2
2.3.2 Man-Rem Costs	2-2
3.0 DESCRIPTION OF COMPUTER REPORTS	3-1
3.1 Decommissioning Code Table Index	3-1
3.2 General Information	3-1
3.3 Significant Event Report	3-1
3.4 Radionuclide Inventory	3-1
3.5 Project Cost/Exposure Report	3-2
3.6 Dose Rate and Contamination Report	3-2
3.7 Project Labor Report	3-2
3.8 ALARA Report	3-2
3.9 Shipment Report	3-2
3.10 Disposal Costs	3-2
3.11 Surveillance Report	3-3

CONTENTS
(continued)

4.0	COMPUTER REPORTS	4-1
4.1	Decommissioning Code Table Index	4-2
4.2	General Information	4-3
4.3	Significant Event Report	4-8
4.4	Radionuclide Inventory	4-9
4.5	Project Cost/Exposure Report	4-12
4.6	Dose Rate and Contamination Report	4-23
4.7	Project Labor Report	4-24
4.8	ALARA Report	4-26
4.9	Shipment Report	4-27
4.10	Disposal Costs	4-29

1.0 INTRODUCTION

This document presents, in summary form, information pertaining to the decommissioning of the Elk River Reactor. The purpose of this type of report is to provide the Nuclear Regulatory Commission (NRC) and its licensees comparative data to assist in their assessment of decommissioning alternatives and ALARA methods for future decommissioning projects.

Data were assembled in a form that permitted input into a computerized data-handling system. The computer program* used produces a flexible data accumulation, manipulation, and retrieval system which provides decommissioning performance information such as:

- ALARA responsiveness
- Cost estimate accuracy
- Schedule adherence
- Project labor hours and costs
- Exposure accountability, and
- Radwaste generation and disposition

When sufficient decommissioning data have been obtained from an adequate number of facilities of any one type (BWR, PWR, Research), comparisons can be made between the experiences at the facilities and with NRC decommissioning NUREGs. The comparisons will be documented to facilitate the assessment of future nuclear facility decommissioning plans.

*MAPPER is the computer software package selected for the program. MAPPER stands for Maintain, Prepare, and Produce Executive Reports. This system is used with DOE's UNIVAC system at Richland, Washington.

Facilities studied and included in the data system during 1982 are listed below:

<u>Facility</u>	<u>Decommissioning Mode</u>
Elk River Reactor (BWR)	DECON
NUREG/CR-0130 (Reference PWR)	DECON SAFSTOR ENTOMB
NUREG/CR-0672 (Reference BWR)	DECON SAFSTOR ENTOMB
NUREG/CR-1756 (Reference Research and Test Reactor)	DECON SAFSTOR ENTOMB
Ames Reactor (Research)	DECON
BONUS (Boiling Nuclear Superheat)	ENTOMB
Peach Bottom-1 (HTGR)	SAFSTOR (Surveillance data only)
Fermi-1 (LMFBR)	SAFSTOR

This summary report concerns only the Elk River Reactor decommissioning program. Summary reports for the other facilities listed above may be obtained from:

GPO Sales Program
Division of Technical and Information and Document Control
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

1.1 BACKGROUND

In 1981 the NRC Staff initiated a multi-year program to assess and evaluate the methods, radiation exposure and costs associated with the decommissioning of retired nuclear reactors. The program objective is to provide the NRC with data that will assist in the assessment of future decommissioning plans to assure implementation of NRC's ALARA policy.

The program was originated under the auspices of the Office of Nuclear Regulatory Research through its Chemical Engineering Branch. UNC Nuclear Industries (UNC) is responsible for the technical direction of the program and for preparation of documentation and summary comparisons of evaluated projects. See NUREG/CR-2522 "Evaluation of Nuclear Facility Decommissioning Projects" for a complete description of the Program Plan.

Licensees currently decommissioning reactor facilities or licensees who are planning such projects have been, or will be solicited for possible inclusion in the program. After collection of sufficient data, analyses of each project will be completed, then comparisons will be made between the actual methods, costs and exposure used by licensees and with data contained in reference decommissioning studies.

1.2 ACRONYMS - ABBREVIATIONS - DEFINITIONS

Definitions of Decommissioning Alternatives

DECON - to immediately remove all radioactive material to permit unrestricted release of the property.

SAFSTOR - to fix and maintain property so that risk to safety is acceptable for period of storage followed by decontamination and/or decay to an unrestricted level.

ENTOMB - to encase and maintain property in a strong and structurally long-lived material (e.g., concrete) to assure retention until radioactivity decays to an unrestricted level.

Acronyms - Abbreviations

A/C	Activated or Contaminated
AEC	Atomic Energy Commission
ALARA	As Low As Reasonably Achievable
Bio	Biological
BWR	Boiling Water Reactor
Ci	Curie
CS	Carbon Steel
Cu Ft	Cubic Feet
DDS	Decommissioning Data System
DNA	Data Not Available
DOE	Department of Energy
DOS RED FCT	Dose Reduction Factor
DPM	Disintegrations per Minute
ERR	Elk River Reactor
HTGR	High Temperature Gas-Cooled Reactor

LMFBR	Liquid Metal Fast Breeder Reactor
MAPPER	Maintain, <u>P</u> repare, and <u>P</u> roduce <u>E</u> xecutive <u>R</u> eports
MW	Megawatt
MWD	Megawatt Days
MWE	Megawatt Electrical
MWT	Megawatt Thermal
NRC	U.S. Nuclear Regulatory Commission
NSSS	Nuclear Steam Supply System
NUC ENG	Nuclear Engineering
PSIG	Pounds/Square Inch Gauge
PWR	Pressurized Water Reactor
RPCA	Rural Cooperative Power Association
Rich	Richland
RR	Railroad
Sched	Scheduled
Sheff	Sheffield
Spec No	Specification Number
SS	Stainless Steel
SYS/COMP	System Component
Trip Len	Trip Length
Typ	Type
UNC	UNC Nuclear Industries, Operations Division
UPA	United Power Association
W.O.	Work Order

2.0 FACILITY SUMMARY REPORT

This summary report is a duplication of information found in the computer printout in Section 4.0. The intent of this summary is to show, at a glance, the data necessary to become familiar with the facility.

2.1 FACILITY DESCRIPTION

Name:	<u>Elk River Reactor</u>	Location:	<u>Elk River, Minnesota</u>
Owner:	<u>AEC</u>	Decommissioning Mode:	<u>DECON</u>
Reactor Type:	<u>BWR</u>		
Startup Date:	<u>1962</u>		
Shutdown Date:	<u>1968</u>		
Power Rating:	Electrical <u>23.8</u>		
(MW)	Thermal <u>58.2</u>		
Lifetime Power:	Electrical <u>DNA</u>		
(MWD)	Thermal <u>53,000</u>		
Reason for Decommissioning:	<u>End of AEC demonstration period</u>		

2.2 SUMMARY OF COSTS AND RADIOACTIVE WASTE

Total Decommissioning Costs:	<u>(1973\$) 6,150,000*</u>
Personnel Exposure:	<u>(Man-rem) 75</u>
Radioactive Waste-Volume:	<u>(Cubic Feet) 92,000</u>
Radioactive Waste-Activity:	<u>(Curie) 10,000</u>

2.3 COMPARISON OF COST ITEMS

The statistical significance of the following comparative information is not fully developed at the present time. Comparative numbers should be meaningful when additional decommissionings have been accomplished.

*See page 4-1 for inflation rate table to adjust costs to year of interest

2.3.1 Dollar Costs

The following listed items are compared to the total dollar cost for the decommissioning project.

Total Decommissioning Cost: \$6,150,000 (1973 Dollars)*

<u>Item</u>	<u>Unit of Measurement</u>	<u>No. of Units</u>	<u>No. of Dollars Spent per Unit</u>
Radioactivity	Ci	10,000	\$615 per Ci
Radioactive Waste	Cu Ft	92,000	\$65 per Cu Ft
Lifetime Power Output	MWD	53,000	\$115 per MWD
Lifetime Electr. Output	MWD	DNA	DNA
Spending Rate	Months	38	\$162,000 per Mo.

2.3.2 Man-rem Costs

The following listed items are compared to the amount of radiation exposure taken by decommissioning personnel.

Total man-rem used: 75

<u>Item</u>	<u>Unit of Measurement</u>	<u>No. of Units</u>	<u>No. of Units per Man-rem</u>
Radioactivity	Ci	10,000	130 Ci per man-rem
Radioactive Waste	Cu Ft	92,000	1,225 Cu Ft per man-rem
Decommissioning Cost	Dollar (1973)	6,150,000	\$82,000 per man-rem

*See page 4-1 for inflation rate table to adjust costs to year of interest.

3.0 DESCRIPTION OF REPORTS

The reports described below are the basic reports used in the program. In addition to the basic reports, MAPPER provides the ability to produce other reports by manipulating the data available in the basic reports.

3.1 Decommissioning Code Table Index

The code table contains a list of facility buildings, systems and system components and a corresponding system/component number for each. The system/component number is used throughout DDS to relate data to specific facility components.

This basic report type may be expanded to include tables or indices of other kinds related to facility decommissioning. Candidate tables are labor category wage rates, shipping company rates, shipping company name codes, disposal site name codes and rates, or archived file tape names.

3.2 General Information

This report is a free format input report designed to accommodate descriptive data of any kind. Entries may be given any title and related to any facility system by a system component number. Data are entered in any format on any subject. The report should be used to record information that does not fit into any of the report types organized by column. This includes facility location, description, owners, operators, builders. Summary data may also be included where it is not readily derivable from other reports or for convenient reference.

