

## EFCOG Best Practice #105

**Title:** Improving Access to and Control of Database Information

**Facility:** Salt Waste Processing Facility/Savannah River Site

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**Brief Description of Best Practice:** When a project is starting up, it is an ideal time to incorporate one of the new "Enterprise" computer based systems to integrate data for ease of retrieval. When that does not occur early in design (or later in operation) alternate methods of linking multiple datasets together are needed which are low cost, quick to implement and minimize impacts for those entering the data. The Salt Waste Processing Facility (SWPF) Project chose to implement a SQL™ based reporting tool that links over 50 databases and spreadsheets, and displays the information on a Project SharePoint™ Web site.

**Why the best practice was used:** Many sites and projects do not adopt an enterprise computer based system early and have a need to integrate multiple data sets. These data sets often exist in individual (or group) controlled ACCESS™ databases or EXCEL™ spreadsheets. Projects usually need something effective, but lower cost, which does not disrupt data entry and control. Consolidating data into one database is not only costly, but also removes ownership of the data, making it difficult to control the data input. The SWPF project needed to develop an enterprise-level database solution which would provide the existing multiple engineering database information and functionality for all team members, including Client (Department of Energy) who needed increased system/data access and improved search/sort capability. This had to be done with minimum software and hardware changes and minimal down time to data users. This was needed to improve configuration control and access to data from a wide group of data users with multiple technical backgrounds.

**What are the benefits of the best practice:** The use of the SQL reporting tool has allowed the SWPF Project to link over 50 databases and spreadsheets and display the information on the Project SharePoint™ Web site. The data is more accurate (updated each night) and reduces tendency for duplicating information between data systems.

**What problems/issues were associated with the best practice:** Initially some groups were unwilling or uncomfortable to share information as they were concerned that they would lose control of their data or that restrictions would limit their ability to effectively change and update their data. Getting staff to use a new system, which requires some discipline in naming conventions of key (cross cutting) fields is always a challenge.

**How the success of the Best Practice was measured:** Initially the SQL system linked 36 separate databases with 480 tables, and duplicated existing reports. These reports had been manually generated; some taking hours per week for individuals to generate and quickly became outdated. This was done over a 4 month period; improvements for the staff who controlled the data often happened very quickly (reducing manual activities) reducing resistance to sharing the data. This time was also used to clean up data (e.g. making linking fields such as 'procurement number' with consistent format). Once the first reports were available, working meetings were held to demonstrate functionality using real data. Within 5 days of the first meeting, a detailed SQL report was available for Construction and Engineering which could provide rapid access to procurement, engineering, Quality Assurance and document control information and could be sorted in multiple ways and cross-referenced via report hyperlinks. Staff could start using the data within minutes of being shown the link. Success has been measured by the expanded use of this (within 6 months of the initial 'launch', 53 separate SQL reports are now in use on the Project, and the number is growing each week) and the number of groups that use these (integration,

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procurement, operations, engineering, construction, QA) as well as feedback on improved data access and timeliness.

**Description of process experience using the Best Practice:** Prior to starting this activity, the SWPF Corporate Information Services staff completed a task analysis and comparison analysis which summarized the SWPF project needs and constraints and provided management with options to evaluate (including cost/schedule). This step was ~ 2 weeks long. Based on management review, a recommended option was selected which minimized staff and software costs. Software was procured (SQL Server – under \$10k for project), and two staff identified to work part time with data owners. This included one expert who worked remotely on the transition. A detailed chart was generated to define all data, identify data duplicates and linkages (example: procurement number, room number) and each database was analyzed and tested in an isolated environment prior to migration. In most cases, the technical leads agreed which database 'controlled' if there were conflicts. Occasionally, first line managers were contacted to resolve conflicts in data. Lead technical staff selected the priorities; occasionally Information Services or Configuration Management would select a priority to address specific customer needs. Each database was migrated one at a time after analysis and testing was complete. Reporting server and reports were implemented after the initial set of data was migrated. All 'back-end' data now resides in the SQL server. A series of small group meetings were held by department to demonstrate using real data and reports. An all-project message was issued approximately two weeks after the small group meetings to communicate information on the existing reports and to describe process for setting up additional reports. Demand is high enough that management meets weekly to prioritize the order of adding additional reports, as well as training additional staff on supporting report generation. A variety of report types, from simple status, to complex Key Performance charts to very large construction data reports are now in use.

**ISMS:** Perform Work within Controls