**ENVIRONMENTAL IMPLEMENTATION PLAN -
ENVIRONMENTAL COMPLIANCE TRACKING AND DATA
MANAGEMENT**

by

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Chapter 14

Environmental Compliance Tracking and Data Management

Chapter was compiled and reviewed by Cheryl H. Story.

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Site Program Overview

Environmental projects, issues, and programs have become increasingly important to the Westinghouse Savannah River Company (WSRC) management and the Department of Energy (DOE). A compliance-tracking system has been developed to monitor environmental requirements and commitments because they have become increasingly complex and numerous.

An Environmental Data Management (EDM) steering committee was formed in October 1987 to develop computer system solutions to environmental needs. The committee's main objective is to coordinate, within SRS divisions, the separate efforts that have been or are being developed to meet regulatory requirements and specific programmatic goals.

The Environmental and Graphical Information Systems (E&GIS) Program was recently developed to establish a more formal organizational structure and enhance the coordination of geographical information systems (GIS) and environmental data management (EDM) activities at SRS. The general strategy of the program is to establish a coordination focal point for GIS and EDM activities, to provide for the integration of the several environmental and graphical information systems which exist mostly in standalone arrangements, and to guide the development of data management and geographical information applications in order to achieve alignment with Site computing architecture and standards. The E&GIS Program will enhance the Site's ability to respond to data requirements in support of new missions, changing directives, and increasing regulatory requirements.

Policy

Enhance the coordination of GIS and FDM activities at SRS to provide for the integration of the several environmental and graphical information systems in order to respond to data requirements in support of new missions, changing directives, and increasing regulatory requirements..

Background

It is WSRC's policy to comply with all environmental laws, regulations, and DOE orders. WSRC also is committed to developing a sitewide database-management system for environmental programs and information. Environmental data generated at SRS has always been managed in accordance with the needs of the environmental community. Over the last 15 years, however, interest in environmental data has increased mainly because of the need to demonstrate compliance with regulatory statutes related to quality of the environment.

Existing Conditions

The EDM steering committee was formed in October 1987 to develop an integrated environmental-information system. Before the committee was established, individual departments and groups were taking those steps necessary to meet regulatory requirements and their own group objectives. There was not always time to develop standards, and in many cases, the environmental staff controlled environmental information.

As the number of environmental regulations increased and as individual database applications grew, the EDM steering committee began taking necessary steps to better manage environmental information.

In September 1988, the committee purchased a MicroVax 3500 and chose Oracle as the relational database standard. A plan was developed and implemented that addressed immediate data-management needs and that was compatible with other long-term environmental-data systems being developed for the site. This effort addressed applications including the National Pollutant Discharge Elimination System's (NPDES) discharge monitoring, well construction, SARA chemical information/inventory, and the Waste Information Tracking System. The MicroVax 3500 later was upgraded to a MicroVax 3800, and in October 1990, a Vax 6410 computer system was purchased. These systems serve as production systems for environmental activities accessible to site professionals via the site's local area network.

The nine major subject areas under the EDM umbrella are surface water, air, groundwater, ecology, solid/hazardous waste, audits/appraisals, chemical information/inventory, administration, and environmental education. These areas generally cover several aspects of the environmental activities which use or generate data that must be managed appropriately.

Databases applications that have been or are being developed include air emissions sources, chemical information/inventory, groundwater well construction, surface water outfalls, and waste stream information tracking. GIS data layers of interest being developed can be categorized as environmental monitoring, demography, facilities, infrastructure, cultural, biota, hydrography, hypsography, geology/seismology, cadastral, and land base reference systems.

The E&GIS Program was recently developed to establish a more formal organizational structure and enhance the coordination of GIS and EDM activities at SRS.

The site has implemented a tracking system, Issues Management Processing Action and Commitment Tracking System (IMPACTS), to consolidate existing systems.

