

SRP INTEGRATED  
DATA MANAGEMENT SYSTEM  
SYSTEMS DESCRIPTION

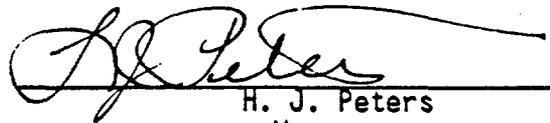
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Revision

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## 1 INTRODUCTION

The Salt Repository Project (SRP) must have a comprehensive technical information support system to meet the documentation requirements for licensing, for interactions with the Salt States, the NRC, and the public, and as an ongoing working tool to support technical efforts throughout the life of the program. The technical information support system must address project needs for technical data (raw/unanalyzed data, analyzed/accepted data, baselined data), project records, technical literature, and other support documentation. These data and records must be collected, organized, extracted, indexed, stored, and be readily retrievable by a diverse group of users. The procedures and methods of data handling must meet the strictest requirements of Quality Assurance and Configuration Management. All data contained in the system must be technically defensible. The scope of the technical information support system must cover the full range of information requirements of the SRP for which reliable and defensible data must be available as described in DOE documents, NRC requirements, EPA standards, and others.

### 1.1 PURPOSE AND OBJECTIVES

The purpose of this document is to describe an information system, the Integrated Data Management System (IDMS), which when fully in place will fulfill the needs of the SRP. Included in the document is an overview of the existing system and a description of those modules or capabilities of the contemplated total support system.

This document can serve as a guide to SRP participants and other users of the system; however, a separate users' manual will be available to provide explicit instructions on accessing the various modules of the system. An operations manual will also be accomplished to support the needs of computer systems personnel.

### 1.2 FORMAT AND CONTENT

This document presents in the sections that follow, a description of the technical data bases making up the software system modules, followed by a

discussion of the configuration management and control necessary to establish and maintain the validity of the data in the system. Methods of acquiring information follow discussion of configuration management.

## 2 SYSTEM DESCRIPTION

The Integrated Data Management System (IDMS) is a comprehensive system designed to meet the total data and information needs of the SRP. The system is based on a broad-spectrum data management plan which considers not only present data and information needs of the project, but also looks at possible long-term needs and provides the flexibility to deal with these needs when they occur. The plan assures that all the needs of the project are addressed in a logical and consistent manner, that unnecessary redundancy is eliminated, and that all the components fit together to comprise an integrated, effective, and efficient system.

### 2.1 GENERAL CAPABILITIES

The system provides for the acquisition and capturing of data, the validation of selected data items, the storage of data in data bases that can be accessed for on-line queries, standard report generation, and the creation of ad hoc reports. The types of data in the system include numerical values, textual descriptions and comments which support the numerical values, and document references. The numerical data exist at several levels of detail and degrees of accessibility. Summarized and frequently needed data are stored in data bases so that on-line access is possible. More detailed data are kept on magnetic tapes, microform, or in hardcopy reports. For these data the system provides indexes, references, and library facilities.

Both the data input and on-line access are controlled through a combination of manual procedures and computer processes. Similar procedures and processes exist for the control and validation of the actual data.

### 2.2 SYSTEM COMPONENTS

The IDMS is composed of a number of computerized data bases with their associated hardware, software, and procedures; several libraries and manual file systems for housing the hardcopy and microform/microfilm documents which backup the computerized data bases; and support services such as indexing, data input, and microfilming/microfiching. All of the components are

documented and operate under established procedures and/or instructions to assure consistency and conformance to DOE and BPMD Quality Assurance requirements. Each of these systems and functions is described in the following sections.

## 2.3 COMPONENT SYSTEMS SUMMARIES

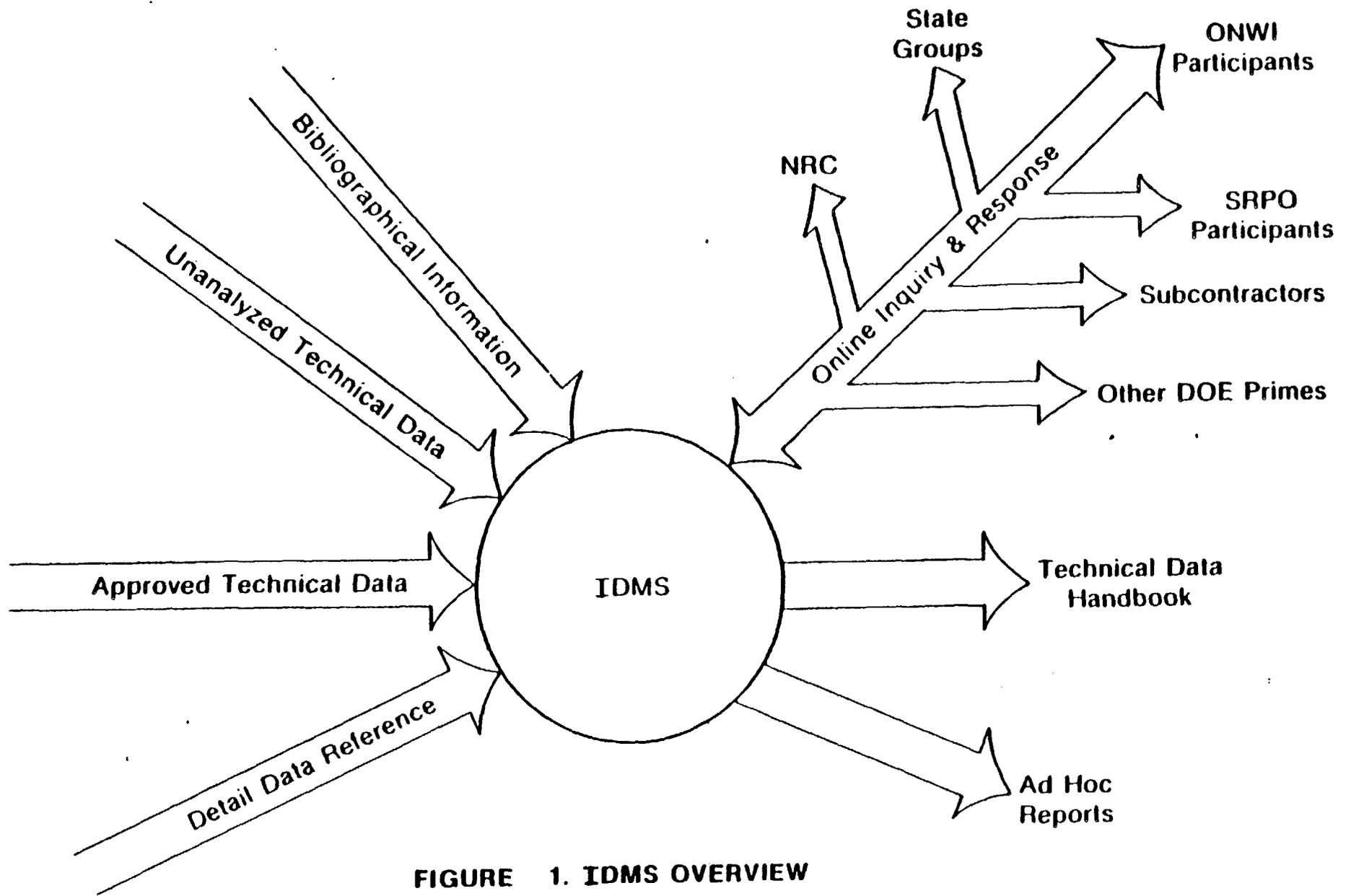
A number of system components currently exist or are in the process of development which provide storage, retrieval, information handling and reporting for the various technical functions and disciplines involved in the Salt Repository Project. Some of the information is used in the form of numerical values and items; other information is used in the form of titles, abstracts or text. Figure 1 depicts the IDMS interactions later discussed in this document.

