**Consolidation and Centralization of Waste Operations
Business Systems – 12319**

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ABSTRACT

This abstract provides a comprehensive plan supporting the continued development and integration of all waste operations and waste management business systems. These include existing systems such as ATMS (Automated Transportation Management System), RadCalc, RFITS (Radio Frequency Identification Transportation System) Programs as well as incorporating key components of existing government developed waste management systems and COTS (Computer Off The Shelf) applications in order to deliver a truly integrated waste tracking and management business system. Some of these existing systems to be integrated include IWTS at Idaho National Lab, WIMS at Sandia National Lab and others. The aggregation of data and consolidation into a single comprehensive business system delivers best practices in lifecycle waste management processes to be delivered across the Department of Energy facilities. This concept exists to reduce operational costs to the federal government by combining key business systems into a centralized enterprise application following the methodology that as contractors change, the tools they use to manage DOE's assets do not. IWITS is one efficient representation of a sound architecture currently supporting multiple DOE sites from a waste management solution. The integration of ATMS, RadCalc and RFITS and the concept like IWITS into a single solution for DOE contractors will result in significant savings and increased efficiencies for DOE.

Building continuity and solving collective problems can only be achieved through mass collaboration, resulting in an online community that DOE contractors and subcontractors access common applications, allowing for the collection of business intelligence at an unprecedented level. This is a fundamental shift from a solely "for profit" business model to a "for purpose" business model. To the conventional-minded, putting values before profit is an unfamiliar and unnatural way for a contractor to operate – unless however; your objective is to build a strong, strategic alliance across the enterprise in order to execute an unprecedented change in waste management, transportation and logistical operations.

The success of such an initiative can be achieved by creating a responsible framework by enabling key individuals to "own" the sustainability of the program. This includes the strategic collaboration of responsible revolutionaries covering application developers, information owners and federal stakeholders to ensure compliance, security and risk management are "baked" into the process and sustainability is fostered through continued innovation by both technology and application functionality. This ensures that working software can adapt to changing

circumstances and is the principle measure of the success of the program.

The consolidation of waste management business systems must be achieved in order to realize efficiencies in information technology portfolio management, data integrity, business intelligence and the lifecycle management of hazardous materials within the DOE enterprise architecture. By identifying best practices across the enterprise and aggregating computational and application development resources, you can provide a unified, holistic solution serviceable from a single location while being accessed from anywhere. The business impact of integrating and delivering a unified solution would reduce costs to the Department of Energy within the first year of deployment with increased savings annually.

IMPROVEMENT OBJECTIVE

Currently, Waste Management business systems exist across the complex and are duplicated across contractors and more than often, do not exchange data elements between systems and/or contractors. This facilitates complexity in the accessibility and aggregation of data in addition to providing analytical statistics based on past performance to accurately project future costs and operational efficiencies. There are also hard costs associated with the duplication of technology and business systems that adhere to governing software quality assurance programs necessary to realize significant value of consolidated business systems. Different sites and contractors employ multiple formulas to base business decisions associated with the handling, packaging storage, transportation and disposal of radiological and hazardous materials. This has lead to increased costs associated with the movement of materials as well as fines resulting from discrepancies in formulas and calculations within waste management business systems.

Common cause analysis has identified three main areas impacting problems with DOE shipments - misclassification, documentation errors, and lack of recognition to identify critical steps to ship waste. Software quality assurance is the common issue – identified as an issue that is rampant throughout the complex. This is driving the needs for standardized systems enforcing standard formulas, waste volume calculations, density calculations and past performance. There is an unsustainable business cycle that has caused a dynamic shift in status quo within the Department of Energy. We continually ask how can we have had the same contractors doing the same work for decades and the Department of Energy is still on the General Accounting Office's and the Office of Management and Budget's high risk list.

The OMB has stated that contract administration and adequate resourcing of project and acquisition management personnel in the Field, where the "rubber meets the road" both in terms of project planning and delivery, remain areas where DOE EM's success at achieving its improvement initiatives is at risk. As contractors, we don't share lessons learned with each other often enough, our business systems are inefficient and ineffective. We have just recently completed some of the most aggressive and high risk D&D projects to date. As a result we should have compelling data points which should drive efficiencies in characterizing, handling,

packaging, transporting and burying or storing of materials. We should be able to instantly identify the most cost effective solution and execute in a manner commensurate with DOE's new mission.