Objectives

The following are the objectives that support developing and implementing environmental regulatory-compliance tracking and data management systems:

- *monitor programs* - monitor the progress of site environmental programs to ensure that regulatory and DOE commitments are met
- *DOE orders* - review, modify, and apply to particular situations, as needed, and accept all DOE environmental orders
- Environmental regulations - review, assess, and disseminate information to SRS organizations on changes applicable to SRS operations
- *Environmental Database Management* - integrate environmental-information systems to define data consistently, to allow data sharing among organizations, and to deliver an easy-to-use system to SRS professionals
- Environmental and Graphical Information Systems (E&GIS) Program - implement to establish a more formal organizational structure and enhance the coordination of GIS and EDM activities at SRS.

Strategy

The strategy for achieving the objectives of the Environmental Compliance Tracking and Data Management Program includes the following:

- review and verify status of all DOE-environmental orders
- initiate acceptance of all DOE-environmental orders
- maintain and improve EPD compliance-tracking system
- review changes to environmental regulations
- implement integrated system
- monitor and evaluate the integrated system
- consistently define data about environmental activities
- allow data sharing across organizational boundaries
- deliver easy-to-use system tools to SRS professionals

Figure 14-1. Environmental Compliance Tracking and Data Management Program Strategy

Implementation

The SRS has implemented the following programs to meet the objectives of the Environmental Compliance Tracking and Data Management Program:

- Compliance/Commitment Tracking System (page 14-9)
- Environmental Regulatory Tracking (page 14-10)
- Review of DOE Orders (page 14-11)
- Data Management (see page 14-12)

Compliance/Commitment Tracking System

(Compiled and reviewed by Tim R. Pfefferkorn)

Site Program Overview

Currently, there are a number of tracking systems for monitoring environmental compliance and commitments within WSRC and within the Environmental Protection Department (EPD). The site has implemented a new tracking system, Issues Management Processing Action and Commitment Tracking System (IMPACTS), to consolidate existing systems. During FY 92, EPD rolled some of its current tracking systems into this new system. Efforts to expand and enhance this coordinated tracking system/method will be continued in FY 93 and FY 94.

Justification

It is WSRC's policy to comply with all laws, regulations, and DOE orders. To ensure continued compliance, an improved management tool/method will be developed and implemented.

The current tracking system meets the Monitor Programs objectives.

Organizational Responsibilities Summary

EPD will be the leading organization with the responsibility to review and implement current environmental-tracking systems. These efforts will be coordinated with the Directives Management Section and the EPD Task Management Team.

Site Procedures and Documents

A sitewide commitment-management procedure, MRP 3.12, is located in procedure manual, *WSRC-1B*.

EPD Procedures DPM 505 and DPM 506 are located in *Procedures Manual Q-1-1-1..*

An EPD document, Commitment Tracking Compendium, was published February 25, 1993, to provide an overview of EPD tracking systems.

Programs

EPD currently is using IMPACTS to track compliance and DOE commitments. A VAX-based tracking system also is being used to track Environmental Audit and Appraisal findings. This system is called the Audit/Appraisal Tracking System (AATS). There are plans to convert the AATS system into IMPACTS, thus, providing more consistency in the commitment-tracking program. These systems will be used to provide management and employees with reports to ensure timely closure of commitments and findings.

Environmental Regulatory Tracking

(Compiled and reviewed by Phil Miller)

Site Program Overview

EPD Environmental Regulatory Tracker reviews the Federal Register and the South Carolina State Register for regulatory agency notices, proposed rules, and final rules that may be applicable or relevant to SRS operations. Regulatory information is reviewed, assessed, and disseminated to SRS organizations and personnel by EPD.

Justification

DOE and the managing contractor, WSRC, are committed to operating SRS in a manner that protects the public health and safety and the environment. Compliance with environmental regulations and DOE orders relating to environmental protection is an important part of SRS's program.

Organization Responsibilities Summary

EPD maintains the lead responsibility for reviewing environmentally-related regulations and disseminating regulatory information to serve SRS organizations and personnel.

Site Procedures and Documents

EPD Procedure DPM 330, Environmental Regulatory Tracking, in Procedures Manual Q-1-1-1., provides program information and responsibilities.

Comprehensive Compliance Assurance Review Report # 07-01-93-0013 on the Regulatory Commitment Tracking Program documents an external program review and is listed as a reference.

