Quality Assurance Audit Report

To: Hutch Neilson, NCSX Project Manager
Wayne Reiersen, NCSX Project Engineer
From: Judy Malsbury
Subject: Audit #0601 – NCSX Procurements
Date: February 1, 2006

This report documents audit number 0601, NCSX Procurements. For this audit there were seven observations and one finding. Corrective actions for the finding have already been specified and are contained on the finding form.

Reference material pertaining to this audit is available in the audit file and may be obtained by contacting the Lead Auditor at 609-243-2415.

Responses to the audit will be followed up and corrective action status is reported on a monthly basis.

Should you have any questions, please contact the Lead Auditor.

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Wayne Reiersen, NCSX Project Engineer

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Frank Malinowski, NCSX Procurement QA, Quality Assurance Division
Brad Nelson, ORNL, Head, Stellarator Design & Procurement

AUDIT REPORT

Audit Number:	0601
Audit Name:	NCSX Procurements
Date(s) of Audit:	December 5 – 8, 2005
Place of Audit:	PPPL
Auditors:	Judy Malsbury (Lead Auditor) Charles Gentile, Head, Tritium Group Joe Labas, Brookhaven National Laboratory Bob Simmons, NCSX Systems Engineering Support
Organizations Audited:	NCSX, Procurement, PQA (within QA)
Individuals Contacted:	Tom Brown, NCSX Design Integration Jim Chrzanowski, Head, WBS 14, Modular Coil Fabrication (uses the MCWF as the basis for the fabrication) Mike Cole, Stellerator Core Design Integration, ORNL Peter Djordjevich, QA Manager, EIO Larry Dudek, Head, Fabrications, Operations, and Maintenance Division within Engineering Paul Goranson, NCSX WBS 11-12, Vacuum Vessel and In-vessel Components, ORNL Phil Heitzenroeder, Procurement Technical Representative for the MCWFs Nancy Horton, Project Manager, EIO (prime contract for MCWF) Frank Malinowski, PQA Mike Manual, Project Manager for the VVSA Project, Major Tool & Machines, Inc. Rosa Medina, Defense Contracts Management Agency representative for Metal Tek, the foundry for the MCWF procurement Brad Nelson, NCSX WBS 1, Stellerator Core Design and Procurement, ORNL Roy Sheppard, EIO Larry Sutton, Contracts Administrator for both the MCWF and VVSA Procurements Mike Viola, Procurement Technical Representative for the VVSA Dave Williamson, NCSX 14, 16, Modular Coils and Coil Services, ORNL
Exit Meeting:	Thursday, January 12, 2006, 10:45 AM, Neilson's office

Charlie Gentile, Auditor, Tritium Systems
Joe Labas, Auditor, BNL (via telecon)
Frank Malinowski, PQA, QA DivisionS
Judy Malsbury, Lead Auditor, QA Division
Hutch Neilson, NCSX Project Manager
Brad Nelson, NCSX WBS 1 Manager (via telecon)
Wayne Reiersen, NCSX Project Engineer
Bob Simmons, Auditor, NCSX Systems Engineering

References: See Appendix B

Executive Summary

This was the first audit performed of the two major NCSX Procurements – the Modular Coil Winding Forms and the Vacuum Vessel Segment Assemblies. These are extremely complex procurements, significantly more complex than the typical PPPL procurements. Both procurements are "build to design", with the design specified by the NCSX Project via ProEngineer and STEP files, pdf drawings, and specifications. As may be expected in such complex procurements, many revisions have been made to the designs, the majority identified by the suppliers, some by the project.

The audit resulted in one finding and seven observations. The single finding concerns the storage of supplier provided documentation. QA-003, Procurement Quality Assurance, requires that such documentation be provided by the Procurement Technical Representative to the Operations Center or Project, Department, or Division designated file centers for storage. Problems in this area have been identified in audit 0502, Technical Requirements for Procurements, and are currently being resolved. However the issue for NCSX differs from the rest of PPPL. For the NCSX project, much of the documentation is provided electronically. While the Project has created a storage site for such supplier provided documentation, it is not consistently used nor personnel all aware of this site. Prior to the issuance of this report, the project clarified the storage of such documentation in NCSX-PROC-006 and developed a course for Procurement Technical Representatives concerning their responsibilities and the NCSX processes. The remaining action is to give the course.