3.3 Significant Event Report

This report is used to record the facility's operating history, which in some cases could impact facility decommissioning. It contains dates, system/component numbers, and event descriptions. Noteworthy events such as construction completion, startup, shutdowns, significant incidents, and accidents are recorded in this report.

3.4 Radionuclide Inventory

An inventory of radionuclides present in each facility system will be made prior to the start of decommissioning. The amount of each radionuclide or its concentration, the measurement date, and a description of each system's material composition will be recorded. It will be noted whether a radionuclide present in a system is the result of neutron activation or contamination.

3.5 Project Cost/Exposure Report

Costs, schedules, man-hours, man-rem, both estimated and actual, are listed for each activity specification number. These costs may be broken out on lines having a subactivity specification number. This report is the main repository of cost and exposure information for a decommissioning project.

3.6 Dose Rate and Contamination Report

Dose rates at locations throughout each facility are recorded prior to decommissioning. Locations relative to a reference map, elevation, system/component number, and type of measurement are recorded for each measurement. Both upper and lower limits of dose rates or contamination levels (in disintegrations per minute) are listed.

3.7 Project Labor Report

Decommissioning labor costs, exposure, and man-weeks for each activity specification are recorded at a to-be-determined frequency. This supplements the project cost/exposure report by providing data on how costs and exposures accumulate over the course of a decommissioning project.

3.8 ALARA Report

The ALARA report contains records of ALARA efforts by activity specification number. The affected facility system, date, cost items, exposure information, and a description of the ALARA effort are listed. This report can be used to calculate by activity specification number or for all activities the total estimated man-rem saved as well as total cost incurred through the implementation of the ALARA effort.

3.9 Shipment Report

Volumes, weights, and other physical data are recorded by waste type for material produced by each activity specification. These data are listed for each shipment of material from the decommissioning site. Trip lengths and vehicle dose rates are recorded in order to calculate public exposure.

3.10 Disposal Costs

The costs associated with each waste disposal shipment are recorded in the Disposal Costs Report. Costs are divided into transportation, burial, and container categories. Costs for each container type on the shipment are also listed.

3.11 Surveillance Report

The surveillance report is used to record annual costs and exposures associated with long term surveillance of a decommissioned facility. Under normal conditions a surveillance report would not be required for a facility decommissioned under Mode DECON.

DESCRIPTION	OPERATING HISTORY

REFERENCES

- 1. AEC-ELK RIVER FINAL PROGRAM REPORT [C00-651-93 REV]
- 2. DISMANTLING PLAN (SS-836)
- 3. MONTHLY PROGRESS REPORTS (ERR 1 THROUGH ERR-40)
- 4. FINAL ELK RIVER REACTOR SITE SURVEY REPORT [C00-651-92]
- 5. FINAL REPORT OF THE SAFETY REVIEW COMMITTEE
- 6. ACTIVITY SPECIFICATIONS (1 THROUGH 11)
- 7. DETAILED WORKING PROCEDURE (4.1 THROUGH 11.1)
- 8. ERR DISMANTLING PROJECT DISPOSAL MANUAL

DISMANTLING OF THE ELK RIVER BOILING WATER REACTOR
J. W. JONES, R. W. PULLIAM, W. J. MANION

* 'RADIOACTIVE OPERATIONS IN THE DISMANTLING OF THE ELK RIVER REACTOR,'
J. F. NEMEC, R. BECKERS, R. BLUMBERG

*DEMOLITION OF RADIOACTIVE AND CONTAMINATED STRUCTURES BY USE OF EXPLOSIVES,
J. F. NEMEC, K. G. ANDERSON

HEALTH PHYSICS PLANNING FOR DISMANTLING OF THE ELK RIVER REACTOR,
DAN MCCONNON

* OPERATIONAL HEALTH PHYSICS DURING DISMANTLING OF THE ELK RIVER REACTOR,
DAN MCCONNOR

THE RESPIRATORY PROTECTION PROGRAM FOR DISMANTLING OF THE ELK RIVER REACTOR. D. MCCONNOR, R. WONACOTT

* EXPERIENCES IN DECONTAMINATION/DECOMMISSIONING OF THE ELK RIVER REACTOR,
D. MCCONNON, J. F. NEMEC

1. DECOMMISSIONING INFORMATION

PERSONNEL RADIATION EXPOSURE

NUMBER OF PERSONNEL MONITORED: 100
AVERAGE DOSE MANREM: 0.8

.ERR1 UNC DECOMMISSIONING DATA SYSTEM GENERAL INFORMATION REPORT 72C1104

* .SYS/COMP.

* SYSTEM/COMPONENT . NUMBER ENTRY TITLE

*=====,=====,=====

. TOTAL MANREM USED: 75

. DOSE TO PUBLIC-MANREM:DNA

.SEE PROJECT COST/EXPOSURE REPORT FOR ADDITIONAL PERSONNEL EXPOSURE INFO.

. COST SUMMARY (1973 \$)

. TOTAL DECOMMISSIONING COST: 6,455,775 (INCLUDES \$418,000 TECHNICAL SUP-
. PORT SERVICES)

. MANPOWER COSTS

. PREDECOMMISSIONING ENGINEERING: 425,775

. SECURITY: 216,495.

. HEALTH & SAFETY: 735,470.

. OPERATION AND MAINTENANCE: 526,715.

. ENGINEERING AND ADMINISTRATION: 565,260.

. STORAGE AND WAREHOUSING: 79,330

. LABOR RATES (\$/HR) (NOT INCLUDING BURDEN)

. DECOMMISSIONING OPERATIONS CONTRACTOR

. MANAGERS: 11.00

. PROJECT ENGINEER: 10.00

. PROJECT CONTROL ENGINEER: 5.45

. SUPERVISORS: 6.20

. CLERICAL:

. TYPIST: 3.00

. SECRETARY: 3.80

. REACTOR OPERATIONS: 5.30

. DECON TECH: 4.35

. GUARDS: 4.30

. HP.TECH: 5.75

. LAB TECH: 5.50

. ELECTRICIANS: 5.70

. LABORERS: 4.00

. DRAFTSMAN: 4.95

. JANITORS: 3.75

. SUBCONTRACTORS

. MANAGERS: 10.00

. FOREMAN: 7.00

. EXPLOSIVES ENGINEER: 11.25

. HEAVY EQUIP. OPERATOR: 8.40

. LIGHT EQUIP. OPERATOR: 7.65

. LABORERS: 6.25

. WASTE DISPOSAL COSTS(\$)

. BURIAL CHARGES: 75,437.

. TRANSPORT CHARGES: 105,037.

. CONTAINER COSTS: 263,614.

WASTE DISPOSAL RATES(\$)

BURIAL COSTS PER CU FT: 1.00

CASK RENTAL RATES: \$3000/MO FOR 4.5 IN
LEAD, 100 CU. FT.

TRANSPORTATION RATE:

4.0 COMPUTER REPORTS

Dollar values listed are in 1973 dollars. For adjusting costs listed in the computer reports to year of interest, use the inflation rate table below.

Inflation Rate Table*

<u>Year</u>	<u>Inflation Rate</u>
1966	.029
1967	.029
1968	.042
1969	.054
1970	.059
1971	.043
1972	.033
1973	.062
1974	.11
1975	.091
1976	.058
1977	.065
1978	.077
1979	.113
1980	.135
1981	.089
1982	.060 (estimated)

*Source: Statistical abstract of the United States, 1981 Consumer Price Index.

ERR1 U.N.C. DECOMMISSIONING DATA SYSTEM - DECONN CODE TABLE/INDEX 81102

* FACILITY SYS/COMP.
* SYSTEM/COMPONENT NUMBER.

NOTE: THIS REPORT NORMALLY WOULD CONTAIN A LIST OF FACILITY BUILDINGS,
SYSTEMS AND SYSTEM COMPONENTS AND A CORRESPONDING SYSTEM/COMPONENT
NUMBER FOR EACH. THE SYSTEM/COMPONENT NUMBER IS THEN USED THROUGH-
OUT THE SYSTEM TO RELATE DATA TO PARTICULAR COMPONENTS. ELK RIVER
REACTOR DECOMMISSIONING DOCUMENTS WERE NOT SUFFICIENTLY DETAILED
TO PERMIT ASSIGNMENT OF IDENTIFYING SYSTEM/COMPONENT NUMBERS.

***** END REPORT *****

WASTE DISPOSAL DATA

OTHER COSTS

FINAL SITE SURVEY

CRITERIA SUMMARY:

RESIDUAL REACTOR-ORIGINATED RADIOACTIVITY WILL BE REMOVED WHERE IT IS PRACTICABLE TO DO SO.

* IN NO CASE WILL RESIDUAL REACTOR ORIGINATED RADIOACTIVITY WHICH IS NOT PRACTICABLE TO REMOVE, ENDANGER OR POSE UNDUE RISK TO PUBLIC HEALTH

ERR1 UNC DECOMMISSIONING DATA SYSTEM GENERAL INFORMATION REPORT 72C1104

* .SYS/COMP.

* SYSTEM/COMPONENT . NUMBER . ENTRY TITLE

*=====

. AND SAFETY.

. SURFACE CONTAMINATION LIMITS- DIRECT-BETA 100 C/M (PANCAKE GM)

. ALPHA 100 D/M/100CM2

. SMEARABLE-BETA 100 D/M/100CM2

. ALPHA 10 D/M/100CM2

. IF ON-SITE SAMPLES INDICATE CONCENTRATIONS ABOVE THOSE THAT EXIST OFF-SITE,

. AN EVALUATION OF POPULATION EXPOSURE WILL BE MADE. IF EXPOSURE LEVELS TO

. THE GENERAL PUBLIC OF 500 MREM/YEAR MAXIMUM OR 170 MREM/YEAR AVERAGE ARE

. EXCEEDED, THE AREA WILL BE DECONTAMINATED

. INSTRUMENTS USED

. EBERLINE MODEL AC-28 60 CM2 GAS FLOW PROPORTIONAL DETECTOR WITH PAC-4G

. COUNT RATE METER. USED DIRECT BETA-GAMMA SURVEYS, MINIMUM DETECTABLE

. ESTABLISHED PRIOR TO EACH USE.

