

COMMODITY PROCUREMENT AND FORECASTING SYNCHRONIZATION

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ABSTRACT

Last year, Rocky Mountain Remediation Services, L.L.C., (RMRS) the prime Waste Management Subcontractor at the Rocky Flats Environmental Technology Site implemented a new waste management procurement/forecasting process that focused on producing a better product - compliant packaged waste. The packaged waste must be compliant with the Department of Energy (DOE) and Department of Transportation (DOT), regulations, and the Nevada Test Site (NTS) and Waste Isolation Pilot Project (WIPP) waste acceptance criteria for Low Level (LL) and transuranic (TRU) wastes. This change has resulted in timely and well-managed off-site waste disposal that promotes the generation of compliant, "road ready waste".

The former procurement system encountered a cumulative effect of process modifications resulting from changes in mission and management which diminished controls needed to ensure acquisition of acceptable waste commodities. This resulted in Price Anderson deficiencies. A collective review of the problems indicated that vendors failed to perform properly, and there were programmatic issues associated with the acquisition process, creating waste commodity deficiencies. This not only caused a supply problem but also produced program/project delays and increased operating costs.

The RMRS Customer Service Organization (CSO) took the initiative to implement a process improvement which centralized all activities tied to the procurement of waste/closure commodities: This was designed to identify commodity need verify use within the existing site infrastructure, and confirm appropriateness of proposed uses. The new process specifically identifies required packaging materials and configurations necessary for compliant off-site transportation and disposal consistent with the needs of the waste generators. Closure Commodity Representatives (CCR) were designated as the single point of contact / accountability for the integration, coordination and facilitation of closure commodity procurements. The CCR's ensure commodity compliance with the: specified waste packaging requirements; quality, engineering, and procurement procedures, and receiving, inspection and certification processes. Waste generators are queried on a monthly basis by the CCR's to identify required waste/closure commodities during the current fiscal year and through site closure. These individual projections are consolidated into a comprehensive forecast of operational needs, as a basis for future warehouse stock level determinations.

In the past, each project had specific unique needs for waste/closure commodities. The CSO has standardized the types of commodities used on plant site to simplify and expedite the process. The CSO has accomplished this by reviewing minimum commodity requirements for the waste disposal sites, and eliminating non-compliant commodities as well as compliant commodities that are simply not cost effective relative

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to appropriate substitutes. The CSO also reviews and is involved with making changes when necessary to Site waste program documents to verify the waste packages specified in these documents are acceptable repository packages. This effort has assured procurement of compliant waste packaging commodities.

Efforts have also been initiated to develop Indeterminate Delivery, Indeterminate Quantity (IDIQ) contracts for multiple vendors of the same commodity. The IDIQ process reduces delays based on operational variables. It allows procurement to increase or decrease production as required by commodity demand, thus reducing the otherwise lengthy lead times necessary to procure waste commodities.

Other benefits of the new waste/closure commodity procurement process are:

- 1) Clarified roles, responsibilities and points of contact for commodity procurement.
- 2) Single points of contact (CCR's) for each major project and commodity type;
- 3) Assignment of dedicated Subcontract Administrators to each project or group of projects;
- 4) Distribution of a list of commodities obtainable directly from the warehouse;
- 5) Development of a "catalog" of waste packaging commodities available on the site intranet;
- 6) Enhanced training;
- 7) Provision of planning guidance to all projects to improve project execution planning;
- 8) Provision of commodity request milestones by commodity category to ensure delivery of items requiring longer lead times;
- 9) Converting procurement activities into procurement requirements;
- 10) Standardizing waste packaging definitions for the Waste Environmental Management Systems (WEMS) database; and
- 11) Coordinating the disposition of Receiving Inspection Deficiency Reports (RIDRs) and nonconformance reports (NCR's) for all critical waste commodities.
- 12) Coordinating Corrective Action Plans amongst organizations and companies involved with the procurement.
- 13) Integrating waste / closure commodity procurement activities with other DOE facilities.

The implementation of waste/closure commodity procurement under the auspices of the CSO provides a single point of contact for waste generators for resolving waste commodity issues before and during the waste generation process. The CCR continues to seek process improvements to eliminate additional costs, expedite schedules, and take responsibility for all waste commodity procurement issues.