Draft document, DOE/EPD Business Book, includes a section on regulatory tracking. The section describes the information flow process for review and analysis of environmental rulemaking activities of Federal and State regulatory agencies for potential impacts to SRS operations.

Programs

EPD Environmental Regulatory Tracker issues timely regulatory information to SRS environmental representatives and others via electronic communication of the "Environmental Regulatory Developments".

Review of DOE Orders

(Compiled and reviewed by David L. Lester)

Site Program Overview

DOE establishes policies and guidelines for implementing various laws and programs through an order mechanism within the DOE complex. DOE orders apply to contractor-program implementation and facility operation. Those orders that affect the environment are referenced in various sections of this plan. Some DOE environmental orders are being revised due to changes in the laws.

EPD has reviewed DOE orders affecting the environment and developed DOE directives and compliance plans for DOE Orders 5400.1, 5400.3, 5400.4, 5400.5, 5440.1C, 5480.4, and 5482.1B.

Justification

DOE environmental orders set policies and guidelines for implementing applicable environmental laws and DOE programs. DOE orders apply to WSRC program implementation and facility operation.

The existing program to review and implement DOE orders meets DOE orders objectives.

Organization Responsibilities Summary

EPD maintains the lead responsibility for reviewing environmentally-related DOE orders and for implementing those orders. EPD coordinates with the General Counsel Office to review incorporating documentation on implementing orders.

Site Procedures and Documents

Program guidance is provided in WSRC-IM-91-66, *Strategic Plan for Environmental Compliance at the Savannah River Site (SRS)*.

Programs

EPD is the leading organization for reviewing and implementing DOE environmental orders. A program flowchart is presented in WSRC-IM-91-66, *Strategic Plan for Environmental Compliance at the Savannah River Site (SRS)*.

Data Management

(Compiled and reviewed by Cheryl H. Story)

Site Program Overview

The goal is to develop an integrated environmental information system for SRS. The E&GIS Program recently developed to establish a more formal organizational structure and to enhance the coordination of GIS and EDM activities at SRS is an important milestone in achieving this site goal.. This extensive effort requires communication and coordination among several groups onsite. It is necessary for management to commit resources necessary to develop and maintain sitewide environmental systems.

Justification

It is WSRC's policy to achieve established environmental goals. An environmental data management system will be developed and implemented to ensure these goals are attained.

The E&GIS Program will integrate both attribute and spatial data such that a unified view of Site environmental and engineering data is established. This will enhance the Site's ability to respond quickly to requests for accurate and timely data to support new missions, changing directives, and increasing regulatory requirements.

Organization Responsibilities Summary

A formalized matrix structure has been established which provides the framework for managing the several tasks and functions required to conduct GIS and EDM business. Programmatic responsibilities within the matrix include coordination, operations analysis, systems integration, hardware and software maintenance, and end user training. Key personnel within six different divisions of SRS have accepted responsibility to provide these needed support services. The Environmental Protection Department of the ESH&QA Division will serve as the focal point of accountability to coordinate the E&GIS Program.

Site Procedures and Documents

E&GIS Program is described in the SRS Environmental and Graphical Information Systems Program Plan, WSRC-RP-93-747.

EDM is managed as a matrix organization, as described in the *SRS Environmental Data Management Plan*, EDM, WSRC-RP-91-179. Another document, *Environmental Bases of the Savannah River Site 1990*, lists environmental reference information (documents, files, papers, letters, etc.) which is available onsite.

Programs

The EDM Steering Committee has identified nine environmental areas needing assistance with data management. They are administration, air, audit and quality assurance (QA), chemical information/inventory, ecology, environmental education, groundwater, solid/hazardous waste, and surface water. Identifying existing environmental databases, integrating them into a friendly environment, and developing new applications will take place as a result of this effort.

Environmental professionals recognize that it is time to define standards and centralize the management of environmental data across the site. In today's regulatory and litigation climate, the site must have knowledge of significant issues as early as possible. The complexity of environmental regulations and reporting has reached the point where even teams of employees cannot easily keep up with the thousands of regulations and handle endless compliance requirements.