A significant observation (#4) concerns the appropriate level of quality oversight of suppliers. Such oversight has associated costs but also reduces the risk and the probability of failures. Audit 0502 also had a finding – *Roles and responsibilities for PPPL procurements have not been clearly defined, or, where defined, adequately understood.* This is a PPPL Labwide finding, not limited to the NCSX project. As a result of the 0502 finding, PPPL policies and procedures are being modified and a training course for Procurement Technical Representatives (PTR) is being developed. As part of the input to this course and in addition to the commitments for audit 0502, the 0601 audit team is recommending that a dialog on such roles and responsibilities be held with key PPPL management and the Quality Assurance Division. This recommendation

is being pursued by Quality Assurance. A special task force to address this issue was established via QA memorandum #06014, issued 1/16/06. The task force will have its first meeting on 2/2/06.

I. Audit Overview

A. General

This was a review of major NCSX procurements for FY05 (Modular Coil Winding Form - MCWF, Vacuum Vessel Segment Assembly - VV) with a focus on technical and quality concerns. It was performed primarily by interviewing individuals - PPPL employees, DCMA representatives, and supplier representatives, and by reviewing records.

B. Background

Two procurements were reviewed for this audit.

The first is a procurement of 18 modular coil winding forms (MCWFs) – 6 each of 3 different configurations. These forms are the basis for the modular coil fabrication. Conductors and other materials are wound onto these forms as part of the PPPL fabrication process. The procurement was issued to Energy Industries of Ohio, which has three subcontracts – Lawton for the pattern, MetalTek for the casting, and Major Tools and Machinery for the machining of the castings.

The second is a procurement of 3 vacuum vessel segment assemblies (VVSA). The contact was awarded to Major Tools and Machinery. Note that while MTM has prime responsibility for the VVSA contract and a significant role in the MCWF contract, the work groups within MTM for these two activities are separate with different project managers.

For both contracts, the DOD Defense Contract Management Agency (DCMA) was contracted via the DOE Princeton Site Office to provide field oversight of the contracts under PPPL direction.

C. Objectives of the Audit

The performance objectives and criteria (POCs) for this audit, along with the status in italics, are:

1. Appropriate requirements and designs for the MCWF and VV are specified in the product specifications, models, data files developed from the models (e.g., step files), and drawings. The designs include, but are not necessarily limited to, the following requirements, where applicable: performance, physical characteristics, interface requirements, material, processes, parts, workmanship, reliability, maintainability, environmental, codes and standards, and construction, fabrication, and assembly. The information in the various documents and files are consistent.

Many changes have been made to the requirements and designs during the procurement of the MCWF. The specification is now at revision 10. Many of these changes have resulted from Requests for Deviations initiated by EIO to simplify the process. Due to the complexity of this procurement, perhaps this level of change is reasonable, but it does question the appropriateness of a fixed cost contract.

Fewer changes were made for the VVSA procurement.

For both procurements, the process for assuring that all design documents and files are consistent is manual. For the most part, it works very well, primarily because the number of individuals controlling the process is limited. However, two incidences of problems within this system, one detected during the audit and one detected after the field portion of the audit was completed, are documented in observation #3.

2. Prospective suppliers are appropriately evaluated to assure that they are capable of meeting the technical and quality requirements.

   The project had an extensive process for qualifying prospective suppliers through the procurement of prototypes. Since only suppliers qualified through this process were used for the production procurements, the audit team, in general, did not review this POC in detail. However, due to schedule delays, the procurement of the prototype MCWF did not include the machining of the casting. While the quality of the machining of the production MCWFs received so far is high, this process is having a significant impact on the project schedule. Perhaps if the prototype had proceeded into machining, the impact on schedule would have been identified. Note, however, that the machine shop included in the prototype MCWF is not the same machine shop used by EIO for the fabrication MCWFs.

3. Changes to these requirements and designs are appropriately identified, reviewed for their impact on technical, quality, cost, and schedule requirements, and dispositioned, whether identified by the supplier or by the project, and properly communicated to all involved. Documentation for these changes is generated. Technical documents, such as the product specifications, models, data files developed from the models, and drawings are updated to reflect the approved changes. Consistency among the documents is maintained.

   Changes are identified via Requests for Deviations (RFDs) or Nonconformance Reports (NCRs) and are handled via NCSX processes. Issues with respect to assuring that all documentation is consistent as a result of these changes are described in POC #1.

   QA transmits all closed NCRs to the Operations Center for filing once the associated work activity, in this case the procurement of all MCWFs or VVSA, is completed.

   Per QA-003, the PTR is responsible to assure that the completed supplier NCRs are transmitted to the Operations Center or appropriate Project files as part of the product history information. This can be done either piecemeal as information is received or as a complete package when the procurement is completed. Earlier audits (#0502) identified problems in this area in that only a few PTRs do this.

The NCSX project has established storage locations for supplier information, but not all project staff are aware of this. The Project is working on training for the PTRs.

Note also observation #6 and finding #1. The open supplier NCRs posted on the NCSX website do not always contain all the information associated with the NCR nor do they consistently identify the problem in adequate detail for record purposes.