### 2.3.1 Salt Repository Project/Technical Data Base (SRP/TDB)

This component of the IDMS provides for on-line access to the numerical data, prints the SRP technical data handbook, and provides for ad-hoc reports. This data base is in the process of evolution. At this time it contains geologic data from about 200 well completion reports, environmental data, and some engineering data. When fully operational, this data base will provide the values and descriptive information needed to support site characterization and to meet other licensing requirements.

#### 2.3.1.1 Salt Repository Project/Technical Data Base Information Sheet

Hardware:	VAX
Software:	BASIS
Status:	Early operational since 1983. New areas and additional data in existing areas being added.
No. of Records:	400
Retrieves:	Specific values and data
Scope:	Current - borehole summaries, environmental data, engineering data, geologic data.



Planned - Entire spectrum of geologic waste isolation in salt.

The data base is designed to provide technically defensible data that meets the licensing requirements of the NRC.

Overlap: No direct overlap.

Backup Copy: Data sheets are stored in hard copy and will be microfilmed as they accumulate. Computer Center has backup tape of data base. Documents from which data are derived are indexed and retrievable from RIS.

Output Products: Data, reports, handbook, printouts of searches.

Procedures for Access: (1) Battelle and DOE staff contact the ONWI Systems Project office.

(2) Public and other government agencies contact DOE/SRPO Project Office Manager (614) 424-5916.

Documentation: DDL  
Thesaurus  
Users' Manual (In preparation)  
Pocket Guide (In preparation)  
Data Element Dictionary (Planned)  
Operational Manual (Planned)  
Functional Description

### 2.3.2 Records and Information System (RIS)

This system provides information and data backup for many of the other portions of the SRP IDMS. As of December 1, 1984, the RIS contained more than 115,000 records, including books, letters, memos, telexes, records of telephone calls, reports, papers, speeches, and others. These items are microfilmed or microfiched, indexed, abstracted and entered in a computerized data base. They can be retrieved by more than 30 data elements such as title, author, date, document type, etc.

The RIS is a free-text system which provides additional flexibility in retrieval strategy. The original source documents are stored as both hard copy and microform. The RIS can be used to locate a specific item (i.e., as a records management system), or to conduct literature searches of the 10,000 technical reports in its holdings on topics of interest.

Because the RIS essentially backs up many of the other components of the SRP IDMS, it is essential that the data and information contained therein be accurate. A number of COBOL programs have been written to provide for on-line validation during the data entry process; several data elements are thesaurus controlled; and a manual quality control function is carried out after data entry has been completed. All functions in the RIS processing cycle are performed according to written instructions/procedures to ensure consistency and conformity to BPMD/DOE quality assurance requirements. A better understanding of the RIS processing cycle can be gained by studying Figure 2 which shows the flow of material through the cycle.

#### 2.3.2.1 Records and Information System (RIS) Information Sheet

Hardware:	CDC CYBER
Software:	BASIS
Status:	Operational since 1980
No. of Records:	115,000 as of 12/1/84
Retrieves:	Bibliographic references. For technical reports, abstracts included. Can be searched by more than 30 data elements including author, receiver, subject, date, microfilm address, and others.
Scope:	This data base contains relevant project correspondence and report records (1978-present). It is designed to support all management and technical staff, to meet records management requirements, to provide literature search capabilities, and to support the technical data bases by providing backup documents. (See Figure 2)