. REUTER-STOKES MODEL RSS-111 PRESSURIZED ION CHAMBER. USED FOR MEASURING

. GAMMA-RAY EXPOSURE RATES. MINIMUM DETECTABLE 1UR/HR OR LESS.

. 3 AND 5 INCH NAI GAMMA SPECTROMETER. USED FOR GAMMA ANALYSIS OF SOIL AND

. VEGETATION SAMPLES.

. GAS FLOW PROPORTIONAL COUNTER USED FOR GROSS BETA MEASUREMENTS OF SOIL &

. VEGETATION SAMPLES

. FINAL SURVEY RESULTS

. EXPOSURE RATE - 7.9 TO 13.8 MICRO-R/HR

. SURFACES - LESS THAN 100 C/M (PANCAKE GM)

. SOIL - AVERAGE GROSS BETA 43 PCI/GM.

. VEGETATION - AVERAGE GROSS BETA 96 PCI/GM.

. TRANSFERABLE (SURFACE SMEARS) LESS THAN 100 D/M 100 CM2

. RIVER BOTTOM SEDIMENTS - 29 TO 82 PCI/GM.

. BACKGROUND READINGS FROM OFFSITE LOCATIONS

. SOIL 16 TO 43 PCI/GM

. VEGETATION 59 TO 108 PCI/GM

.

. COSTS - SITE SURVEY

. DIRECT LABOR 7,200

. LABOR BURDEN 5,040

. MATERIAL 10,000

. ANALYTICAL SERVICES 5,000

. TOTAL 27,240

. COMPARISON ITEMS TOTAL COST OF DECOMMISSIONING \$(6,455,775)
----- = \$ COST/UNIT
NO. OF UNITS COMPARISON ITEMS

. ITEMS NO. OF UNITS COMPARISON COSTS

ERR1 UNC DECOMMISSIONING DATA SYSTEM GENERAL INFORMATION REPORT 72C1104

* .SYS/COMP.

* SYSTEM/COMPONENT . NUMBER . ENTRY TITLE

*=====.

* CURIE	9.955	618 DOLLARS/CURIE
* RAD WASTE (CU FT)	91.550	67 DOLLARS/CU FT
* SPENDING RATE (MONTHS)	38	161,994 DOLLARS/MONTH
* POWER RATING MEGAWATT	23.8	258,646 DOLLARS/MWE
* ELECTRICAL (MWE)	ONA	
* LIFETIME MEGAWATT DAYS	53,000	116 DOLLARS/MWDT
* THERMAL (MWDT)		
* (MWDT)		

	NO OF UNITS COMPARISON ITEM	
	-----	= UNITS/MAN-REM
	TOTAL MANREM USED	

ITEM	NO OF UNITS	COMPARISON
* CURIES	9.955	132 CI/MAN-REM USED
* RAD WASTE (CU FT)	91.550	1220 CU FT/MAN-REM
* TOTAL COST (\$)	6,155,755	82077 \$/MAN-REM
* LIFETIME MEGAWATT DAYS	53,000	707 MWDT/MAN-REM
* THERMAL (MWDT)		
* POWER RATING (MWE)	23.8	.32 MWE/MAN-REM

.ASSUMPTIONS

. COSTS ARE LISTED IN 1973 YEAR DOLLARS.

D1106

SIGNIFICANT EVENT REPORT

UNC DECOMMISSIONING DATA SYSTEM - SIGNIFICANT EVENT REPORT
* EVENT * SYS/COMP *
* DATE * NUMBER * SIGNIFICANT EVENT DESCRIPTION

60
621119
640713
6506
680431
690916
710323
711018
7205
720605
740723
740930
CONSTRUCTION START
CONSTRUCTION COMPLETED
INITIAL CRITICALITY
INITIAL POWER OPERATION
START COMMERCIAL POWER OPERATION
END COMMERCIAL POWER OPERATION.
FUEL SHIPPED FROM SITE
OPERATING CONTRACT AMENDMENT FOR DISMANTLING
DISMANTLING PLAN ISSUED
FINAL ENVIRONMENTAL IMPACT STATEMENT
DISMANTLING ORDER ISSUED
FINAL SITE SURVEY
TERMINATION ORDER

.ERR1 U.N.C. DECOMMISSIONING DATA SYSTEM - RADIONUCLIDE INVENTORY H1136
 * .A.MEASUR. (-----RADIONUCLIDE-----)
 * SYS/COMP. ./.EMENT .CURIES. DPM/
 * NUMBER . SOURCE MATERIAL DESCRIPTION .C. DATE . NAME .CURIES .FT**3 .100CM2.

 .NOTE: ALL BLANK ENTRIES INDICATE THAT DATA WAS NOT AVAILABLE(DNA)

NUMBER	SOURCE MATERIAL DESCRIPTION	C. DATE	NAME	CURIES	FT**3	100CM2
DNA	CONCRETE BIO SHIELD	A 710430	H	3	9.30E-5	DNA DNA
	CONCRETE BIO SHIELD	A 710430	C	14	1.43E-2	
	CONCRETE BIO SHIELD	A 710430	NA	22	1.08E-1	
	CONCRETE BIO SHIELD	A 710430	AR	39	1.72E-3	
	CONCRETE BIO SHIELD	A 710430	CA	45	9.46E-3	
	CONCRETE BIO SHIELD	A 710430	MN	54	1.29E-3	
	CONCRETE BIO SHIELD	A 710430	FE	55	8.47E-1	
	CONCRETE BIO SHIELD	A 710430	CO	60	2.066	
	CONCRETE BIO SHIELD	A 710430	EU	152	2.120	
	CS CAN I	A 710430	C	14	7.03E-8	
	CS CAN I	A 710430	MN	54	1.68E-1	
	CS CAN I	A 710430	FE	55	3.88E 1	
	CS CAN I	A 710430	CO	60	1.0534	
	CS CAN II	A 710430	C	14	6.06E-8	
	CS CAN II	A 710430	MN	54	6.41E-2	
	CS CAN II	A 710430	FE	55	3.34E 1	
	CS CAN II	A 710430	CO	60	9.08E-1	
	CS CAN II	A 710430	C	14	2.73E-7	
	CS LOWER BAFFLES	A 710430	V	49	1.95E-1	
	CS LOWER BAFFLES	A 710430	MN	54	2.458	
	CS LOWER BAFFLES	A 710430	FE	55	4.19E 2	
	CS LOWER BAFFLES	A 710430	CO	57	1.73E-1	
	CS LOWER BAFFLES	A 710430	CO	60	3.39E 2	
	CS LOWER BAFFLES	A 710430	NI	63	2.76E 1	
	CS THERMAL SHIELD	A 710430	C	14	1.08E-6	
	CS THERMAL SHIELD	A 710430	V	49	1.2038	
	CS THERMAL SHIELD	A 710430	MN	54	1.52E 1	
	CS THERMAL SHIELD	A 710430	FE	55	1.32E 3	
	CS THERMAL SHIELD	A 710430	CO	57	1.0711	
	CS THERMAL SHIELD	A 710430	CO	60	1.34E 3	
	CS THERMAL SHIELD	A 710430	NI	63	1.09E 2	
	CS UPPER BAFFLES	A 710430	C	14	5.46E-7	
	CS UPPER BAFFLES	A 710430	V	49	1.78E-1	
	CS UPPER BAFFLES	A 710430	MN	54	2.2474	
	CS UPPER BAFFLES	A 710430	FE	55	8.16E 2	
	CS UPPER BAFFLES	A 710430	CO	57	1.59E-1	
	CS UPPER BAFFLES	A 710430	CO	60	6.76E 2	
	CS UPPER BAFFLES	A 710430	NI	63	5.52E 1	
	CS VESSEL BASE	A 710430	C	14	8.75E-8	
	CS VESSEL BASE	A 710430	MN	54	1.9876	
	CS VESSEL BASE	A 710430	FE	55	7.92E 2	
	CS VESSEL BASE	A 710430	CO	60	4.33E 1	
	CS VESSEL BASE	A 710430	V	49	7.99E-5	
	LEAD OUTER THERMAL SHIELD	A 710430	MN	54	1.19E-3	
	LEAD OUTER THERMAL SHIELD	A 710430	FE	55	4.13E-1	
	LEAD OUTER THERMAL SHIELD	A 710430	CO	57	6.05E-5	
	LEAD OUTER THERMAL SHIELD	A 710430	CO	60	3.13E-1	
	LEAD OUTER THERMAL SHIELD	A 710430	NI	63	2.0136	
	LEAD OUTER THERMAL SHIELD	A 710430	AG	108	1.16E-8	