4. Appropriate post-award oversight plans are established and implemented. The individuals involved in this oversight, e.g., Technical Representative, Procurement Representative, DCMA Representative, and Procurement Quality Assurance, communicate with each other and assure that potential issues are resolved in a timely fashion and that these issues and their impacts are appropriately documented. Such resolutions are appropriately communicated to all involved.

   Concerns were expressed about the level of post-award oversight. However, due to the time constraints for this audit, the team could not adequately review this situation and come to an opinion. See observation #4.

   Many methods have been set up by the project to improve the communications with all involved, including the supplier. The specifications now include a section listing all the drawings relevant to the procurement and their current revision level and date, making it easier for the supplier to identify what drawings have changed. The project is considering including a list of all STEP files that have changed as a result of a new revision to a specification, again making it easier for the supplier to recognize these changes and incorporate them into the fabrication process. Many regular meetings are held to discuss these procurements. As an example, for the MCWF procurement, weekly telecons are held with EIO and lead by PQA to discuss the status of open quality issues.

5. Supplier information, e.g. test results, material certifications, is provided when required by the contract and at the appropriate time within the fabrication process. Review of this information is provided by the project in a timely fashion. Potential issues are resolved in a timely fashion. These issues and their impacts are appropriately documented. Such resolutions are appropriately communicated to all involved.

   Supplier information is received, though not always when expected within the process nor without prompting by PPPL.

6. Upon receipt, final inspection of the hardware is performed by the Project. Nonconformances and their impact on the Project are identified, documented, and resolved. The impacts of these nonconformances on delivery of other items under the same contract are determined and appropriate corrective and preventive actions taken.

   So far, only the MCWFs C-1 and C-2 have been received. Nonconformances, either PPPL or supplier, have been generated for these and are available at http://ncsx.pppl.gov/NCSX_Admin/QualityAssurance/NCRs/index_NCRs.htm.

So far, none of the VVSA segments have arrived at PPPL. Supplier NCRs have been generated and are available at this same URL.

D. Commendations, Findings, Observations, and Recommendations

This audit resulted in one finding and seven observations. They are:

Finding There is one finding for this audit concerning the storage and protection of supplier provided records. See the finding form for details.

Commendation The Project team, including the vendors and suppliers, displayed a very high level of "pride of ownership" for the project, consistent with good management practices, which should lead to a successful NCSX machine being produced, commissioned, and operated.

Observations – *When changes have occurred as a result of these observations, they are indicated in italics*

1. DCMA Coverage – Observations here include:
   a. As people leave DCMA, the audit team was told that they are frequently not being replaced. This puts a stress on resources. Note that NCSX has not, for the most part, been impacted by this, but this could be an issue in the future, especially for ITER procurements. QA should consider establishing a BOA for inspection services as a secondary source. This could be difficult since the Laboratory cannot guarantee a minimum number of hours of work, but other organizations within the Lab, such as Materiel and Environmental Services, have similar service contract situations and perhaps could provide advice.
   b. When possible, the Lab prefers the DCMA representatives to witness tests. However, due to time constraints, this is not always possible and, in lieu of the actual witnessing, they review the records. There is less value in reviewing records which are later also reviewed by PPPL. The contracts with these suppliers require five days notice for such witness points. While five days is not always realistic, the DCMA representatives have commented that they are usually able to witness the tests with one or two days notice. Every effort should be made by both the suppliers and PPPL to allow for DCMA witnessing.

      The DCMA representatives both commented that they try to cover their suppliers once or twice a week in addition to trying to be available for critical steps. The latter is more important. Given their workload, emphasis should be on witnessing critical tests or inspections.

c. At the start of this audit, the DCMA representatives were not aware of the NCSX Manufacturing FTP site, which contains the most up-to-date information about the contracts they are covering.

As soon as observation 1c was identified, the DCMA representatives were informed about the NCSX Manufacturing FTP site (12/8/05).

2. Impact of changes on already procured items or fabricated assemblies

Requested changes to requirements, identified in advance of implementing the change, are presented by the supplier via the NCSX Request for Deviation form. Nonconformances are documented under either the supplier or PPPL nonconformance system. These systems should be reviewed to assure that they properly address how the change will impact material already procured for this project. If there is an impact, the project needs to disposition the material (e.g., use, discard, send to PPPL) and identify the higher level assemblies impacted. As an example, EIO purchased studs to the requirements of DS141-036, rev. 0, which specified 9" studs with the material standard specified on the drawing which was an incorrect reference. This drawing was later revised to increase the length to 9.5" and correct the reference, though, by then, the material was already at Major Tool. The discrepancy was not detected until C-1 had arrived in house, when a PPPL NCR (#3618) was generated. The disposition included requesting that EIO procure the correct bolts (at PPPL's expense due to the incorrect referenced standard) and use the older bolts until the newer ones are received. It does not indicate what to do with the remainder of the incorrect bolts. At the time of this audit, neither the PPPL NCR nor the NCSX RFD systems contained a place to identify if the issue impacts material already in stock or assemblies already completed.