INTRODUCTION

The Rocky Flats Environmental Technology Site (RFETS) is a Department of Energy (DOE) nuclear weapons facility undergoing closure. Closure of the site requires removal of radiological and hazardous wastes generated from Decontamination and Decommissioning and environmental restoration activities.

Historically the waste commodity procurement process was fractionated between multiple contractors and organizations, each with their own unique procurement process, which was continually changing to meet operational needs. This resulted in a procurement process that was costly to operate, acquired nonconforming commodities, and failed to meet the demands of the site closure schedule. Rocky Mountain Remediation Services, L.L.C. (RMRS) initiated the re-engineering of the waste/closure commodity procurement system. The result is a centralized group of waste commodity specialists and subject matter experts, whose charter is to manage the waste commodity procurement activities between multiple contractors and organizations to produce compliant waste commodities for the RFETS.

BACKGROUND

During RFETS production of nuclear weapons, the purchase of unique fabricated items was considered an important element of the site mission and failure of such items was unacceptable. Upon change from the production mission to site closure, the importance of quality control for purchase of waste/closure commodities was underestimated. As a result, the procurement process was allowed to become less robust, and communication broke down between the Design Engineer, Subject Matter Expert (SME), Material Engineer, and Procurement Quality Assurance (PQA) regarding designs, specifications, assessments, inspections, tests and other controls necessary for effective commodity procurement. This sharing of information and determination of commodity requirements had almost been eliminated. Until recently the consequences of this approach were not fully realized because existing waste/closure commodities were adequate to meet the needs of the site. With the acceleration of decontamination and decommissioning as well as environmental remediation projects, design and quality problems began to occur.

During the spring of 1998, several incidents occurred revealing weaknesses in the acquisition of waste commodities.

- Standard Waste Boxes did not meet WIPP requirements due to faulty welds, and bolts stemming from poorly written specifications.
- Pipe weldments containing waste to be stored and shipped in the TRUPACT II containers did not have Nuclear Regulatory Commission (NRC) approved wall thicknesses and the associated filters had not been tested and assured to meet hydrogen diffusivity requirements; and
- B-12 and B-88 waste boxes had been manufactured outside specifications.

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A review indicated the vendors failed to perform properly, and the acquisition process was unable to assure the waste commodities ordered would meet waste packaging requirements. These issues had the potential to significantly impact the site closure process. Subsequently, the incidents were combined into a Price Anderson Amendments Act (PAAA) report under the self-reporting process. This analysis was requested to identify appropriate corrective actions to preclude recurrence. The following two causal factors were identified:

Root Cause: The cumulative effect of streamlining the acquisition process diminished the controls needed to ensure acquisition of acceptable waste commodities.

Contributing Cause: Personnel supporting waste commodities acquisition process did not know technical waste packaging requirements, including changes.

PATH FORWARD

The Quality Assurance organization conducted an evaluation of the problem with three objectives:

- to identify the impact to potential programs and/or projects which may incur loss of critical functions (by audit or assessment of the procurement process, item specifications, and evaluated supplier listing);
- to review applicable DOE Orders, regulatory requirements, and repository waste acceptance criteria to ensure RFETS waste packages are compliant, and program documentation and procedures to verify the waste packages specified are acceptable; and
- to ensure technical and regulatory changes are disseminated to appropriate support organizations.

As a result of this evaluation, a fully integrated procurement process was implemented across company, functional, and organizational boundaries, based on DOE and DOT regulations, and the NTS and WIPP waste acceptance criteria. The Customer Services Organization (CSO) became the single point of contact/accountability for integration of the waste commodity procurement process. Actions were initiated to:

- identify the required roles and responsibilities of Closure Commodity Representatives (CCRs); and
- establish a memorandum of understanding to ensure adequate and timely site support.

The CSO became the link between waste programs and commodity support organizations.

PROCUREMENT PROCESS DEVELOPMENT

A closure commodity procurement procedure was prepared to describe the closure commodity multi-company and organizational interfaces; forecasting activities;

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procurement specification preparation; Purchase Requisition preparation; commodity procurement, receipt, and inspection; and nonconformance evaluation/disposition. Compliance with this procedure is the responsibility of all Site personnel involved in the procurement of closure commodities.