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.ERR1      U.N.C. DECOMMISSIONING DATA SYSTEM - RADIONUCLIDE INVENTORY      H1136
*          *          *          *          *          *          *          *
*SYS/COMP.  *          *          *          *          *          *          *
* NUMBER .   SOURCE MATERIAL DESCRIPTION  .C. DATE . NAME .CURIES .FT**3 .100CM2.
*=====
LEAD OUTER THERMAL SHIELD      A 710430 CD 109 2.52E-9
LEAD OUTER THERMAL SHIELD      A 710430 AG 110 4.54E-2
LEAD OUTER THERMAL SHIELD      A 710430 CD 113 1.20E-9
LEAD OUTER THERMAL SHIELD      A 710430 SN 113 6.85E-7
LEAD OUTER THERMAL SHIELD      A 710430 SN 119 5.57E-6
LEAD OUTER THERMAL SHIELD      A 710430 SN 121 1.72E-6
LEAD OUTER THERMAL SHIELD      A 710430 SN 123 3.86E-9
LEAD OUTER THERMAL SHIELD      A 710430 SB 125 1.31E-4
LEAD BOTTOM PLUG                A 710430 H   3 4.19E-8
LEAD BOTTOM PLUG                A 710430 C   14 3.20E-5
LEAD BOTTOM PLUG                A 710430 AR  39 1.26E-7
LEAD BOTTOM PLUG                A 710430 CA  45 8.94E-5
LEAD BOTTOM PLUG                A 710430 V   49 9.3E-14
LEAD BOTTOM PLUG                A 710430 MN  54 3.32E-3
LEAD BOTTOM PLUG                A 710430 FE  55 6.30E-1
LEAD BOTTOM PLUG                A 710430 CO  57 7.0E-14
LEAD BOTTOM PLUG                A 710430 CO  60 5.54E-3
LEAD BOTTOM PLUG                A 710430 NI  63 1.7E-11
LEAD BOTTOM PLUG                A 710430 AG 108 9.6E-12
LEAD BOTTOM PLUG                A 710430 CD 109 2.9E-18
LEAD BOTTOM PLUG                A 710430 AG 110 3.8E-11
LEAD BOTTOM PLUG                A 710430 CD 113 1.4E-18
LEAD BOTTOM PLUG                A 710430 SN 113 5.7E-16
LEAD BOTTOM PLUG                A 710430 SN 119 4.8E-15
LEAD BOTTOM PLUG                A 710430 SN 121 1.4E-15
LEAD BOTTOM PLUG                A 710430 SN 123 4.0E-18
LEAD BOTTOM PLUG                A 710430 SB 125 1.1E-13
ZR SHROUD                      A 710430 C   14 6.22E-7
ZR SHROUD                      A 710430 V   49 9.87E-3
ZR SHROUD                      A 710430 MN  54 5.12E-2
ZR SHROUD                      A 710430 FE  55 8.5731
ZR SHROUD                      A 710430 CO  57 7.81E-3
ZR SHROUD                      A 710430 CO  60 2.28E 2
ZR SHROUD                      A 710430 NI  63 1.2428
ZR SHROUD                      A 710430 CD 109 1.7E-5
ZR SHROUD                      A 710430 CD 113 1.29E-5
ZR SHROUD                      A 710430 SN 113 1.17E-2
ZR SHROUD                      A 710430 SN 119 1.02E-1
ZR SHROUD                      A 710430 SN 121 2.73E-2
ZR SHROUD                      A 710430 SN 123 8.29E-5
ZR SHROUD                      A 710430 SB 125 2.23
304 SS CORE PLATE              A 710430 C   14 5.19E-7
304 SS CORE PLATE              A 710430 V   49 4.57E-1
304 SS CORE PLATE              A 710430 MN  54 6.7345
304 SS CORE PLATE              A 710430 FE  55 1.12E 3
304 SS CORE PLATE              A 710430 CO  57 3.46E-1
304 SS CORE PLATE              A 710430 CO  60 8.58E 2
304 SS CORE PLATE              A 710430 AG 108 5.51E 1
304 SS PRESSURE CLAD           A 710430 V   49 1.63E-2
304 SS PRESSURE CLAD           A 710430 MN  54 2.40E-1
304 SS PRESSURE CLAD           A 710430 FE  55 1.52E 2

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.FRR1      U.N.C. DECOMMISSIONING DATA SYSTEM - RADIONUCLIDE INVENTORY      H1136
*          *          *          *          *          *          *          *
*SYS/COMP.  *          *          *          *          *          *          *
* NUMBER    * SOURCE MATERIAL DESCRIPTION * C. DATE * NAME * CURIES * FT**3 * 100CM2.
*          *          *          *          *          *          *          *
=====
304 SS PRESSURE CLAD      A 710430 CO 57 1.23E-2
304 SS PRESSURE CLAD      A 710430 CO 60 1.16E 2
304 SS PRESSURE CLAD      A 710430 NI 63 7.4913
304 SS SHROUD             A 710430 C 14 1.92E-7
304 SS SHROUD             A 710430 V 49 1.70E-1
304 SS SHROUD             A 710430 MN 54 2.4981
304 SS SHROUD             A 710430 FE 55 4.16E 2
304 SS SHROUD             A 710430 CO 57 1.28E-1
304 SS SHROUD             A 710430 CO 60 3.18E 2
304 SS SHROUD             A 710430 NI 63 8.7922
304 SS SHROUD             A 710430 C 14 8.28E-8
304 SS SHROUD PLATE       A 710430 V 49 7.29E-2
304 SS SHROUD PLATE       A 710430 MN 54 1.0748
304 SS SHROUD PLATE       A 710430 FE 55 1.79E 2
304 SS SHROUD PLATE       A 710430 CO 57 5.53E-2
304 SS SHROUD PLATE       A 710430 CO 60 1.37E 2
304 SS SHROUD PLATE       A 710430 NI 63 8.7922
304 SS SUPPRT BARREL      A 710430 C 14 2.50E-8
304 SS SUPPRT BARREL      A 710430 V 49 2.20E-2
304 SS SUPPRT BARREL      A 710430 MN 54 3.24E-1
304 SS SUPPRT BARREL      A 710430 FE 55 5.40E 1
304 SS SUPPRT BARREL      A 710430 CO 57 1.67E-2
304 SS SUPPRT BARREL      A 710430 CO 60 4.13E 1
304 SS SUPPRT BARREL      A 710430 NI 63 2.6531
304 SS SUPPRT BARREL      A 710430 C 14 1.20E-9
430 SS INSULATION         A 710430 V 49 3.50E-4
430 SS INSULATION         A 710430 MN 54 6.87E-3
430 SS INSULATION         A 710430 FE 55 1.2182
430 SS INSULATION         A 710430 CO 57 8.61E-6
430 SS INSULATION         A 710430 CO 60 7.93E-1
430 SS INSULATION         A 710430 NI 63 1.46E-3

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.ERR1 UNC DECOMMISSIONING DATA SYSTEM - PROJECT COST/EXPOSURE 81122
 * .C.SCHED .SCHED .ESTIM. .ESTIM.ACTUAL.ACTUAL.ACTUL. .ACTUL.
 *ACTIVITY. COST ITEM/ .SYS/COMP.A.START .COMPL .MAN .ESTIMTD.MAN .START .COMPL .MAN .ACTUAL .MAN
 *SPEC NO. ACTIVITY . NUMBER .T.DATE .DATE .HOURS.COST \$.REM . DATE .DATE .HOURS.COST \$.REM .
 =====
 . COMMENT-----DATA IN THIS REPORT WAS TAKEN FROM THE FINAL ELK RIVER REACTOR
 PROGRESS REPORT DATED NOVEMBER 1974. BLANK SPACES SHOWN IN THIS
 REPORT REPRESENT DNA (DATA NOT AVAILABLE). DISCREPANCIES BETWEEN
 ESTIMATED AND ACTUAL COSTS CANNOT BE EXPLAINED FROM EXISTING
 DOCUMENTED INFORMATION.
 .
 01 SITE AND FACILITY
 * PREPARATION
 .
 01.00 UPA INDIRECT LABOR 62660 62660
 01.00 UPA INDIRECT BURDEN 40420 40420
 01.00 UPA DIRECT LABOR 11827 11827
 01.00 UPA DIRECT BURDEN 7595 7595
 01.00 SECURITY FENCE 3180 3275
 01.00 GUARD STATION 2050 2586
 01.00 POLE SHED 3830 3653
 01.00 PAVING 6530 6525
 01.00 TEMP WORK BUILDING 63300 68908
 01.00 CHANGE ROOM, LAUNDRY 25000 14591
 * LARGE ACCESS HATCH
 01.00 CONTAINMENT OPENING 41850 47670
 * FLOOR HATCH,SHORING
 * SHORING BASEMENT
 * LEVEL FLOOR
 01.00 VIBRATION MONITOR 3000 3441
 * EQUIPMENT
 01.00 PIONEER POWER LABOR 998
 * PERSONNEL
 01.00 MATERIALS,TRAVEL. 28600 28600
 * PERSONNEL RELOC.
 01.00 TRAVEL 2760
 01.00 REMODEL FLUIDYNE BLD 400 1272
 01.00 TEMP TRAILER RENT 480
 * FOR GUARDS
 01.00 MISCELLANEOUS ITEMS 3188
 OTHER INDIRECT 149923
 (W.O.1300->W.O.1700)
 01.00 CONTINGENCY 20890
 * TOTAL FOR ACTIVITY SPEC 01 438700 460372
 .
 . NOTE: BREAKDOWN OF ACTUAL COSTS FOR W.O. 1300 THRU W.O. 1700
 ARE LISTED BELOW. BREAKDOWN COSTS WERE TAKEN FROM WORK SHEETS.
 DISCREPANCIES BETWEEN BREAKDOWN COSTS AND TOTALS CANNOT BE
 EXPLAINED FROM AVAILABLE DOCUMENTATION.
 .
 *01.00 HEALTH PHYSICS 47300
 * W.O.1300
 *01.00 OPERATING AND 34520
 * MAINT. COSTS
 * W.O.1400
 *01.00 SECURITY COSTS 13485