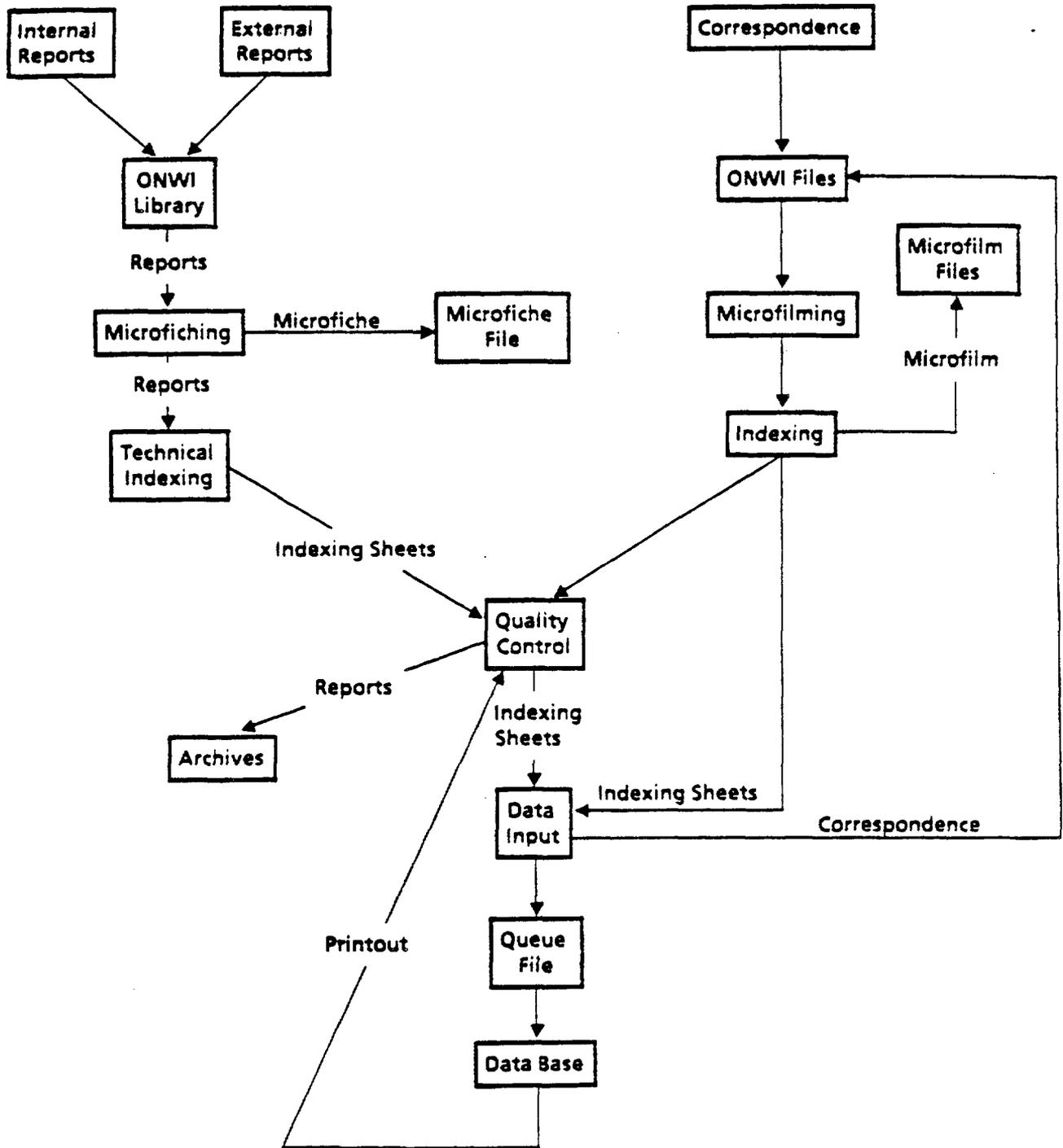


FIGURE 2. RIS PROCESSING CYCLE

Overlap: Contains some documents also in the RTPs but the functions are different, and it is also desirable to keep entire RTPs intact, which make this overlap acceptable.

Backup Copy: Microfilm/microfiche, plus hard copy in most cases.

Output Products: Bibliographies; indexes.

Procedures for Access: (1) Battelle and DOE staff contact BPMD Information Systems Services Section (ISS) manager.  
(2) Public, other government agencies contact DOE/SRPO Document Control (614) 424-5916.

Documentation: Data Element Dictionary (planned)  
Users' Manual (under revision)  
Pocket Guide (in preparation)  
DDL  
Operations Manual (planned)

#### 2.3.2.2 ONWI-200 - Bibliography of Published Reports of the Salt Repository Project

The Bibliography is produced from records stored in the Records and Information System (RIS) data base. Prior to publication the reports listed in ONWI-200 are announced in the Catalog (see 2.3.13).

#### 2.3.3 Records Turnover Package Data Base (RTP)

The Records Turnover Package (RTP) data base contains the documents generated during the life of a given contract or subcontract except for the official procurement documents. The packages vary in size from very small (five to ten documents) to very large (30,000 documents) and include those generated by DOE Prime Contractors, National Laboratories, ONWI and its subcontractors and other government agencies participating in the Salt Repository Project. Records are turned over at the completion of a contract or periodically during the contract, as specified for long term contracts.

The RTP is organized by packages and record types. Each package has one "Control" record which contains a unique identification code, the transmittal memorandum information (contract number, contractor name, title, etc.), contract start and end dates, subcontractors, and manager information. The remainder of the package is comprised of "Page" records. Each page record is a separate project document covering purchase orders, technical papers, memos, well logs, computer output, negatives, etc. Each page record contains the document title and document code. The document code, as in the RIS, provides a precise description of the document (incoming letter, manuscript, briefing package, cost analysis, etc.). Each page record is linked to the package control record by the unique identification code.

The RTP data base can be searched on all data elements. Data fields are all ranged, and text fields (title and document titles) are free text indexed. Contractor and subcontractor names are controlled with a company name thesaurus. Document code is also controlled with a thesaurus.

#### 2.3.3.1 Records Turnover Package (RTP) Information Sheet

Hardware:	CDC CYBER
Software:	BASIS
Status:	Operational since 1982
No. of Records:	165,000 as of 12/1/84
Retrieves:	Bibliographic records. Can be searched by package ID, contractor/subcontractor, subject, other.
Scope:	The data base contains project documents turned over to Battelle by subcontractors, DOE prime contractors, National Laboratories, other agencies, consultants (1978-present). The system is designed to store and retrieve the records and compilations of data used to produce reports. They may include field notebooks, maps, photographs, seismic data, drill logs, calculations, and the like.
Overlap:	Contains some records also in the RIS. The RTP data base contains entire records packages intact.

RIS records are random in order. The overlap is acceptable.

Backup Copy: Microfilm/photographic negatives, slides, magnetic tapes, and other media.

Output Products: Bibliographies; indexes; identification of specific packages and specific documents within a package.

Procedures for Access: (1) Battelle and DOE staff contact Information Systems Services Section (ISS) Manager.  
(2) Public, other government agencies contact DOE/SRPO Document Control (614) 424-5916.

Documentation: Users' Manual (in preparation)  
Pocket Guide (in preparation)  
DDL  
Data Element Dictionary (planned)  
Operations Manual (planned)

#### 2.3.4 Commitment/Action Item Tracking System (C/ATS)

The Commitment/Action Item Tracking System data base contains the records of the action items and commitments received by ONWI from DOE/SRPO which require a written response. Additionally C/ATS is used to track the status of action items between ONWI and its subcontractors.

The data base can be accessed on-line and also via hardcopy reports.

##### 2.3.4.1 Commitment/Action Item Tracking System (C/ATS) Information Sheet

Hardware: CDC CYBER

Software: Query Update

Status: Operational since 1981

Number of Records: 2,500 as of 12/1/84

Retrieves: Records of action items and commitments between ONWI and DOE and ONWI and its subcontractors

Scope: Tracks action items and commitments received by ONWI from DOE and those between ONWI and its subcontractors.

Overlap: RIS in the case of completed items but provides status on those items in the processing cycle.

Backup Copy: A hardcopy file is maintained of all items. Completed items are in the RIS and on microfilm.

Output Products: Status reports to ONWI and DOE on incomplete items.

Procedures for Access: (1) Battelle and DOE staff contact BPMD Information Systems Services (ISS) Section Manager.  
(2) Public and other government agencies contact DOE/SRPO Document Control.

Documentation: DDL  
User's Desk Manual

### 2.3.5 Mail Log (ML)

The Mail Log data base is an internal administrative tool used to manage incoming and outgoing correspondence for ONWI and other BPMD projects. The system provides a means of accountability for all mail received and dispatched.

The data base is closely allied with the RIS and the Mail Log records are utilized to build complete RIS records. The Mail Log is accessible on-line and can be used to generate daily hardcopy logs as required.

#### 2.3.5.1 Mail Log (ML) Information Sheet

Hardware: CDC CYBER

Software: BASIS

Status: Operational since May 1984

Number of Records: 14,000 as of 12/1/84

Retrieves: Records of incoming and outgoing correspondence and other project-related mail.

