

# **PROJECT # 01.016 – TASK 1: COMPARISON OF LEGAL REPORTING REQUIREMENTS TO EXISTING ENVIRONMENTAL DATA SETS**

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## **INTRODUCTION**

All Federal government agencies and organizations are required to comply with environmental laws and regulations. Military organizations have policies to comply with these laws and regulations by integrating environmental considerations into military operations and training. The objective of Project 01.016 is to review the reports required under the environmental Clean Air Act (CAA) and Superfund Amendments and Reauthorization Act (SARA) and develop a data structure to facilitate production of these reports. This document presents the findings of Task 1, which includes the following components:

- A review of the legal reporting requirements under the CAA and SARA Title III;
- An assessment of the capability of current MCAS Cherry Point and MCB Lejeune SDSFIEE/FMSFIE data sets to meet those requirements;
- An analysis of what may be missing to support compliance with the regulations; and
- Recommendations of what should be added to comply with the legal reporting requirements.

In this task, each requirement was determined to be either suitable (database-appropriate) or unsuitable to be managed by a database recordkeeping system.

## **CONCLUSIONS AND RECOMMENDATIONS**

The most appropriate and cost effective means of meeting the CAA and SARA Title III legal reporting requirements at MCAS Cherry Point and MCB Lejeune will involve several systems. Ideally, a document management system can be used to manage the actual legal report in an electronic format. The underlying data and analysis content of the report generally will be managed in an electronic recordkeeping system. In the short term (2-3 years), it is also expected that traditional paper recording (e.g., log books, strip charts, etc.) will be necessary.

The current SDSFIE/FMSFIE systems are not appropriate for managing the CAA and SARA Title III requirements and do not satisfy the legal reporting requirements. Although the existing R-EDMS system does (or can) effectively manage most of the database-appropriate recordkeeping requirements, this system is based on dated, unsupported technology and needs to be replaced.

There is no significant difference between the CAA and SARA Title III recordkeeping requirements. Although there are significant differences in report formats, a single database structure will meet both regulations' recordkeeping requirements.

It is recommended that this project be continued with the model development as scoped in Task 2, preparation of a SDSFIE/FMSFIE data model. This single model will provide recordkeeping and reporting functionality to satisfy legal requirements and serve as a means for resolution between geospatial features and regulated items. The model can be used as an initial design and development point for either future implementation or as a gauge for software product evaluation.

## **ANALYSIS**

Our analysis shows that CAA and SARA Title III have nearly identical generic compliance and data management requirements that drive the legal reporting requirements, including:

- Recordkeeping of time-related measures and events as related to lists of items.
- A nominal amount of data processing to interpret the time-related records such as material in inventory, emitted, or used as related to items and aggregated for the site.

- Recordkeeping of multiple lists of semi-static data used in the interpretive data processing (such as chemicals/materials and their properties, emission factors, TRI thresholds, MSDS mixture compositions, permit limitations [as measurements], etc.).
- Recordkeeping of time-related and event-related lists of activities (compliance items).
- Processing of future activity records into completed compliance activity records (tasks completed).

The requirements summarized above are considered suitable to be efficiently and effectively managed with an information management system built on a relational database (i.e., database-appropriate).

As the SDSFIE/FMSFIE systems do not provide quality data management functionality, most of the database-appropriate requirements are currently managed with R-EDMS; detailed analyses are provided in Table 1 (SARA) and Table 2 (CAA). R-EDMS is a 15-year-old technology that is no longer supported and lacks interconnectivity with modern databases and web applications. R-EDMS reporting styles cannot provide the period rolling sums (i.e., 12 month rolling sums of emissions or fuel use) useful to the CAA and SARA Title III reporting requirements, and the R-EDMS data entry screens are difficult to navigate and use for annual updating. R-EDMS is neither user nor administrator friendly, and thus, relatively expensive to maintain and service.

A significant number of requirements are not database-appropriate. Generally, requirements not suited to database management include: 1) one-time initiation activities, 2) the regulated entity must prepare documentation for public submittal or availability, such as an emergency response plan or an MSDS, or 3) the regulated entity must maintain certificates provided by a third party (e.g., fuel oil vendor). Although certain elements of these requirements may be appropriate for database recording (such as the sulfur content reported on a fuel oil vendor's certificate), the complete requirement narrative is not suitable to be managed in a database.

There is a significant quantity of compliance requirements for the CAA.<sup>1</sup> This report focuses on the monitoring, recordkeeping, testing, and reporting needs put forth under Title V of the CAA as they apply to the annual compliance certification. To certify, the responsible official must determine that all Title V operating permit requirements were met during the year. Although the regulations define the general form and content of a Title V operating permit, a thorough permit analysis is more critical to meeting legal requirements than a regulatory analysis.

Once a Title V permit has been issued to a facility, the facility will be required to monitor, record, report, and frequently stack test air emission sources. The data gathered under these tasks is best managed by a database. The database will track emissions sources, stacks, emission rates & factors, emission basis, and other semi-static information. Additionally, the database will need to track event-driven information, gathered from testing and monitoring, such as fuel usage, product usage, and operation activity. Maintaining accurate records in a database would satisfy the recordkeeping permit requirement. Annually, the State requires reports on the sources, including an inventory of sources, stacks, and actual emissions from the previous calendar year. The database will facilitate the generation of these reports, and the reports will be located in an electronic document management system for storage and retrieval purposes.

In the following correlation tables, the notation “Y, metadata” indicates that a document management system would be appropriate and useful. In a document management system, documents could be managed in a database using metadata records (information to allow user identification and retrieval of the document) and presented to site personnel and the public via a website. Documents would be maintained in a common file format (e.g., MS Word, Adobe PDF, text, etc.) and available for printing or downloading.

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<sup>1</sup> The U.S. Environmental Protection Agency (EPA) has granted administrative rights to states with approved state implementation plans (SIP) to set forth compliance certification under the CAA. All aspects of the CAA Title requirements are effectively consolidated under the Title V section determining the issuance of a CAA Title V operating permit. This comparison of requirements to database functions uses the North Carolina Air Quality Rules.