.ERR1 UMC DECOMMISSIONING DATA SYSTEM - PROJECT COST/EXPOSURE B1122
 * .C.SCHED .SCHED .ESTIM. .ESTIM.ACTUAL.ACTUAL.ACTUL. .ACTUL.
 #ACTIVITY. COST ITEM/ .SYS/COMP.A.START .COMPL .MAN .ESTIMTD.MAN .START .COMPL .MAN .ACTUAL .MAN .
 #SPEC NO . ACTIVITY . NUMBER .T.DATE .DATE .HOURS.COST \$.REM . DATE .DATE .HOURS.COST \$.REM .
 =====
 * W.O.1500
 #01.00 ENGINEERING & 36955
 * ADMINISTRATIVE
 * W.O.1600
 #01.00 STORAGE & 5200
 * WAREHOUSING
 * W.O.1700
 * TOTAL FOR W.O.1300-1700 137460
 *
 02 REMOVAL OF PIPING 6
 * AND EQUIPMENT
 *
 02.01 UPA LABOR & BURDEN
 02.01 UPA DIRECT LABOR 33400 27993
 02.01 UPA DIRECT LABOR 23112 19250
 * BURDEN
 02.02 SUBCONTRACTORS
 02.02 PIONEER POWER,INC. 61550 56039
 * PERSONNEL)
 02.02 ENGINEERING CONSULT. 4000
 02.02 HERBST&SONS CONSTR. 4500 3464
 * CO.,INC.(RIGGING)
 02.03 OTHER COSTS
 02.03 POWER SAWS 1800 4514
 02.03 WELDING EQUIPMENT 2000 31
 02.03 SCAFFOLDING 2600
 02.03 CUTTING TORCH GAS 3000
 * (\$200/MO)
 02.03 MISCELLANEOUS ITEMS -404
 02.03 OTHER INDIRECT 107008 190849
 * (W.O.1300->1700)
 02.03 CONTINGENCY 60742
 * TOTAL FOR ACTIVITY SPEC 02 303712 301736
 *
 NOTE: BREAKDOWN OF ACTUAL COSTS FOR W.O. 1300 THRU W.O.1700
 ARE LISTED BELOW. BREAKDOWN COSTS WERE TAKEN FROM WORKSHEETS.
 DISCREPANCIES BETWEEN BREAKDOWN COSTS AND TOTALS CANNOT BE
 EXPLAINED FROM AVAILABLE DOCUMENTATION.
 *
 #02.03 HEALTH PHYSICS 60235
 * W.O.1300
 #02.03 OPERATING AND 43960
 * MAINT. COSTS
 * W. O. 1400
 #02.03 SECURITY COSTS 17170
 * W. O. 1500
 #02.03 ENGINEERING & 47055
 * ADMINISTRATION
 * W. O. 1600
 #02.03 STORAGE AND 6620

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.ERR1      UNC DECOMMISSIONING DATA SYSTEM - PROJECT COST/EXPOSURE      84122
*          *          *          *          *          *          *          *          *          *
*ACTIVITY*  COST ITEM/  *          *          *          *          *          *          *          *          *
*SPEC NO *  ACTIVITY   *          *          *          *          *          *          *          *          *
=====
*          WAREHOUSING
*          W. O. 1700
*
*          TOTAL FOR W.O. 1300-1700      175040
*
*
*
*
03      REMOVAL OF SUPERHEAT
*      ER AND SUPERHEATER
*      BUILDING
*
03.01    UPA LABOR&BURDEN
03.01    UPA DIRECT LABOR      10933      8490
03.01    UPA DIRECT BURDEN      6555      4953
03.02    SUBCONTRACTORS
03.02    STRACT CONST.      1000
*      [SUPERHEATER WALL
*      REPAIR]
03.02    STRACT CONST.      4700
*      [SUPERHEATER ROOF
*      REPAIR]
03.02    PIONEER POWER INC.      1400      1500
*      [PERSONNEL]
03.02    REMOVE BUILDING      24000
03.02    HERBST&SONS(REMOVE      24700      24700
*      SUPERHEATER)
03.02    FOUNDATION PREP      15000
03.03    OTHER COSTS
03.03    TOOLS      2000
03.03    MISCELLANEOUS ITEMS
03.03    OTHER INDIRECT(W.O.      26325      -268
*      1300->1700      43771
03.03    CONTINGENCY      5546
*      TOTAL FOR ACTIVITY SPEC 03      116459      88846
*
*
* NOTE: BREAKDOWN OF ACTUAL COSTS FOR W.O. 1300 THRU W.O. 1700
* ARE LISTED BELOW. BREAKDOWN COSTS WERE TAKEN FROM WORK SHEETS.
* DISCREPANCIES BETWEEN BREAKDOWN COSTS AND TOTALS CANNOT BE
* EXPLAINED FROM AVAILABLE DOCUMENTATION.
*
*03.03    HEALTH PHYSICS      13810
*      W.O. 1300
*03.03    OPERATING AND      10080
*      MAINT. COSTS
*      W.O. 1400
*03.03    SECURITY COSTS      3935
*      W.O. 1500
*03.03    ENGINEERING AND      10790
*      ADMINISTRATION
*      W.O. 1600
*03.03    STORAGE AND      1520

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.ERR1      UNC DECOMMISSIONING DATA SYSTEM - PROJECT COST/EXPOSURE      81122
*          .C.SCHED .SCHED .ESTIM. .ESTIM.ACTUAL.ACTUAL.ACTUL. .ACTUL.
*ACTIVITY.  COST ITEM/ .SYS/COMP.A.START .COMPL .MAN .ESTIMTD.MAN .START .COMPL .MAN .ACTUAL .MAN .
*SPEC NO .  ACTIVITY   NUMBER .T.DATE .DATE .HOURS.COST $ .REM . DATE .DATE .HOURS.COST $ .REM .
=====
*          WAREHOUSING
*          W.O.1700
*
*                                     TOTAL W.O 1300-1700 -> 40135

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04      REMOVAL OF PASSAGE-
*      WAY AND EQUIPMENT
*
04.01    UPA LABOR.BURDEN
04.01    UPA DIRECT LABOR      6970      64
04.01    UPA DIRECT BURDEN      4930      42
04.02    SUBCONTRACTORS
04.02    PIONEER POWER INC.      4268
*      (PERSONNEL)
04.02    HERBST&SONS(REMOVAL      40000      36350
*      OF BLDG.FOUNDATION
*      PREP.&EQUIP.
04.02    REPAIR PASSEGEWAY      5250
*      TUNNEL
04.03    OTHER COSTS
04.03    MISCELLANEOUS ITEMS
04.03    OTHER INDIRECT(W.O.      18117      47626
*      1300-1700)
*      CONTINGENCY      17505      22970
*      TOTAL FOR ACTIVITY SPEC 04      87522      68991

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.  NOTE: BREAKDOWN OF ACTUAL COSTS FOR W.O. 1300 THRU W.O. 1700 ARE
.  LISTED BELOW. BREAKDOWN COSTS WERE TAKEN FROM WORK SHEETS.
.  DISCREPANCIES BETWEEN BREAKDOWN COSTS AND TOTALS CANNOT BE
.  EXPLAINED FROM AVAILABLE DOCUMENTATION.
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*04.03    HEALTH PHYSICS      7345
*      W.O.1300
*04.03    OPERATING AND      5360
*      MAINT. COSTS
*      W.O.1400
*04.03    SECURITY COSTS      2095
*      W.O.1500
*04.03    ENGINEERING &      5740
*      ADMINISTRATIVE
*      W.O.1600
*04.03    STORAGE AND      805
*      WAREHOUSING
*      W.O.1700
*
*                                     TOTAL FOR W.O. 1300-1700 21345
*
*

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05      REMOVAL OF VESSEL
*      INTERNALS

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UNC DECOMMISSIONING DATA SYSTEM - PROJECT COST/EXPOSURE										B1122				
ACTIVITY	COST ITEM	SYS/COMP	A.START	COMPL	MAN	ESTIM	ESTIM	ACTUAL	ACTUAL	ACTUAL				
SPEC NO	ACTIVITY	NUMBER	T.DATE	DATE	HOURS	COST	\$	REM	DATE	DATE	HOURS	COST	\$	REM
05.01	UPA LABOR & BURDEN													
05.01	UPA DIRECT LABOR					34520						13199		
05.01	UPA BURDEN ON					21074						8420		
*	DIRECT LABOR													
05.02	SUBCONTRACTORS													
05.02	METCON, INC.											3217		
05.02	HERBST & SONS											14094		
*	CONSTRUCTION CO.													
05.02	ORNL (TOOLING, DESIGN					311000						307482		
*	& DEVEL.)													
05.02	PIONEER POWER, INC.					10600						47066		
*	(PERSONNEL)													
05.02	ENGINEERING CONSLT.					10000								
05.03	OTHER COSTS													
05.03	RADIOACTIVE MATRL					6000								
*	CONTROL (MTL&EQUIP)													
05.03	GAS & POWER					4000						11196		
05.03	MOCK-UP AT ERR					6000								
05.03	TRAVEL (PRIMARYLY											11073		
*	OPERATING TRAINING													
*	AT ORNL)													
05.05	MISCELLANEOUS ITEMS											9637		
05.05	OTHER INDIRECT COST					425446						28856		
*	(W.O. 1300-1700)													
05.05	CONTINGENCY					123847								
*	TOTAL FOR ACTIVITY SPEC 05					949487						785110		
NOTE: BREAKDOWN OF ACTUAL COSTS FOR W.O. 1300 THRU W.O. 1700 ARE LISTED BELOW. BREAKDOWN COSTS WERE TAKEN FROM WORK SHEETS. DISCREPANCIES BETWEEN BREAKDOWN COSTS AND TOTALS CANNOT BE EXPLAINED FROM AVAILABLE DOCUMENTATION.														
*05.05	HEALTH PHYSICS											11386		
*	W.O.1300													
*05.05	OPERATING AND											83090		
*	MAINT. COSTS													
*	W.O.1400													
*05.05	SECURITY COSTS											32455		
*	W.O.1500													
*05.05	ENGINEERING &											88945		
*	ADMINISTRATIVE													
*	W.O.1600													
*05.05	STORAGE AND											12515		
*	WAREHOUSING													
*	W.O.1700													
TOTAL FOR W.O. 1300-1700												330870		
06	REMOVAL & DISPOSAL													