Scope: Tracks incoming and outgoing project mail received and sent by ONWI and other BPMD projects. Assigns unique number and date of transaction in addition to descriptive information for each item.

Overlap: RIS to some extent. Initial mail log entry is enhanced to build complete RIS record.

Backup Copy: RIS and microfilm copies are stored

Output Products: Daily mail log report

Procedure for Access: Internal administrative tool. No plans to make publicly available. Contract BPMD Information Systems Services (ISS) Manager for information.

Documentation: DDL  
Mail Operations Desk Manual

### 2.3.6 Detail Data References (DDR)

Structure and content of this data base are in the formative stages. It is contemplated that there will be a need for storage and retrieval of large amounts of supporting numerical data which, although not appropriately contained in the SRP-TBD may be of interest in reviewing rationale for establishment of parameters, ranges of data, etc., which have been stored in SRP/TDB. This data base will support the management of the many magnetic tapes containing numerical data or other data submittals not in machine-readable form. It is anticipated that the DDR will contain a descriptive record for each submittal of data as follows:

- Data Set Name
- Brief Description of Data
- Author and Contractor Name
- Location
- Format
- Quantity and Quality of Data
- ONWI Contact.

The data base will also contain a record of analyses performed on the data. System implementation will be accomplished in a manner that permits easy on-line access to information stored in the data base. Procedural and user guide documentation will be provided.

## 2.3.6.1 Detail Data References (DDR) Information Sheet

Hardware:	To be determined
Software:	To be determined
Status:	Under development
No. of Records:	
Retrieves:	
Scope:	Management of magnetic tapes and other sources of large amounts of numerical data that are not appropriate for the SRP/TDB. The data base will contain the following types of information: <ul style="list-style-type: none"> <li>Data Set Name</li> <li>Brief Description of Data</li> <li>Author and Contractor Name</li> <li>Location</li> <li>Format</li> <li>Quantity and Quality of Data</li> <li>ONWI Contract</li> </ul>
Overlap:	None
Backup:	Magnetic Tapes
Output Products:	
Procedures for Access:	
Documentation:	

2.3.7 Sample Inventory Management System (SIMS)

As a part of the geologic exploration phase of ONWI, core, water, and soil samples taken from borings and wells drilled in the various areas being explored are taken. These samples are analyzed for various scientific purposes and the results become part of the Technical Data Base. The remaining inventory of such samples are stored under controlled conditions in facilities at Columbus, Ohio, and other designated locations. The record of the inventory of these samples is stored in software which includes locations and at what depth the samples were obtained, tests performed on the samples, dates or whatever pertinent qualifying information are required to appropriately describe the samples.

### 2.3.7.1 Sample Inventory Management System (SIMS) Information Sheet

Hardware: VAX  
 Software: DM  
 Status: Early operational.  
 No. of Records: 150 as of 12/1/84  
 Retrieves: Data  
 Scope: Will provide inventory of core, water and soil samples. Curator's Office will use to inventory samples, allocate and track samples which have been sent out for analysis.  
 Overlap: No Direct Overlap.  
 Backup Copy: Data sheets will be stored in hard copy and microfilmed as they accumulate.  
 Output Products: Inventories; status of samples; status of requests for samples.  
 Procedures for Access: (1) Battelle and DOE staff contact ONWI Manager for Site or Curator's office.  
 (2) Public and other government agencies contact SRPO Manager.  
 Documentation: DDL  
 User's Manual (Planned)  
 Pocket Guide (Planned)  
 Data Element Dictionary (planned)  
 Operations Manual (planned)  
 Functional Description

### 2.3.8 Engineering Data Release System (EDRS)

This system is the planning stage and will address the identification and handling of engineering specifications, drawings, and other formally controlled design data to a designated configuration. The system and its procedures must operate as a part of the ONWI Configuration Control Process. It will provide custodial care and protection for master documents released

into the system by the project office and make official distribution of the latest revision of these documents. In this way, only the correct configuration is made available to project participants.

A controlled facility is currently planned which can accomplish document processing including reproduction, classification, storage and distribution. Provisions for handling engineering documentation for the entire SRP are contemplated which will result in a central repository at ONWI for documentation including material generated and released by Battelle, its subcontractors, other DOE Prime Contractors, National Laboratories and other government agencies.

It is anticipated that a number of satellite data "cribs" will support a central facility so that information is readily available to the various project participants at convenient locations.

#### 2.3.8.1 Engineering Data Release System (EDRS) Information Sheet

Hardware:	To Be Determined
Software:	To Be Determined
Status:	In planning stage.
No. of Items:	Technical Records Centers are planned as satellite operations for program participant convenience.
Retrieves:	Documents
Services:	Planned - the EDRS will house the final copies of drawings, specifications, and other design data that are under change control. The latest revisions will be maintained for official release to project participants. Various Technical Centers will house working files and operate as satellites to the EDRS.
Scope:	Planned - EDRS will contain a complete collection of project related engineering data which are under change control.
Overlap:	A/E System by necessity; other DOE Primes, Agencies as directed.
Backup Copy:	Aperture cards (microfilm)

Output Products:	Copies of drawings, specifications, and other data.
Procedures for Access:	Terminal Access to Configuration Breakdowns for reference. Documents available at central facilities or satellites.
Documentation:	Users' Manual (planned) Pocket Guide (planned)
Procedures:	(Planned)

### 2.3.9 Reference Tracking System (RTS)

As its name implies, this system is a computerized list of references to documents which support the ONWI technical activities. The particular documents included in this system are those which are available in hard copy in the Controlled Technical Reference Center (formerly Controlled Access Library). Utilizing on-line terminal access, one can search on author, title, subject, etc., to find a required reference. If available, one must visit the Center for the actual document or request a copy of selected material. Controlled access documents may not be taken from the Center.

#### 2.3.9.1 Reference Tracking System (RTS) Information Sheet

Hardware:	CDC CYBER
Software:	BASIS
Status:	Operational since January, 1984.
Number of Records:	2,300 as of 12/1/84
Retrieves:	Bibliographic record of documents in the Controlled Technical Reference Center
Scope:	Tracks reports referenced in EAs, SCPs, and other selected documents as they are processed.
Overlap:	RIS, in the case of documents which have completed the processing cycle, but provides access to document references as soon as they are identified.

Backup Copy: All documents entered in this system are held in the Controlled Technical Reference Center when they have completed the processing cycle. They are also microfiched and indexed into the RIS.

Output Products: Lists of reports cited in a particular EA or SCP. In addition, the system can produce lists of documents which are on order, or those which must be routed through the clearance process.

Procedures for Access: (1) Battelle and DOE staff contact Information Systems Services Section (ISS) Manager.  
(2) Public, other government agencies contact DOE/SRPO Document Control.