The flow diagram (attachment 1) depicts the *RFETS Waste Commodity Delivery Process*. The delivery process addresses seven separate commodity procurement elements.

Stock Item

- If the commodity is a stock item, a “material & supply” (M&S) request card is completed and submitted to the warehouse by the user. The warehouse confirms adequate stock based on forecasts and ships to user. If the stock is reduced to minimum safety level (the minimum level of inventory at which operational usage’s can be met.), the warehouse will initiate a purchase requisition to replenish supplies.

New Item

- If the commodity is determined to be a new item or proto-type the functional criteria are identified. An evaluation of the applicable compliance requirements is conducted and an engineering design package and/or specification is developed. Procurement solicits potential suppliers and supplier evaluation process is conducted prior to contract award. The commodity is manufactured in a limited quantity and/or a first article is produced and evaluated in accordance with the functional criteria. This commodity is inspected/tested at the supplier location. If nonconforming, the CSO interfaces with supplier and responsible organizations (QA, Engineering, User, Procurement, etc.) to disposition and resolve the nonconformity. If approved the supplier is authorized to complete production. A source acceptance is conducted at the suppliers location on each lot produced until such time that RFETS achieves the required level of confidence in the supplier. If the commodity is identified for long term usage in significant numbers, the user will initiate a warehouse stock request to maintain an inventory at required levels.

Procurement

- A requisition is initiated by the user, signed by the cognizant authorities e.g., Resp. Mgr., CSO, QA, etc., and submitted to the buyer. The buyer evaluates the suggested suppliers against the Evaluated Supplier’s List (ESL) to determine qualified suppliers. If there are no qualified suppliers on the ESL, the buyer requests Procurement Quality Engineering to evaluate supplier to required quality level. If qualified suppliers are identified on the ESL, suppliers are solicited and a contract is awarded.

Fabrication & Receiving

- The supplier submits a design/contract agreement to RFETS for review, evaluation and approval by the cognizant authorities e.g., Procurement, Engineering, CSO, QA,

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etc.. If a design is rejected, the supplier will provide changes requested by RFETS until a final design has been approved. If approved, the supplier will produce a first article (or articles) for review, inspection and evaluation by RFETS. This may require several iterations until the first article(s) can be approved. Upon approval of the first article, the supplier will be authorized to produce a limited quantity in small lots. The initial lots will be source accepted at the suppliers' facility until a required level of confidence has been established. Lots in which source acceptance has been conducted will be inspected for shipping damage upon receipt at RFETS. Those suppliers whose commodities are not source inspected will require inspection/testing in accordance with specification requirements. Damaged commodities will be segregated and a claim filed with the carrier. Accepted commodities will be shipped directly to the user or into warehouse stock depending on user need.

Receiving Certification & Inspection Process

- Inspection/testing is performed upon a commodity in accordance with its specification requirements. If a commodity is identified as nonconforming a Receiving Inspection Deficiency Report is issued to the CSO. The CSO will disposition the nonconformance in accordance with administrative and safety level requirements e.g., use-as-is or return to supplier. If the nonconformance effects form, fit, or function, the CSO is required to initiate a Nonconformance Report (NCR). This NCR must have concurrence of final disposition by the user and/or engineering. Inspection notifies the buyer to initiate settlement for rejected commodities. Accepted commodities are transferred into inventory or the user.

Warehouse Operations

- Upon commodity receipt a Receiving Inspection Report Sheet is initiated for individual commodities. The commodities are inspected and divided into three disposition categories. *Accepted*, are approved commodities placed into inventory and/or shipped to the user. *Discrepant*, are commodities pending administrative dispositioning by the CSO and/or Subject Matter Expert. *Rejected*, are commodities pending resolution e.g., replacement, rework, and/or financial considerations between the supplier and the RFETS Procurement organization. The commodity usage is tracked to assure sufficient stock is maintained to support operational forecasts. Reorder points are established on each commodity in accordance with usage requirements and a purchase requisition is initiated when inventories fall below these indicators. Commodity allocation is coordinated by the CSO based on inventory quantities and program/project priorities.