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.ERR1      UMC DECOMMISSIONING DATA SYSTEM - PROJECT COST/EXPOSURE      31122
*          .C.SCHED .SCHED .ESTIM. .ESTIM.ACTUAL.ACTUAL.ACTUL. .ACTUL.
*ACTIVITY.  COST ITEM/ .SYS/COMP.A.START .COMPL .MAN .ESTIMTD.MAN .START .COMPL .MAN .ACTUAL .MAN .
*SPEC NO .  ACTIVITY   .NUMBER .T.DATE .DATE .HOURS.COST $ .REM . DATE .DATE .HOURS.COST $ .REM .
=====
*          DF PRESSURE VESSEL
06.01      UPA LABOR&BURDEN
06.01      UPA DIRECT LABOR                      29975                      6269
06.01      UPA BURDEN ON                          19746                      3861
*          DIRECT LABOR
06.02      SUBCONTRACTORS
06.02      DRNL(TOOLING,DESIGN                     400000                      489782
*          & DEVEL.)
06.02      PIONEER POWER INC                      50000                      70204
*          (PERSONNEL)
06.02      ENGINEERING CONSLT.                   10000
06.02      HERBST&SONS CONST.                      21451
*          CO.,INC.
06.02      METCON INC.                          4314
06.03      OTHER COSTS
06.03      RADIOACTIVE MATER-                     1000
*          IALS CONTROL
*          (MATL & EQUIP)
06.03      GAS & POWER                          4000                      10684
06.03      MOCK UP AT ERR                        3000
06.03      VESSEL CLOSURE                        1000
*          PLATES
06.03      TRAVEL                                7244
06.03      MISCELLANEOUS ITEMS                   13929
06.03      OTHER INDIRECT COST                   120881                      429599
*          (WO 1300-1700)
06.03      CONTINGENCY                          159900
*          TOTAL FOR ACTIVITY SPEC 06             799502                      1057337
.
.  NOTE:  BREAKDOWN OF ACTUAL COSTS FOR W.O. 1300 THRU W.O. 1700 ARE
.          LISTED BELOW.  BREAKDOWN COSTS WERE TAKEN FROM WORK SHEETS.
.          DISCREPANCIES BETWEEN BREAKDOWN COSTS AND TOTALS CANNOT BE
.          EXPLAINED FROM AVAILABLE DOCUMENTATION.
.
*06.03      HEALTH PHYSICS                      135900
*          W.O.1300
*06.03      OPERATING AND                      99175
*          MAINT. COSTS
*          W.O.1400
*06.03      SECURITY COSTS                      38735
*          W.O.1500
*06.03      ENGINEERING &                      106160
*          ADMINISTRATIVE
*          W.O.1600
*06.03      STORAGE AND                      14940
*          WAREHOUSING
*          W.O.1700
*          TOTAL FOR W.O. 1300-1700             394910

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.ERR1 UNC DECOMMISSIONING DATA SYSTEM - PROJECT COST/EXPOSURE B1122

*ACTIVITY.	COST ITEM/	SYS/COMP.	A.START	COMPL	MAN	ESTIM.D	MAN	START	COMPL	MAN	ACTUAL	MAN	ACTUAL
*SPEC NO	ACTIVITY	NUMBER	T.DATE	DATE	HOURS	COST \$	REM	DATE	DATE	HOURS	COST \$	REM	

07	REMOVAL & DISPOSAL												12
*	OF BIOLOGICAL SHIELD												
07.01	UPA LABOR & BURDEN												
07.01	UPA LABOR & BURDEN												
07.01	UPA DIRECT LABOR					14850						6018	
07.01	UPA BURDEN ON DIRECT					9652						3583	
*	LABOR												
07.02	SUBCONTRACTORS												
07.02	AIR POWER EQUIP. CORP											5500	
*	(RESTOCK CHANGE ON												
*	INGERSOLL HYDRABOOM)												
07.02	TRADE TOOLS(1 DADA											3037	
*	SPLITTER)												
07.02	TRADE TOOLS(STEEL											39	
*	DRILLS)												
07.02	EQUIP. NOT RECOVER-											3196	
*	ABLE (SPECIALTY												
*	DEMOLITION)												
07.02	CONCRETE SAMPLING											3972	
*	(SPECIALTY DEMO)												
07.02	CONCRETE REMOVAL					37500							
*	(CONTAMINATED												
*	CONCRETE ONLY)												
07.02	PIONEER POWER INC											77496	
*	(PERSONNEL)												
07.02	INSTRUMENT TUBE					20000						69000	
*	REMOVAL(SPECIALTY												
*	DEMOLITION)												
07.02	ENGINEERING CONSLT.					5000						38382	
*	(ATA)												
07.02	HERBST&SONS											498693	
07.02	MINNEAPOLIS EQUIP.											5417	
07.02	HAYDEN-MURPHY EQUIP.											3511	
07.03	OTHER COSTS												
07.03	SPECIAL TOOLING					4000							
07.03	LOADING BASKET					1000							
07.03	SHIELDING WORK					8000							
*	PLATFORM												
07.03	TRAVEL											5448	
07.03	OTHER MATRL.COST											871	
*	IN CONNECTION WITH												
*	CORE DRILLING												
07.03	MISCELLANEOUS ITEMS											24140	
07.03	OTHER INDIRECT COST					132903						474404	
*	(WO 1300-1700)												
07.03	CONTINGENCY					116452							
*	TOTAL FOR ACTIVITY SPEC 07					349357						1222707	

NOTE: BREAKDOWN OF ACTUAL COSTS FOR W.O. 1300 THRU W.O. 1700 ARE LISTED BELOW. BREAKDOWN COSTS WERE TAKEN FROM WORK SHEETS.

.ERR1 UNC DECOMMISSIONING DATA SYSTEM - PROJECT COST/EXPOSURE 84122
 * .C.SCHED .SCHED .ESTIM. .ESTIM.ACTUAL.ACTUAL.ACTUL. .ACTUL.
 *ACTIVITY. COST ITEM/ .SYS/COMP.A.START .COMPL .MAN .ESTIMTD.MAN .START .COMPL .MAN .ACTUAL .MAN .
 *SPEC NO ACTIVITY . NUMBER .T.DATE .DATE .HOURS.COST \$.REM . DATE .DATE .HOURS.COST \$.REM .
 =====
 * DISCREPANCIES BETWEEN BREAKDOWN COSTS AND TOTALS CANNOT BE
 * EXPLAINED FROM AVAILABLE DOCUMENTATION.
 *
 *07.03 HEALTH PHYSICS 148860
 * W.O.1300 109360
 *07.03 OPERATING AND
 * MAINT. COSTS
 * W.O.1400 42715
 *07.03 SECURITY COSTS
 * W.O.1500 117065
 *07.03 ENGINEERING &
 * ADMINISTRATIVE
 * W.O.1600 16475
 *07.03 STORAGE AND
 * WAREHOUSING
 * W.O.1700 TOTAL FOR W.O. 1300-1700 435475
 *
 08 REMOVAL OF REACTOR
 * BUILDING&STRUCTURES
 08.01 UPA LABOR AND BURDEN 1722
 08.01 UPA DIRECT LABOR 21303 1095
 08.01 UPA BURDEN ON DIRECT
 * LABOR 13833
 08.02 SUBCONTRACTORS 8045
 08.02 PIONEER POWER INC
 * (PERSONNEL) 337709
 08.02 HERBST&SONS(REMOVAL
 * OF CONCRETE&STEEL
 * LINER) 685800
 08.02 ENGINEERING CONSLT.
 * (ATA) 5000 5912
 08.02 SPECIALTY DEMOLITION
 * (CONCRETE SAMPLES) 3972
 08.02 HAYDEN-MURPHY EQUIP. 3389
 08.02 SAM BLOOM IRON&METAL -25000
 * (SALE OF STEEL LINER
 08.03 OTHER COSTS 89
 08.03 MISCELLANEOUS ITEMS 61922
 08.03 OTHER INDIRECT COST 79194
 * (WO 1300-1700) 201282
 08.03 CONTINGENCY 1006412 398855
 * TOTAL FOR ACTIVITY SPEC 08
 *
 * NOTE: BREAKDOWN OF ACTUAL COSTS FOR W.O. 1300 THRU W.O. 1700 ARE LISTED
 * BELOW. BREAKDOWN COSTS WERE TAKEN FROM WORK SHEETS. DISCREPANCIES
 * BETWEEN BREAKDOWN COSTS AND TOTALS CANNOT BE EXPLAINED FROM
 * AVAILABLE DOCUMENTATION.