Documentation: DDL  
User's Manual (in preparation)  
Pocket Guide (in preparation)  
Data Element Dictionary  
Operations Manual (planned)

### 2.3.10 Document Comments Tracking and Response System (DCTRS)

During the process of establishing a suitable repository site, Site Characterization, Plans, Environmental Assessments, and related documents are generated and must be reviewed by various groups and individuals in accordance with provisions of federal laws, rules and regulations. DCTRS tracks the evolution of these documents through the comment and approval process, preserving the comments and responses to the commenters.

#### 2.3.10.1 Document Comments Tracking and Response System (DCTRS) Information Sheet

Hardware: VAX  
Software: BASIS  
Status: Test stage  
No. of Records: Test data as of 12/1/84  
Retrieves: Comments, responses, commenter's name (document reference) dates, subjects (issues), and other.

Scope: The data base is designed to track comments and responses for EAs, SCPs, institutional questions and answers, and future documents. It addresses the issue, the question and the response. The system has "word processor" data entry capability.

Overlap: None

Backup Copy: Computer Center has backup tape

Output Products: Comments and their responses, most often asked questions and their answers. System has various output formats.

Procedures for Access: Contact project manager of document of interest.

Documentation: DDL  
Data Element Dictionary  
Users' Manual  
Functional description (draft available)  
Operations Manual  
Functional Description

### 2.3.11 Contract Data Management System (CDMS)

This system identifies and tracks status of deliverable contract data. Those data include subcontract deliverables to ONWI as well as deliverable data from ONWI to SRPO. The system will have the capability to track appropriate data from DOE Prime Contractors and other designated sources if required. Status information is obtained directly from the Project Management System which provides milestone identification and schedule data. Information from this system feeds the Catalog system described in Section 2.3.13.

#### 2.3.11.1 Contract Data Management System (CDMS) Information Sheet

Hardware: VAX

Software: DATATRIEVE

Status: In development. Prototype being tested.

No. of Records: 200 for test purposes.

Retrieves: Status of deliverables as they move through the system.

Scope: All deliverables listed in approved work packages as milestones in PMS.

Overlap: In part with the Catalog, PMS, RIS.

Backup Copy: Computer Center maintains tape.

Output Products: Lists of deliverables; delinquency reports; status reports.

Procedures for Access: To be determined.

Documentation: User's Manual (planned)  
Pocket Guide (planned)

### 2.3.12 Report Clearance System (RCS)

Some of the technical program information finds its way into various reports, lectures or public information use requiring formal procedural clearance in accordance with DOE and/or Battelle policy. A formal system of report clearance is utilized which tracks each document through the administrative and patent review and clearance process. As a part of the process, required technical reviews and sign-offs assure that only authorized technical information consistent with or contained in the IDMS is utilized for public purposes.

#### 2.3.12.1 Report Clearance System (RCS) Information Sheet

Hardware: CDC

Software: Query Update

Status: Operational since 1979

No. of Records: 1973 as of 12/1/84

Retrieves: Bibliographic records of reports in clearance (those which have been cleared).

Scope: SRP reports which require patent and policy clearance before printing and distribution.

Overlap: PMS/Catalog System; Contract Data Management System (milestone data only).

Backup Copy:	Hard copy printout of contents of the data base.
Output Products:	Lists of approved/unapproved reports; KWOC (keyword out of context) indexes.
Procedures for Access:	Internal administrative tool. No plans to make publicly available. Contact BPMD Information Systems Services (ISS) Manager for information.
Documentation:	User's Manual DDL Pocket Guide (none planned) Functional Description

### 2.3.13 Catalog System (Catalog)

This system is used to announce forthcoming technical documents which will be distributed to the public when they are published. These Catalog records are contained in a data base which can be accessed on-line; they are also available via the printed Catalog. Currently the role of this data base is under study. It may be integrated with the Contract Data Management System (CDMS), which is discussed below. The Catalog will continue to be printed as an output product of the integrated CDMS.

#### 2.3.13.1 Catalog System (Catalog) Information Sheet

Hardware:	CDC CYBER
Software:	BASIS
Status:	Operational since 1983--Revision being studied
No. of Records:	317 as of 12/1/84
Retrieves:	Records of forthcoming reports of the SRP
Scope:	An inventory of the unanalyzed data reports and the technical reports listed as milestones in project work packages which will be published and distributed to the public.
Overlap:	Overlaps the Contract Data Management System and the PMS to some extent. Has a specific purpose of announcing forthcoming reports to the public. Generates the <u>Catalog</u> pages.

Backup Copy: Hard copy Catalog which is issued six times/year.  
 Output Products: References to forthcoming reports: Catalog pages  
 Procedures for Access: (1) Battelle and DOE staff contact BPMD  
 Information Systems Services (ISS) Section  
 Manager  
 (2) All requesters of hard copy of the Catalog  
 contact SRPO Document Control at (614)  
 424-5916.

Documentation: Users' Manual (in preparation)  
 Pocket Guide  
 DDL  
 Data Element Dictionary (planned)  
 Operations Manual (planned)

#### 2.3.14 Site Characterization Plan Issues Management System (SCP/IMS)

This system, which is in the planning stage, will address the SCP data needs through the issues hierarchy and through the provider hierarchy as well as correlating them with the respective SCP sections.

##### 2.3.14.1 Site Characterization Plan Issues Management System (SCP/IMS) Information Sheet

Hardware: To be determined  
 Software: To be determined  
 Status: In the planning stage.

#### 2.4 DOCUMENT CUSTODY AND SUPPORT

In addition to software systems, facility and hard copy documentation support is also a required component of the overall integrated data management process. Some of this support has been mentioned in Section 2.3 as a part of the software systems descriptions.

The data and information contained in the computerized data bases discussed above are backed up by hard copy and microfiche/microfilm of the

source documents from which the data were taken. These materials are stored in controlled document facilities and microfiche/microfilm files. In addition, hard copies of the correspondence indexed into the RIS are stored in a manual central file.

#### 2.4.1 Controlled Technical Reference Center (CTRC)

The Controlled Technical Reference Center is made up of two principal components; one of which provides loaned copies of documents to project participants on an approved chargeout basis, and the other which maintains custody of the reference documents in a controlled library environment whereby researchers must use the documents in the Center. The controlled access portion of the Center contains documents which may be one-of-a-kind references or they may be documents which are in the process of evolution and must be maintained under change control to assure that latest available data are utilized in the reference research process.

The CTRC is supported by two types of service presented on the following information sheets describing the loanable documents and the controlled or nonloanable documents.