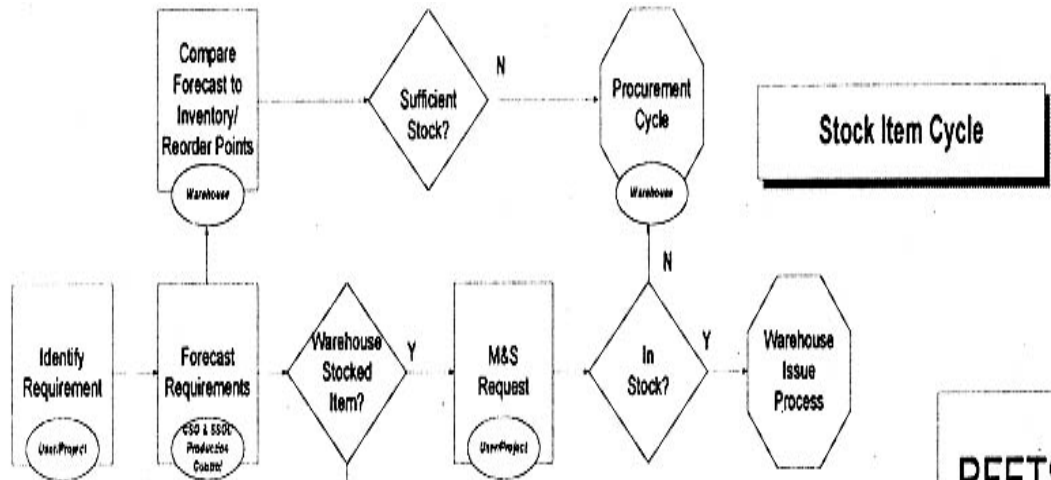
Transportation

- Routine commodity shipments are scheduled between the warehouse and the users based on warehouse M&S request cards received from the user. Emergency moves are coordinated by the CSO on case-by-case bases.