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.ERR1      UNC DECOMMISSIONING DATA SYSTEM - PROJECT COST/EXPOSURE      84422
*          *          *          *          *          *          *          *          *          *
*ACTIVITY*      COST ITEM/      .SYS/COMP.A.START .COMPL .MAN .ESTIMTD.MAN .START .COMPL .MAN .ACTUAL .MAN .
*SPEC NO .      ACTIVITY      . NUMBER .T.DATE .DATE .HOURS.COST $ .REM . DATE .DATE .HOURS.COST $ .REM .
*===== *          *          *          *          *          *          *          *          *          *
*08.03    HEALTH PHYSICS                                           19540
*          W.O.1300
*08.03    OPERATING AND                                           14260
*          MAINT. COSTS
*          W.O.1400
*08.03    SECURITY COSTS                                           5570
*          W.O.1500
*08.03    ENGINEERING AND                                         15265
*          ADMINISTRATIVE
*          W.O.1600
*08.03    STORAGE AND                                             2150
*          WAREHOUSING
*          W.O.1700
*
*                                     TOTAL FOR W.O. 1300-1700      56785

09        REMOVAL OF MISC.
*          EQUIPMENT

09.01     UPA LABOR & BURDEN
09.01     UPA DIRECT LABOR                                4000      12
09.01     UPA BURDEN ON DIRECT LABOR                     2600      7
*          DIRECT LABOR
09.03     OTHER COSTS
09.03     OTHER INDIRECT COST                            11902
09.03     CONTINGENCY                                    4626
*          TOTAL FOR ACTIVITY SPEC 09                      23128      19

10        MATERIAL DISPOSAL

10.01     UPA LABOR & BURDEN
10.01     UPA DIRECT LABOR                                50534      9754
10.01     UPA BURDEN ON DIRECT LABOR                     31685      6552
*          LABOR
10.02     SUBCONTRACTORS
10.02     PIONEER POWER INC                                50965
*          (PERSONNEL)
10.02     ENGINEERING CONSLT.                             2000
10.03     OTHER COSTS
10.03     PLYWOOD BOXES                                6750      6800
10.03     SPECIAL PLYWOOD BOXES                          250      30660
*          STEEL DRUMS                                    10880      8123
10.03     FIBER DRUMS                                    2450
10.03     ANL BINS                                       5250      8440
10.03     TRAVEL                                         6361
10.03     MISCELLANEOUS ITEMS                          22774

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.ERR4      UNC OFCOMMISSIONING DATA SYSTEM - PROJECT COST/EXPOSURE      B1122
*          *          *          *          *          *          *          *          *          *
*ACTIVITY*   COST ITEM/   .SYS/COMP.A.START .COMPL .MAN .ESTIMTD.MAN .START .COMPL .MAN .ACTUAL .MAN .
*SPEC NO*   ACTIVITY     .NUMBER .T.DATE .DATE .HOURS.COST $ .REM .DATE .DATE .HOURS.COST $ .REM .
=====
10.03  CASK RENTAL&LINERS                74000                270415
10.03  TRANS TO BURIALSITE                56700                178857
10.03  SPECIAL CASK&LINERS                33000
10.03  BURIAL COSTS                      45700                134230
10.03  NON-CONTAMINATED                  13000                 54
*      MATERIAL
10.03  BANDING MACHINE                    600                 789
10.03  OTHER INDIRECT COST                394856               509289
*      (WO 1300-1700)
10.03  CONTINGENCY                      181914
*      TOTAL FOR ACTIVITY SPEC 10          909569               1244054

NOTE: BREAKDOWN OF ACTUAL COSTS FOR W.O. 1300 THRU 1700
      ARE LISTED BELOW. BREAKDOWN COSTS WERE TAKEN FROM WORK SHEETS.
      DISCREPANCIES BETWEEN BREAKDOWN COSTS AND TOTALS CANNOT BE
      EXPLAINED FROM AVAILABLE DOCUMENTATION.

10.03  HEALTH PHYSICS                160730
*      W.O. 1300
10.03  OPERATING AND                117290
*      MAINT. COSTS
*      W.O. 1400
10.03  SECURITY COSTS                45815
*      W.O. 1500
10.03  ENGINEERING &                125555
*      ADMINISTRATIVE
*      W.O. 1600
10.03  STORAGE AND                17670
*      WAREHOUSING
*      W.O. 1700
*      TOTAL FOR W.O. 1300-1700 --> 467060

11      FACILITY CLOSEOUT

11.01  UPA LABOR & BURDEN
11.01  UPA DIRECT LABOR                10054                173
11.01  UPA BURDEN ON DIRECT            6529                109
*      LABOR
11.02  SUBCONTRACTORS
11.02  SPECIALTY DEMOLITION            7955
*      (SAMPLING)
11.02  PIONEER POWER INC              1816
*      (PERSONNEL)
11.02  FIX STEAM PLANT WALL            2600
11.02  FILL TO GRADE                  15000               3000
11.02  REMOVE TEMP BLDG
*      & STRUCTURES
11.02  ENGINEERING CONSLT.            3000
*      (FINAL REPORT)
11.03  OTHER COSTS

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4-22


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.ERR1      U.N.C. DECOMMISSIONING DATA SYSTEM - DOSE RATE
*          MAP      ELEV . MAP .SYS/COMP. .MR/HR .MR/HR .100CM2.100CM2.ELEMENT .
* REFERENCE . BUILDING .FEET .COORD. NUMBER .TYP.LOWER .UPPER .LOWER .UPPER . DATE .
*=====
.NOTE: ALL BALNK ENTRIES INDICATE THAT DATA WAS NOT AVAILABLE(DNA)

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CON	33500	710602	OUTSIDE PRESSURE VESSEL
CON	828000	710602	INSIDE INNER TH. SHIELD
CON 5.0E 6	DNA	710602	CORE & SHROUD PLATES
CON	2.4E 6	710602	UPPER BAFFLE PLATE (OR SHADOW SHIELD)
CON	3150	710602	CORE SAMPLE BIOLOGICAL SHIELD
CON	650	710602	CORE SAMPLE BIOLOGICAL SHIELD
CON 350	500	710602	PRIMARY WATER SYSTEM PIPING
CON	800	710602	PURIFICATION SYSTEM PIPING
CON	220	710602	PURIFICATION SYSTEM PIPING
CON	135	710602	PURIFICATION SYSTEM PIPING
CON	200	710602	DECAY HEAT REMOVAL SYSTEM
CON	150	710602	DECAY HEAT REMOVAL SYSTEM
CON	1500	710602	FUEL ELEMENT STORAGE WELL COOLING SYSTEM
CON	350	710602	FUEL ELEMENT STORAGE WELL COOLING SYSTEM
CON	20000	710602	LIQUID WASTE SYSTEM
CON	170	710602	LIQUID WASTE SYSTEM
CON	230	710602	REACTOR WATER COLUMN SYSTEM
CON	120	710602	REACTOR SUB BASEMENT FLOOR AREA
CON 25	400	710602	REACTOR MAIN FLOOR LEVEL

F4432

188
413
336
176
298
61
528
202
138
366
303
129
14
52
26
15
52
29
56
104
73
35
42
119
111
16
223
520
163
32

7201	1.7
7202	2.2
7203	1
7204	1.1
7205	.3
7206	1.3
7207	2.2
7208	2.7
7209	2.2
7210	3.5
7211	2.7
7301	6.5
7302	6.8
7303	5.1
7304	5

.ERR1 U.N.C. DECOMMISSIONING DATA SYSTEM - PROJECT LABOR		F1132
*ACTIVITY.		.MAN.LABOR .MAN-
*SPEC NO . DATE	LABOR CATEGORY	.WKS.COST \$.REM .
=====		
7305		3
7306		13.8
7307		5.2
7308		.2
7309		.4
7310		.3
7311		1
7312		6.8


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.ERR1      U.N.C. DECOMMISSIONING DATA SYSTEM - SHIPMENT REPORT      C1124
*          .TRIP .
* SHIP .SHIP .LEN* .MR/HR .MR/HR .MR/HR . RADIONUCLIDE .ACTIVITY. WASTE .Y. PHYS . CHEMICAL .SHIP .CUBIC .
* DATE .NUM .MILES.CONTCT.& FEET. CAB .NAME .AMOUNT .SPEC NO .DESCRIPTION.P. FORM . FORM .CLASS.FEET .POUNDS .
=====
.NOTE: ALL BLANK ENTRIES INDICATE DATA THAT WAS NOT AVAILABLE(DNA)
710831      A/C MATRL      1000 50000
710930      A/C MATRL      3000 70000
711031      A/C MATRL      1000 30000
711130      A/C MATRL      3000 180000
711231      A/C MATRL      1000 40000
720131      A/C MATRL      1000 50000
720430      A/C MATRL      2500 80000
720630      A/C MATRL      1000 20000
720731      A/C MATRL      500 30000
720831      A/C MATRL      1500 190000
720930      A/C MATRL      500 20000
721031      A/C MATRL      500 70000
721231      A/C MATRL      1500 80000
730131      A/C MATRL      2000 110000
730228      A/C MATRL      500 30000
730331      A/C MATRL      2000 60000
730430      A/C MATRL      1500 60000
730531      A/C MATRL      1000 110000
730630      A/C MATRL      3000 70000
730731      A/C MATRL      2500 350000
730831      A/C MATRL      500 10000
730930      A/C MATRL      1000 20000
731031      A/C MATRL      2000 40000
731130      A/C MATRL      2000 120000
731231      A/C MATRL      1500 20000
740131      A/C MATRL      1000 100000
740430      A/C MATRL      2500 100000
740531      A/C MATRL      2500 160000
740731      A/C MATRL      3000 80000
730731      A/C CONC.      540
730831      A/C CONC.      810
731031      A/C CONC.      6750
731130      A/C CONC.      4860
731231      A/C CONC.      4050
740131      A/C CONC.      4590
740228      A/C CONC.      5940
740331      A/C CONC.      10260
740430      A/C CONC.      6750
.NOTE---ALL WASTE PRESENTED BELOW WAS NONCONTAMINATED-----
*710831      CONCRETE      300
*711031      CONCRETE      4000
*711131      CONCRETE      300
*720131      CONCRETE      300
*740531      CONCRETE      600
*740631      CONCRETE      62000
*740731      CONCRETE      16200
*710930      SCRAPMETAL      4000
*711031      SCRAPMETAL      300000
*711130      SCRAPMETAL      20000
*730630      SCRAPMETAL      20000