##### 2.4.1.1 BPMD Reference Documents - Available for Loan

Hardware:	Library books have been processed into the On-line Computer Library Center (OCLC) computer.
Software:	Same as above.
No. of Books:	4,000 as of 12/1/84
Services:	Reference and information services; literature searches; RIS searches; document acquisition; indexing; report processing for RIS; EA and SCP document acquisition.
Scope:	Acquires technical books for use of staff and DOE scientists in areas which are relevant to waste isolation.
Overlap:	None with Battelle Columbus Division (BCD); supplements BCD technical libraries. Some overlap with Controlled Technical Reference Center.

Backup Copy: Reports are microfiched to provide master copy.  
 Output Products: Literature searches, books and journals, reports, information services, responses to requests from staff, DOE, the public.  
 Procedure for Access: Telephone (614) 424-7697, letter, or personal visit  
 Documentation: Users' Manual (Written procedures available)  
 Pocket Guide (None planned)

#### 2.4.1.2 Controlled Access Documents - Available at the Center

Hardware: CDC CYBER (Although the Controlled Technical Reference Center is not an automated data base, its holdings are indexed into the RIS).  
 Software: BASIS  
 Status: Operational since April 1984  
 No. of Items: 2,300 as of 12/1/84.  
 Services: Hard copy and microfiche of documents referenced in EAs, SCPs, and Technical Data Base available for use in the Library. Indexes to documents available via RIS, and the Reference Tracking System.  
 Scope: Current - documents referenced in the EAs  
 Planned - documents referenced in SCPs and other key documents.  
 Overlap: Some overlap with BPMD TIC but the need for controlled access justifies the duplication.  
 Backup Copy: A microfiche copy is available for most items (copyrighted texts, handbooks, etc., are not filmed).  
 Output Products: Indexes, printouts of contents of library, microfiche copies of items. Hard copy available for library use only.  
 Procedure for Access: Call BPMD TIC at (614) 424-7697.

Documentation:                   Users' Manual (None planned. Procedures for use available.) Pocket Guide (None planned.)

#### 2.4.2 Controlled Document Center (CDC)

This facility contains master hard copies of 30 controlled documents which are currently stored in the Center along with approved distribution lists for control of the various documents. It is planned that the Center will be expanded to provide the required facility to house the engineering documents vault supporting the formal Engineering Data Release System described in Section 2.3.8 above.

##### 2.4.2.1 Controlled Document Center (CDC) Information Sheet

Hardware:                   Xerox 860 Word Processing

Status:                    Major procedural documents are currently either now in custody or are in the process of being transferred to the center. Controlled distribution lists for captive documents are being maintained on disk files.

Retrieves:                Revisions, new issues

No. of Documents:        Thirty

Services:                 The CDC provides preparation/distribution services to owners of manuals which are under change control, maintains records of holders of documents and receipts returned by holders for new issue/revisions to manuals, and maintains the master copy.

Scope:                    The CDC will maintain master copies, records, and distribution lists on documents under change control for BPMD projects.

Overlap:                 None.

Backup Copy:             Historical copies of manuals are microfilmed.

Output Products:         Revisions, new issues of documents.

Procedures for Access: Call Document Control Manager (614) 424-5141 for information.

Documentation: Users' Manual (N/A. Procedures are available.)  
Pocket Guide (N/A)

### 3 DATA CONFIGURATION MANAGEMENT AND CONTROL

Certain elements of the technical information system must be placed under change control. These fall into two broad categories.

In the first category are the baseline data. For this category, the organizational responsibility for change control rests with the ONWI Configuration Control Board (CCB). The Configuration Management Office (CMO) has responsibility for change control of new and revised data and processing changes through the CCB.

The second category of items to be maintained under change control is the software, facilities and data processing procedures associated with the system. The Information Management Systems Department has responsibility for configuration management and control of this category.

The areas of responsibility for both the project and the Information Management Systems Department are:

<u>IMSD</u>	<u>ONWI/CMO</u>
o DDL	o Change Control of Data
o Data Element Dictionary	o Technical Reviews and Sign-off
o Procedures for Data Processing	o New Data Selection and Extraction
o Passwords	o Revising Data
o Facilities	

#### 3.1 VALIDATION AND CONTROL IN THE TECHNICAL DATA BASES

The data in the technical data bases are being used for engineering and other technical purposes; therefore, it is essential that these data be reliable, properly indexed, and accurately keyed. To meet these requirements a number of validation and control measures have been established. Data selection for the technical data bases is carried out by members of the ONWI technical staff in the particular discipline involved, i.e., geologic data are selected by geologists who can attest to the technical validity, and environmental data are selected by environmental scientists. These same persons also approve the structure of new sections in the technical data base in their areas of expertise, or changes in existing sections. A written

procedure establishes how this is accomplished, and what type of approval cycle is required. The approved data then are indexed and formatted for data entry accordingly. Approval signatures are required prior to processing the sheets through data entry. A similar procedure must be followed for making changes in existing data in the data bases. Where this occurs, the rationale for the change must also be given. All data selection/change and data entry sheets are retained and are microfilmed periodically to provide an audit trail for data, selection of data and/or changes. After data entry, the entered data are compared visually with the data entry sheets and any necessary corrections are made before the data are transferred from the queue file to the data base. Certain validation and control features are provided in the system by Cobol programs written for this purpose. Data elements which are thesaurus-controlled will be rejected by the system if the data entered do not conform exactly to the thesaurus entry. Thesaurus maintenance, thus, is an important activity.

#### 4 METHODS OF ACCESS OF INFORMATION SYSTEMS AND SERVICES

The Salt Repository Project IDMS provides for the capturing of data, the validation of selected data items, the storing of data in data bases that can be accessed for on-line queries, standard report generation, and the creation of ad hoc reports. The types of data in the system include numerical values, textual descriptions and comments which support the numerical values, and document references. The numerical data exist at several levels of detail and degrees of accessibility. Summarized and frequently needed data are kept in a form that provides for on-line access. More detailed data are kept on magnetic tapes, microfiche, or in hard copy reports. For this data the system provides indexes, references and library facilities. Access to this data is controlled through a system of procedures and software access controls which serve to provide required security.

All system software components (except for the OCLC Library program) run on computers operated by the Battelle Columbus Laboratories Computer Center. Except for the SRP/TDB, the host computer is a Control Data Corporation CYBER. For the SRP/TDB, a Digital Equipment Corporation (DEC) VAX is the host. All of these computers are accessed through a data communications switch. A user first connects to the data switch, then to the computer of choice. The data switch can be accessed by dial-up telephone lines, by TYMNET (a long distance data communication network), or by direct wired data lines. Any ASCII data terminal can be used for access. However, some special output displays are available on DEC VT100 compatible terminals. Printed output is available via printers connected to terminals, line printers tied to the computers and a laser printer. Access to the system is controlled by use of user names and passwords, which are required both to access the computers and to access the data bases. Figure 3 shows the typical information flow for the four principal software system components.