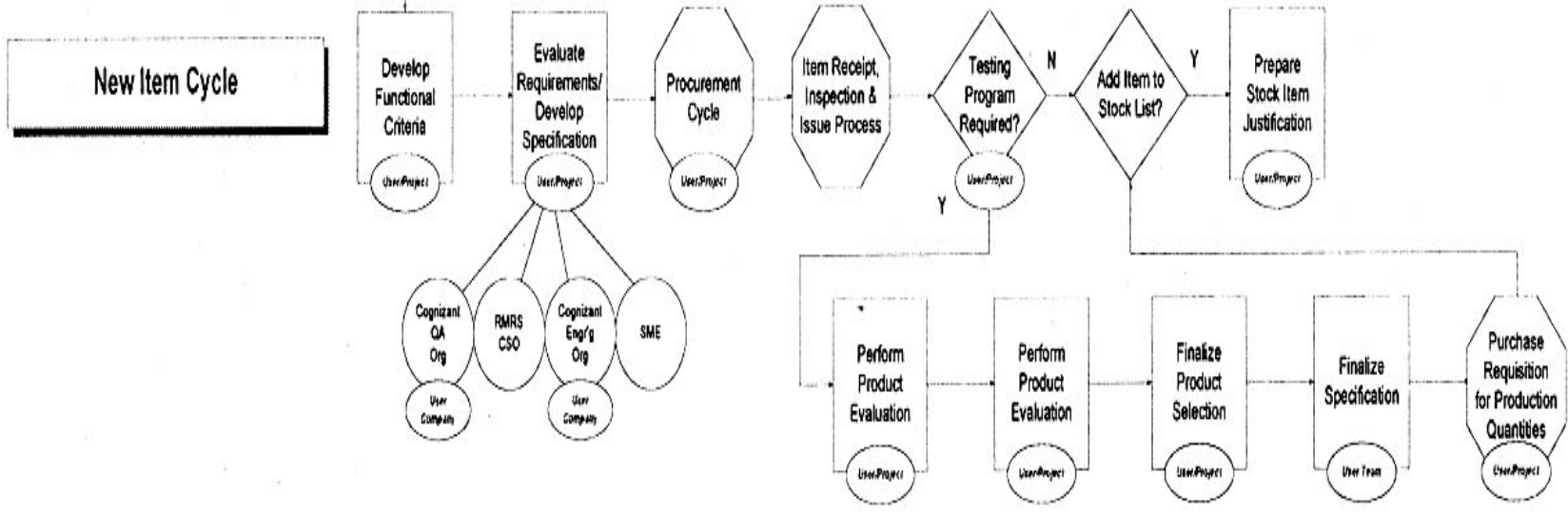
CONCLUSION

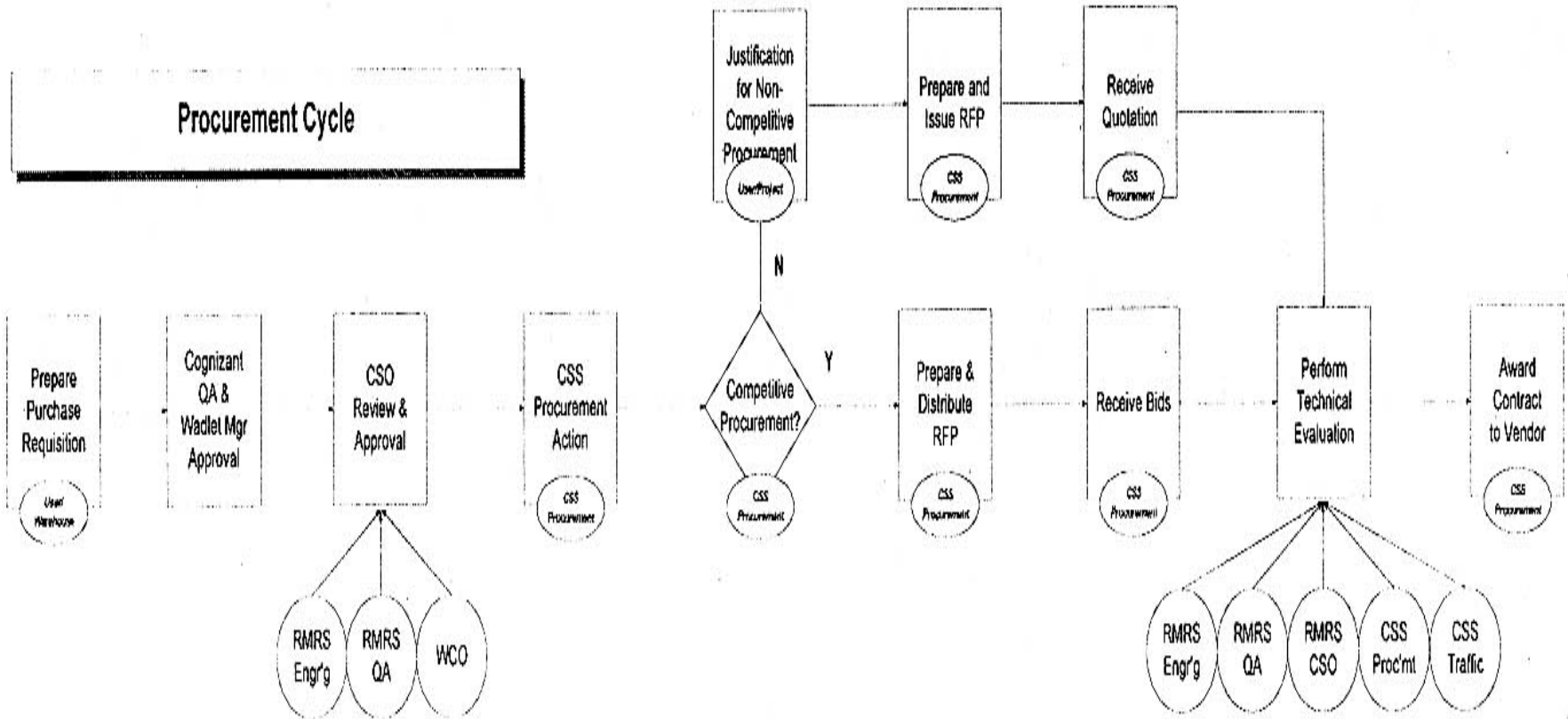
The prior procurement process produced unacceptable waste commodities due to the lack of integration between design, specification, supplier audit, supplier production, and receiving and inspection functions. This inadequacy created the potential for shipping noncompliant waste to the waste repository facilities in violation of regulatory requirements and acceptance criteria. The net effect could have potentially caused a total shutdown of the RFETS operations delaying the FY2006 closure mission. The financial impact would have been significant from the resulting fines, work stoppage and start-up costs.