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.ERR1 U.N.C. DECOMMISSIONING DATA SYSTEM - DISPOSAL COSTS D1126
 .(----- BURIAL CHARGES \$ -----). (----- TRANSPORTATION CHARGES \$ -----). (----- CONTAINER CHARGES \$ -----)
 * SHIP .SHIP .DISP .SHIPPING .NO .CONT .CONT
 * DATE .NUM .SITE .BASIC .CURIE .SP/HND.OTHER .TOTAL .COMPANY .BASIC .PERMIT .OTHER .TOTAL .CONTAINER TYPE .CONT .COST .RENT
 =====
 .NOTE: AVAILABLE DOCUMENTS DO NOT PERMIT COORDINATION OF INDIVIDUAL SHIPMENTS
 AND CHARGES. THE TOTAL NUMBER OF SHIPMENTS IS UNKNOWN. ALL BLANK
 ENTRIES INDICATE THAT THE DATA WAS NOT AVAILABLE(DNA)

710930	SHEFF	555
710930	SHEFF	861
711031	SHEFF	1131
711031	SHEFF	1292
711031	SHEFF	995
711231	SHEFF	1156
711231	SHEFF	763
711231	SHEFF	452
711231	SHEFF	900
711231	SHEFF	479
711231	SHEFF	1011
720131	SHEFF	1395
720430	SHEFF	1986
720731	SHEFF	930
720831	SHEFF	870
720831	SHEFF	1008
720930	RICH	3047
720930	SHEFF	100
720930	SHEFF	2400
720930	SHEFF	2400
720930	SHEFF	825
721130	SHEFF	155
721130	SHEFF	1550
721130	SHEFF	1750
730131	SHEFF	1057
730131	SHEFF	1010
730131	SHEFF	113
730228	SHEFF	897
730228	SHEFF	312
730228	SHEFF	533
730331	SHEFF	887
730331	SHEFF	200
730431	SHEFF	976
730431	RICH	1089
730531	SHEFF	934
730531	SHEFF	1039
730630	SHEFF	978
730630	SHEFF	964
730630	SHEFF	1194
730731	SHEFF	884
730831	SHEFF	920
730831	SHEFF	509
730831	SHEFF	480
730831	SHEFF	731
730831	SHEFF	336
730831	SHEFF	233
730831	SHEFF	1344

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.ERR1      U.N.C. DECOMMISSIONING DATA SYSTEM - DISPOSAL COSTS      D1126
* (----- BURIAL CHARGES $ -----) (----- TRANSPORTATION CHARGES $ -----) (----- CONTAINER CHARGES $ -----)
* SHIP .SHIP .DISP . . . . . SHIP . . . . . NO .CONT .CONT .
* DATE .NUM .SITE .BASIC .CURIE .SP/HND .OTHER .TOTAL .COMPANY . BASIC .PERMIT .OTHER .TOTAL . CONTAINER TYPE .CONT .COST .RENT .
=====
730831      SHEFF      933
730831      SHEFF      952
730930      SHEFF      480
731031      SHEFF      1008
731130      SHEFF      840
731130      SHEFF      2448
731130      SHEFF      1306
731130      SHEFF      1673
731130      SHEFF      1563
731130      SHEFF      1682
731130      SHEFF      925
731130      SHEFF      854
731231      SHEFF      616
731231      SHEFF      1939
731231      SHEFF      1539
731231      SHEFF      1416
731231      SHEFF      1888
731231      SHEFF      1416
731231      SHEFF      2136
731231      SHEFF      2248
731231      SHEFF      1942
740930      NUC ENG      550
740930      NUC ENG      550
741030      NUC ENG      550
741030      NUC ENG      550
741030      NUC ENG      550
741031      BIG LAKE      43
741130      BIG LAKE      245
741231      NUC ENG      550
741231      NUC ENG      1100
741231      NUC ENG      550
741231      NUC ENG      550
741231      NUC ENG      550
741231      BIG LAKE      18
720431      NUC ENG      1100
720228      BIG LAKE      18
720430      NUC ENG      1100
720731      NUC ENG      550
720831      BURL NORTH      5741
720831      TRI STATE      942
720831      TRI STATE      942
720831      TRI STATE      1299
720831      TRI STATE      942
720831      TRI STATE      942
720831      TRI STATE      -690
720831      NUC ENG      550
720930      TRI STATE      1878
720930      TRI STATE      1429
720930      NUC ENG      550
721031      TRI STATE      1299
721031      TRI STATE      1933

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.ERR1      U.N.C. DECOMMISSIONING DATA SYSTEM - DISPOSAL COSTS      D1126
* SHIP .SHIP .DISP .      .BURIAL CHARGES $ -----) (----- TRANSPORTATION CHARGES $ -----) (----- CONTAINER CHARGES $ -----)
* DATE .NUM .SITE .BASIC .CURIE .SP/HND.OTHER .TOTAL .COMPANY .BASIC .PERMIT .OTHER .TOTAL .CONTAINER TYPE .NO .CONT .CONT .
*****
721031      NUC ENG      60
721130      NUC ENG      550
721130      TRI STATE    849
721130      TRI STATE    1927
721231      TRI STATE    1878
730131      NUC ENG      550
730131      NUC ENG      550
730131      BURL NORTH    2407
730228      NUC ENG      550
730228      NUC ENG      550
730228      TRI STATE    988
730228      TRI STATE    1249
730228      TRI STATE    1249
730228      TRI STATE    643
730228      TRI STATE    849
730228      TRI STATE    -942
730331      TRI STATE    1299
730331      NUC ENG      550
730430      TRI STATE    992
730430      TRI STATE    1299
730430      TRI STATE    1413
730430      NUC ENG      550
730531      TRI STATE    1179
730531      NUC ENG      550
730531      NUC ENG      550
730630      TRI STATE    1299
730630      TRI STATE    1299
730630      NUC ENG      550
730630      NUC ENG      550
730731      NUC ENG      550
730831      EL MURPHY    821
730831      EL MURPHY    790
730831      EL MURPHY    814
730831      NUC ENG      550
730831      NUC ENG      550
730831      NUC ENG      550
730831      NUC ENG      550
730831      NUC ENG      550
730831      TRI STATE    1299
730831      TRI STATE    1299
730930      NUC ENG      550
731031      NUC ENG      550
731130      EL MURPHY    440
731130      EL MURPHY    454
731130      EL MURPHY    454
731130      EL MURPHY    469
731130      EL MURPHY    890
731130      TRI STATE    645
731130      TRI STATE    645
731130      TRI STATE    400
731130      NUC ENG      1300

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.ERR1      U.N.C. DECOMMISSIONING DATA SYSTEM - DISPOSAL COSTS      D1126
* SHIP .SHIP .DISP .BURIAL CHARGES $ .TRANSPORTATION CHARGES $ .CONTAINER CHARGES $
* DATE .NUM .SITE .BASIC .CURIE .SP/HND.OTHER .TOTAL .COMPANY .BASIC .PERMIT .OTHER .TOTAL .CONTAINER TYPE .CONT .COST .RFT
=====
734130      NUC ENG      1300
734130      NUC ENG      1300
734130      NUC ENG      2200
734130      NUC ENG      2200
734130      NUC ENG      3300
734130      NUC ENG      2200
734130      NUC ENG      1300
734234      EL MURPHY      479
734234      NUC ENG      1300
734234      NUC ENG      2600
734234      NUC ENG      2600
734234      NUC ENG      1950
734234      NUC ENG      2600
734234      NUC ENG      1950
734234      NUC ENG      2600
734234      NUC ENG      1950
734234      NUC ENG      2600
734234      NUC ENG      2600
710930      55 GALLON DRUMS      1276
710930      BARREL      239 1733
711034      55 GALLON DRUMS      240 1740
711034      PLYWOOD BOXES      5840
711034      PACKING CRATE      4 119
711234      PLYWOOD BOXES      990
720134      M-3 BINS      30 4826
720228      55 GALLON DRUMS      206 1524
720534      LINERS      20652
720734      LINERS      3650
720930      LINERS      26783
720930      BC-48-220      3300
720930      LL-50-50-100      3000
720930      STEEL LINERS      5 17900
721034      LL-50-100      1300
721024      LINER & LID      4155
721130      LL-50-100      2600
721234      LINERS      2600
730228      LL-50-100      2400
730238      BOTTOM VES. HD. CGHT      9860
730238      LINERS      4 4780
730238      55 GALLON DRUMS      252 1850
730334      CASK      1430
730430      LINERS      3065
730630      DISPOSAL BINS      100 30265
730630      CONCRETE LINERS      6 9300
730734      LL-50-100      8100
730834      SPECIAL PLYWOOD BOX      12 1137
731034      M-3 BINS      30300
731130      M-3 BINS      13950
731130      SHIPPING CRATES      40 3774
731234      M-3 BINS      50 14750
731234      SHIPPING CRATES      30 2831

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16. ABSTRACT (200 words or less) <p>This report summarizes information concerning the decommissioning of the Elk River Reactor. Decommissioning data from available documents were input into a computerized data-handling system in a manner that permits specific information to be readily retrieved. The information is in a form that assists the Nuclear Regulatory Commission in its assessment of decommissioning alternatives and ALARA methods for future decommissioning projects. Samples of computer reports are included in the report. Decommissioning of other reactors, including NRC reference decommissioning studies, will be described in similar reports.</p>					
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