Over the course of time, two special interest groups formed in an effort to manage the large and complex data sets being generated by various organizations. Environmental attribute data was managed by the Environmental Data Management Steering Committee, while spatially related environmental and engineering data was being driven by the GIS Task Group. The primary mission of the E&GIS Program is to integrate these two data types (attribute and spatial) such that a unified view of Site environmental and engineering data is established. The Site's ability to respond quickly to requests for accurate and timely data requires that this information be managed consistently. Achieving data consistency requires coordination, communication, and a vision of data from a site-optimum versus a division or department-optimum perspective. The E&GIS Program will facilitate this view of data and will allow the effective prioritization of resources such that the Site will be in a position to respond to data requirements in support of new missions, changing directives, and increasing regulatory requirements.

A Global Positioning System (GPS) base station has been installed at the Savannah River Forest Station and the positioning information will be made available to SRS organizations. The GPS base station will provide the ability to better establish locations using satellite technology. Having a good reference system to establish spatial coordinates is essential for gathering useful data. Operation of the GPS base station was implemented in September 1993.

Environmental Databases

There are many environmental databases that currently exist or are being developed outside the EDM effort. Brief descriptions of accomplishments in the various subject areas are listed below. The EDM vision is to integrate these applications where feasible, keeping in mind that data and applications can physically reside and be managed anywhere within the matrix of organizations.

Groundwater - The Well Construction Data System provides the capability for accessing well information such as location, elevation, drilling, geophysical logging, installation, annular materials, development, and abandonment for all wells at SRS.

The system will automate the generation of the water-well record and will allow user-generated queries for custom reporting.

Surface Water - The National Pollutant Discharge Elimination System (NPDES) Oracle database application was designed to allow access to information relating to the Site's permitted outfalls (~75). An outfall is a physical location where treated wastewater or storm water is sampled and tested to ensure that the wastewater is within specific effluent limits as set forth by the Environmental Protection Agency and the South Carolina Department of Health and Environmental Control. The primary function of the NPDES system is the generation of the Discharge Monitoring Report (DMR). The DMR is a summary report that presents monthly water quality test results in relation to the permit requirements for each outfall. General information such as custodian, location, effluent sources, and receiving waters is included. Through the use of PCLink file transfer software and Filemaker for the MacIntosh, the DMR forms and data are printed by an Apple laser printer.

Chemical Information/Inventory - The Chemical Information and Inventory System (CIIS) is an application that stores chemical information in a centralized database that is shared across organizational boundaries. CIIS tracks the location of chemicals and trade-name products, provides information about hazardous chemicals and products, produces inventories for a particular product, describes the link between a product and its Material Safety Data Sheet, and generates inventory reports necessary for meeting environmental and occupational health regulations. The OSHA Hazard Communication Standard requires employers to obtain and have available in the workplace Material Safety Data Sheets (MSDS) for all hazardous materials that are being used. Approximately 14,000 MSDS were consolidated into one master file. A relational database was designed using selected information such as CAS number, manufacturer, form, pH, etc. from each sheet in the master file.

Solid/Hazardous Waste - The Waste Information Tracking System serves as the site central repository of waste information, providing cradle to grave waste tracking of all low level, hazardous, mixed, and Transuranic (TRU) wastes. The information contained in WITS assists Waste Management in maintaining compliance with DOE Order 5820.2A, the Federal Resource Conservation and Recovery Act (RCRA), and the South Carolina Department of Health and Environmental Control (SCDHEC) regulations. The initial milestone of WITS was to track all information necessary for the operation of the new burial ground. WITS provides on-line capability for entering waste characterization information, waste storage and burial information, waste generator data, ETWAF data, and HP radiation survey results.

Air - This system contains information about emission sources across SRS relevant to completing an application for an air operating permit. The air system will support requests for data in response to regulatory requirements, will maintain a database of air emission sources, emission points, control devices, and related equipment, materials, and pollutants. In addition, the system will provide air data to the air dispersion modeling software system, and will produce the biennial South Carolina Department of Health and Environmental Control Point Source Data Report.

One-Year Road Map

Develop Funding Arrangements for the E&GIS Program	12/93
Develop and issue E&GIS definition document	6/94

Five-Year Road Map

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