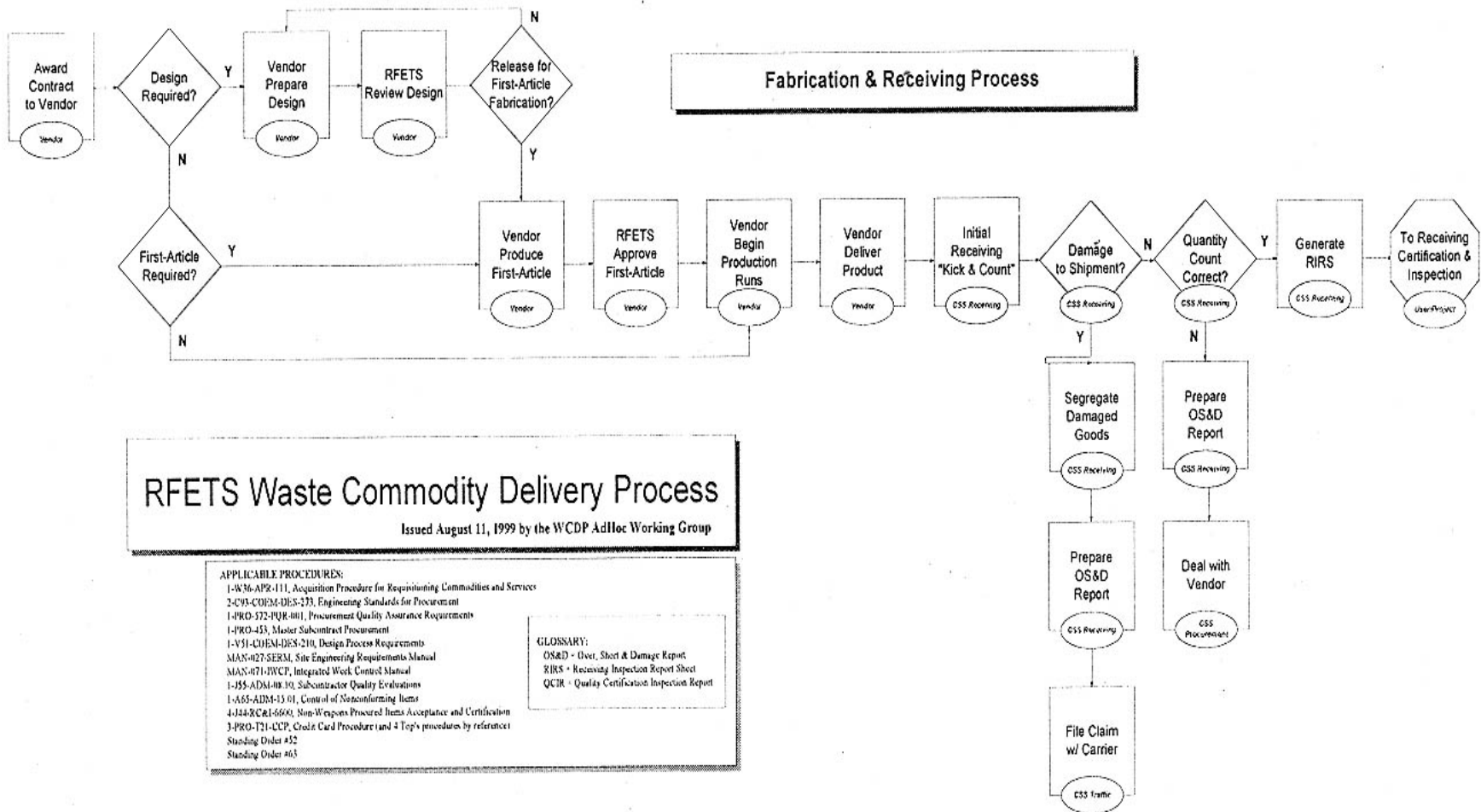
The revised procurement process with the CSO as the single point of contact to integrate waste commodity procurement activities with the requisitioner and cognizant organizations has resulted in effective problem resolution and improved communications, enabling the streamlining of the process with a clear line of ownership of responsibilities. The CSO has enhanced the working relationship between the requisitioner and interfacing organizations. The CSO has initiated qualification and training requirements for the Closure Commodity Representatives (engineer) and Subject Matter Experts. The new process has resulted in a significant reduction in the number of noncompliant waste commodities received. All noncompliant conditions have been caught during the acquisition process. There have been no waste commodities with noncompliant conditions issued to operations.