A summary of user access methods to information in the data base is presented in the following paragraphs. These methods include terminal access to data bases, training on use of data bases, users' manuals, and library services. This section is not intended to take the place of users' manuals, which will be issued as separate documents.

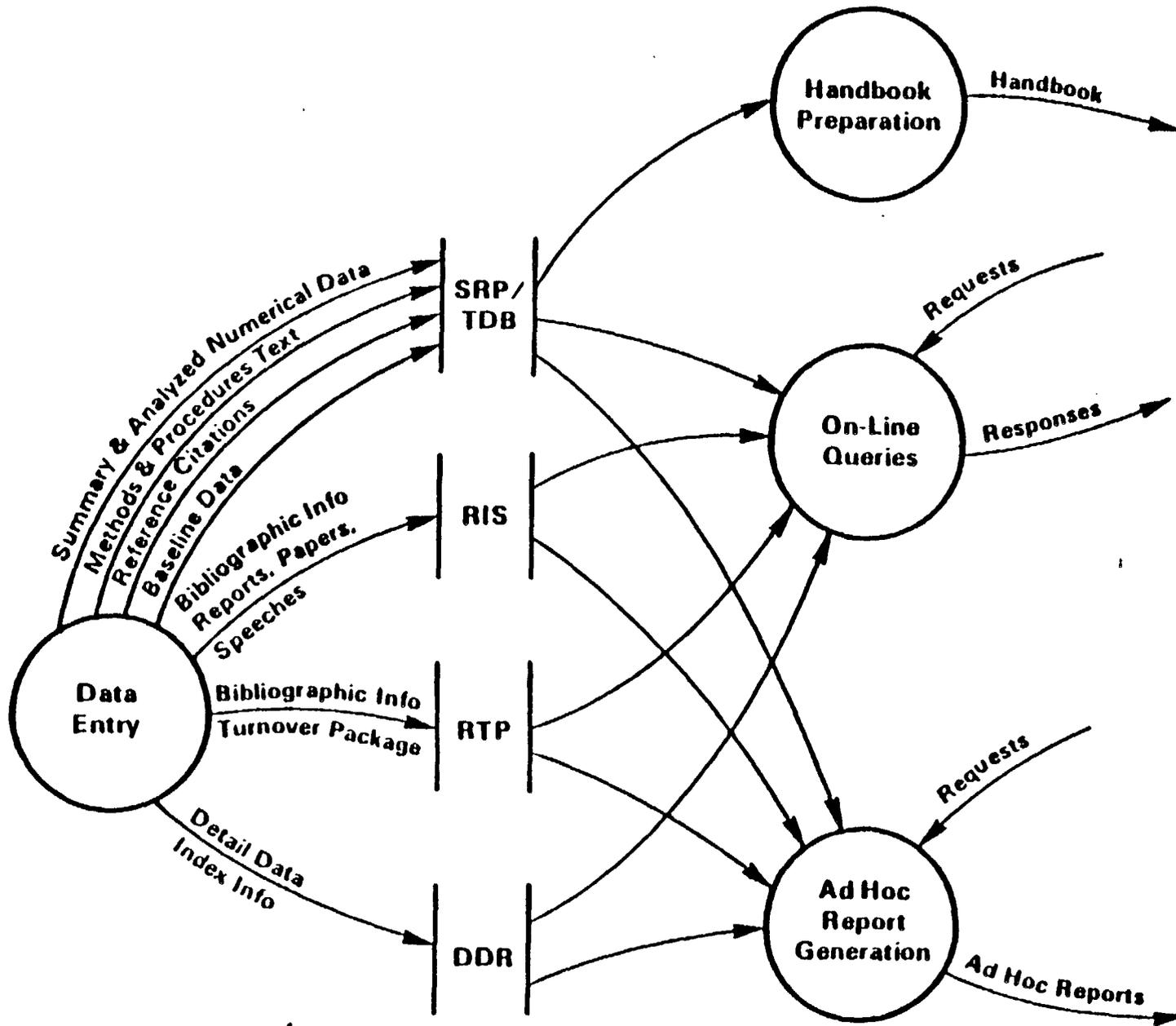


FIGURE 3. LEVEL 1 IDMS DATA FLOW DIAGRAM

#### 4.1 TERMINAL ACCESS

Direct access to the SRP computerized data bases is provided to users in accordance with DOE/SRPO policy guidelines. Users should contact DOE/SRPO Document Control to establish the need for terminal access. Please call (614) 424-5916.

#### 4.2 BRIEFINGS AND DEMONSTRATIONS

Visitors to SRPO and ONWI can receive briefings on the computerized systems and other services and request demonstrations of terminal usage. Workshops can be scheduled when a group of users require intensive training on terminal usage. Call DOE/SRPO Document Control (614) 424-5916.

#### 4.3 USERS' MANUALS

Users' manuals and pocket guides on the computerized systems are being revised and are scheduled for reissue by March 1, 1985.

#### 4.4 PASSWORDS

Access to the computerized systems requires usernames and passwords. Authorized users are issued these code words for their use only.

#### 4.5 CONTROLLED TECHNICAL REFERENCE CENTER AND CONTROLLED DOCUMENT CENTER

The CTCRC is open during normal working hours Monday through Friday from 8 a.m. to 5 p.m. Special arrangements must be made for special access at other times. No access to these centers is available in the absence of the center custodian.

## 5 PROJECT MANAGEMENT SYSTEM (PMS) RELATIONSHIP TO IDMS

The BPMD Project Management System is included here because of its close interrelationship with IDMS.

ONWI Project Management utilizes the formally validated BPMD Project Management System as its primary management tool with which to manage the overall project. PMS is a formal system consisting of policies, procedures, software and related hardware used for the planning, organization and control of all project effort. Application of PMS to the project management process generates certain cost, schedule and scope of work data which must be integral with applicable components of IDMS. For example, the PMS contains certain milestone information which is used in the Contract Data Management System, the Reports Clearance System and the Catalog. Control procedures and software programs within IDMS assure that such data are commonly shared where required. Baseline control of the data within PMS is governed by strict change control procedures as validated in accordance with DOE 2250.1, Cost and Schedule Control Systems Criteria for Contract Performance Measurement.

### 5.1 PROJECT MANAGEMENT SYSTEM (PMS) INFORMATION SHEET

Hardware:	VAX
Software:	Fortran/Datatrieve/DM
Status:	Operational since 1982
Number of Records:	2,400 as of 12/1/84
Retrieves:	Cost/schedule/planning information
Scope:	Formal program management and program planning and control system used by BPMD for the management of formal projects
Overlap:	Contract Data Management System and <u>Catalog</u> to some extent
Backup Copy:	Hardcopy file and microfiche
Output Products:	Status reports on work packages, cost accounts, and first level work breakdown structure cost accounts, and various level 2 of the work breakdown structure. Special reports as required.