Data is a living and dynamic asset which is in constant motion within the enterprise as it moves across business processes while traversing both cyber and proprietary boundaries. The outputs of these business processes feeds business intelligence, just as business intelligence should feed and challenge the business process. The last 30 years were focused on computer science; the next 20 years will focus on data science and identify how data can be used to operate in a lean and efficient environment.

Combined with fiscal uncertainties, reductions in human capital – driven by both budgetary constraints as well as the mass retirement of "baby boomers", there is an increasing gap of technically qualified and skilled employees which will not be integrated with the industry to execute effectively in a lean and dynamic environment. Now is the time for responsible revolutionaries to emerge and drive change within the Federal arena. Building continuity and solving collective problems can only be achieved through mass collaboration, resulting in an online community which allows the Department of Energy Contractors and Sub-contractors access to common applications, enabling the collection of business intelligence at an unprecedented level. Collectively, contractors should look for common goals within common objectives while working in a competitive environment.

DESCRIPTION AND BACKGROUND INFORMATION

As budgets decline, creativity and strategic decision making become key differentiators. Functional organizations within an enterprise must become more engaged in the mission and re-allocate or realign existing resources to provide a value added service. Costs associated with doing business are re-evaluated and innovative solutions become critical in an organizations' ability to maintain continuity and profitability while delivering quality work. Focusing on consolidating waste business systems within the Department of Energy has served as a road map for reducing the cost of doing business while achieving sustainability in human capital management.

The adoption of social media infrastructures has allowed subscribers to use different devices and computing platforms to "update" data to a centralized cloud service. With the significant advances in Information and Communications Technology (ICT) over the last half century, there is an increasingly perceived vision that computing will one day be the 5th utility (after water, electricity, gas, and telephony). This computing utility, like all other four existing utilities, will provide the basic level of computing service that is considered essential to meet the everyday needs of the waste management and transportation operations.

There is a need to establish a DOE complex-wide initiative, supporting the integration of key data elements supporting waste management and transportation initiatives while utilizing

industry best practices to develop and maintain a unified transportation management system. Contractors will inevitably shift to cloud architecture in an effort to reduce operations costs associated with maintaining information technology business systems. As contractors change across the complex, the business systems critical to the Department of Energy's mission should not change. These systems should be consistent and standardized within the Enterprise.

Leveraging the right technology with Business Intelligence in order to mitigate risk and improve performance is at the forefront of the Department of Energy's mission.

- Increasing responsiveness in a dynamic environment

    The merging of Bigdata and business intelligence, allowing DOE unencumbered access to key data elements.

- Electronic Shipping and Asset Management

    Viewing data rich assets as a living and dynamic entity that is in constant motion within the enterprise, moving across business processes and extending technology to the edge of your enterprise.

- Streamlining Efficiency

    Consolidated business systems, accessible from private cloud architectures become a utility, reducing operational costs, increasing efficiencies and allowing for sustainable staffing levels.

- Contractor to Contractor collaboration

    Building continuity and solving collective problems can only be achieved through mass collaboration, moving from a solely "for profit" business model to a "for purpose" business model.

- Energy Neutral Information Technology Initiatives

    Going green with technology reduces operational costs as well as reduces the consumption of natural resources.

With the absence of technological standardization we get more of the same. Consolidated business systems, accessible from private cloud architectures become a utility, reducing operational costs, increasing efficiencies and allowing for sustainable staffing levels. By looking at commercial best practices as it relates to technology and standardization, provides a benchmark for integrating "best of breed" solutions.

By changing internally, before external conditions cause impacting changes – we are able to make better business decisions and align resources to support change as opposed to reacting

to change. Initially, looking at internal business systems that are not connected – characterization, Radcon, etc., following the complete lifecycle of an item will uncover areas of opportunity which will result in increased operational performance. Contractors should use other sites as resources for technical solutions supporting common issues.

As DOE faces real challenges with effectively supporting the budget reductions to support federal initiatives, more emphasis must be placed on consolidating or eliminating orphaned applications and underperforming projects with the federal IT portfolios within the next 18 months. As operational costs continue to become an area of increased scrutiny, DOE must strengthen environmental, energy and transportation management initiatives in order to support its mission as well as maintain its exceptional safety standards, continuity of operations and financial sustainability. It is a contractor's responsibility to create value in the innovation, adaptation and sustainability of technologies to be delivered to the federal government in an effort to enable them to better execute.