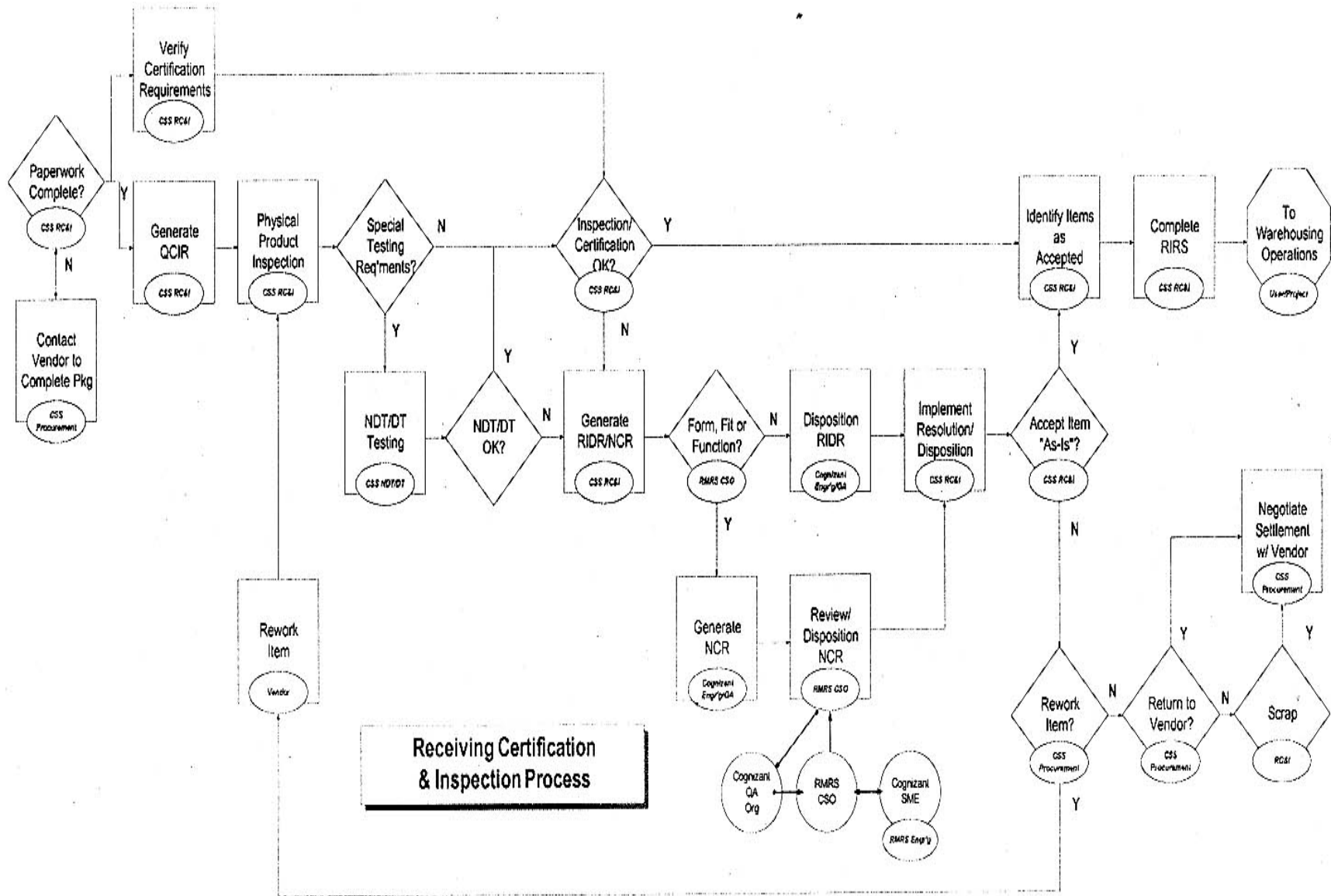


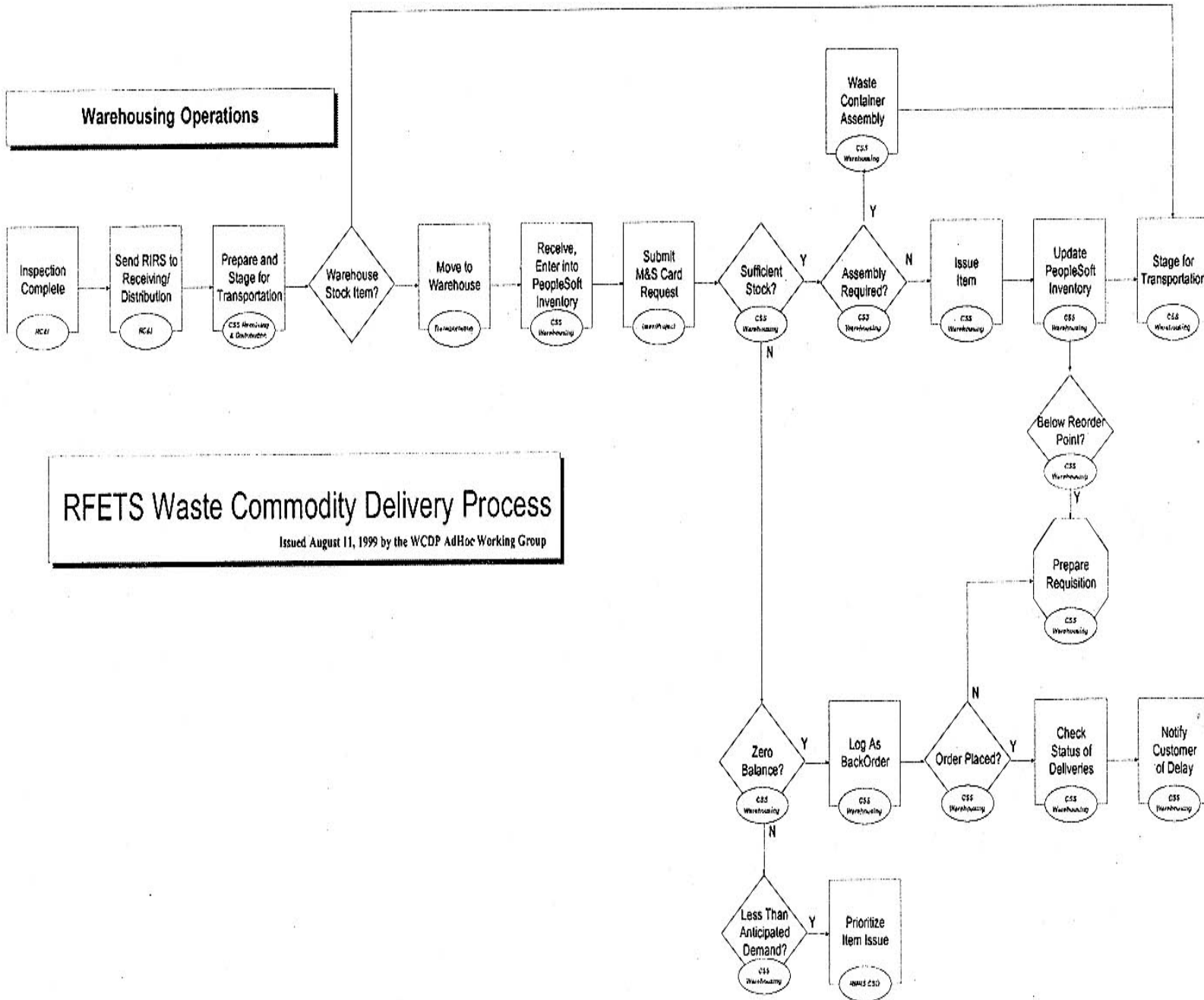
RFETS Waste Commodity Delivery Process
 Issued August 11, 1999 by the WCDP AdHoc Working Group











Transportation Operations