- Procedures for Access:
- (1) Battelle staff contact Manager, Project Management Systems Department
  - (2) DOE/SRPO contact Manager, Information Systems Department

- Documentation:
- DDL
  - User's Guide
  - Pocket Guide
  - User's Manual

## 6 ACRONYMS AND ABBREVIATIONS

A/E	Architect/Engineer
AICT	Action Item/Commitment Tracking System
API	American Petroleum Institute
ASTM	American Society for Testing Materials
AWS	American Welding Society
BASIS	Battelle Software Package for Information Storage and Retrieval
BPMD	Battelle Project Management Division
CDC	Controlled Document Center
CDC CYBER	Control Data Corporation Computer
CDMS	Contract Data Management System
CCB	Configuration Control Board
CTRC	Controlled Technical Reference Center
DCTRS	Document Comment and Tracking Response System
DDL	Data Definition Language
DDR	Detail Data References
DM	Battelle Relational Software Package for Database Management
EA	Environmental Assessment
EDRS	Engineering Data Release System
HLW	High Level Waste
IDMS	Integrated Data Management System
IMSD	Information Management Systems Department
ONWI	Office of Nuclear Waste Isolation
ONWI/CMO	Office of Nuclear Waste Isolation/Configuration Management Office
PMS	Project Management System
RIS	Records and Information System
RTP	Records Turnover Package
RTS	Reference Tracking System
SCP	Site Characterization Plan
SCP/IMS	Site Characterization Plan Issues Management System
SIMS	Sample Inventory and Management System
SRP	Salt Repository Project
SRP/TDB	Salt Repository Project/Technical Data Base
TDB	Technical Data Base, see SRP/TDB
TIC	Technical Information Center
VAX	Digital Equipment Corporation Computer

## SURFACE BASED TEST PLAN (SBTP) AND ISSUES

### I. OVERVIEW

- GOAL, SOW, APPROACH, MANAGEMENT, QA SCHEDULE

### II. ESTABLISH AND MONITOR ENVIRONMENTAL BASELINE

- REGULATORY REQUIREMENTS FOR SITE CHARACTERIZATION (ENVIRONMENTAL PROTECTION)
- REGULATORY REQUIREMENTS FOR THE REPOSITORY (ENVIRONMENTAL PROTECTION, PRECLOSURE SAFETY)

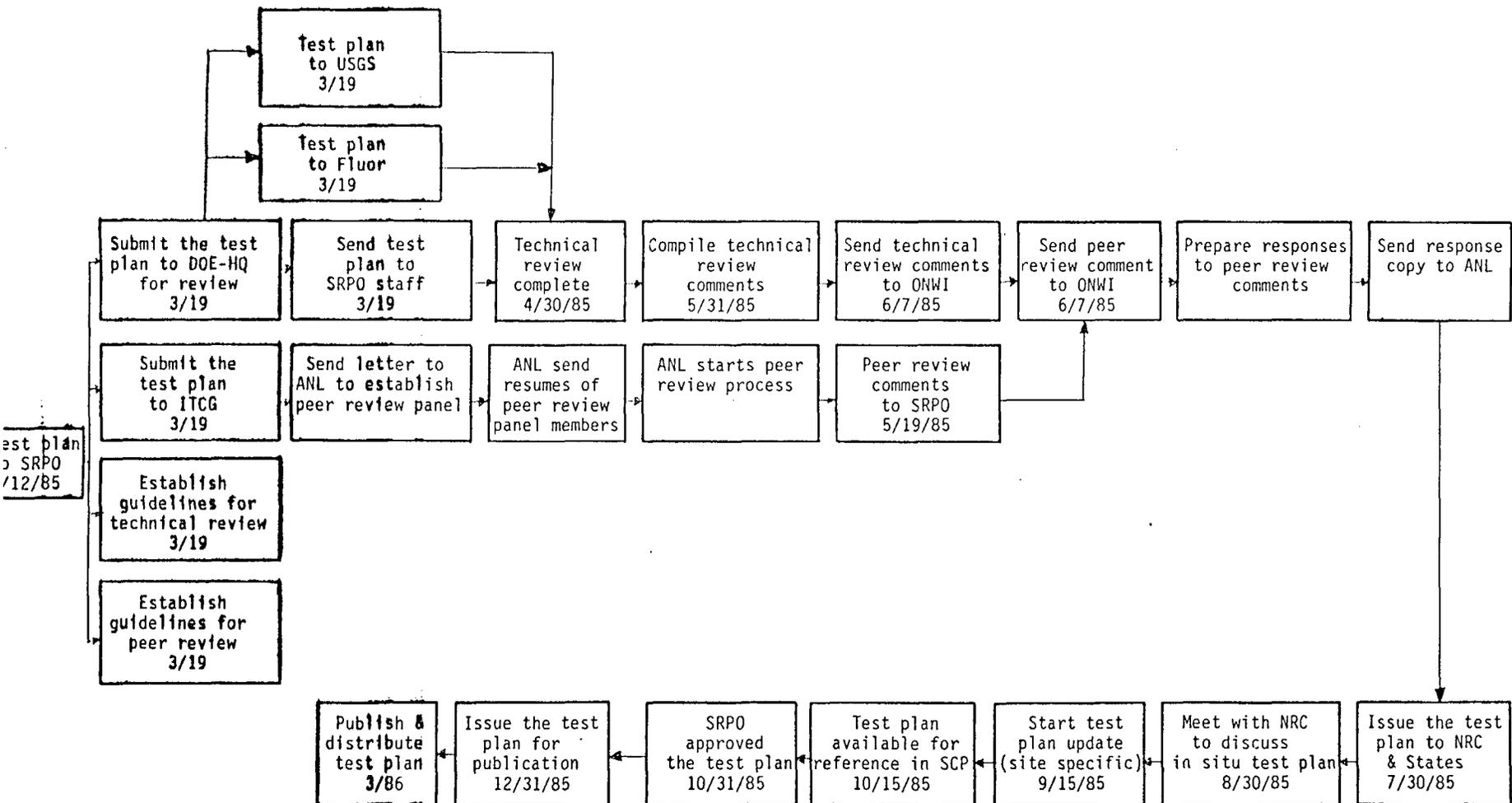
### III. OBTAIN DESIGN INFORMATION

- ESF DESIGN
- REPOSITORY DESIGN (PRECLOSURE SAFETY, CONSTRUCTION EASE AND COST)

### IV. SATISFY SITE CHARACTERIZATION ISSUES

- (POST-CLOSURE SAFETY, CONSTRUCTION EASE AND COST)

LOGIC FOR REVIEW OF IN SITU TEST PLAN FOR SALT REPOSITORY PROJECT



Attachment 12