Note that the PPPL NCR System, maintained by QA, is a database driven system. With limited resources for database work, changes are difficult to implement. However, this will be added as one of the considerations in the instructions sent along with copies of the NCRs for dispositioning.

The RFD form and the associated procedure (NCSX_PROC_009) have since been updated to reflect this addition. In addition, the project updated the ECP form and associated procedure (NCSX_PROC_002) to reflect this addition. The Quality Assurance Division procedure on processing of NCR, Q-007, has been updated to include guidance on considering the impact of the NCR on already procured and/or fabricated items.

3. Control of models, drawings, and STEP files The Pro/Engineer program is used to develop the complete model for the mechanical portions of NCSX. From this model, drawings are generated onto which additional information, such as critical dimensions, and notes are added. In addition, from this model, STEP files are generated that are actually used by the

suppliers to program their machines. On the supplier FTP site, three zip files are maintained current for the proE models, STEP files, and pdf drawings. This is the primary source for information to the supplier. The audit identified the following observations in this area:

a. In order to assist the supplier in recognizing which drawings have changed in a revision to a specification, a section has been added to the specification listing all the applicable drawings and the current revision number. The supplier can scan this list and compare the revision levels and dates to those of the drawings currently in use in the field. This technique was added to improve communications between PPPL and the suppliers but is a courtesy on PPPL's part. The supplier FTP site contains the contractually binding information. *Actions completed.*

b. While drawing files have revision numbers as part of the file name, STEP files do not. The only way to differentiate between versions of STEP files and to determine which STEP files changed as a result of a revision in the model is by the date of the file. Note that while there are a relatively small number of drawings relative to these procurements, there are a large number of STEP files. In order to clearly identify drawing changes, NCSX lists all drawings that are associated with a specification and their levels in a table at the end of specifications. This was provided as a tool to assist the supplier in identifying the changed drawings. Listing all the STEP files and date last changed would not be as effective since there can be a large number of STEP files associated with a procurement. The project has implemented a process enhancement that each revision to a specification lists the identifier of the STEP files that have changed as a result of the revision. *Actions completed.*

c. During the audit, the audit team observed evidence of one instance of incomplete or inaccurate files being provided to the supplier. NCR #3620 documented that shims for both C1 and C2 were improperly machined, i.e., not following casting contours, due to the unavailability of STEP files when these parts were machined. The supplier used the pdf drawings for further information, which did not have the resolution necessary to determine the required contours. A second example was identified after the field work of the audit was completed. Revision 7 drawings were in a zip file labelled revision 6. The creation of pdf drawings, STEP files, and zip files are a manual process. While the systems integration team is extremely conscientious, errors can creep in. It is recommended that the project consider safeguards to help prevent and detect such manual errors.

4. Quality oversight of suppliers Opinions varied on whether the appropriate level of quality oversight of the suppliers is performed. During this audit of 3.5 days, the audit team did not come to a firm position on this matter. This issue is related to finding #4 of an earlier audit, #0502, Review of Technical Requirements and Procurement. The #0502 finding is "Roles and responsibilities for PPPL procurements have not been clearly defined, or where defined, adequately understood." As a result of this finding, the roles and responsibilities will be clarified, as needed, and a training course developed primarily for the Procurement Technical Representatives on requirements, roles, and responsibilities. As part of the input to this course, a special task force on such roles and responsibilities specifically as they relate to quality assurance is being established. See QA Memorandum #06014. Note also that as a result of this audit (#0601), NCSX is in the process of developing a course for their Procurement Technical Representatives.

   The task force has been created, see QA Memorandum #06014 dated 1/16/06. The first meeting will be Thursday, February 2, 2006. A draft PTR course has been developed by Procurement and is in the review cycle.

5. Dating of Read-me Files The Read-Me files contain a history of the changes made to the files located on the Supplier FTP site (the pro/E model, pdf drawings, STEP files). While the dates associated with the files are automatically updated when the files are modified and the NCSX Design Integration Manager, who maintains these files, precedes each change with the effective date of the change, it is recommended that the date that the file was last saved be automatically added (by Word) to either the footer or header of the file so that the reader can quickly determine the version of the file that is being read.

6. Supplier Generated NCRs The supplier generated NCRs do not contain adequate information for future reference should it be necessary to reference the fabrication history of a component. As an example, MetalTek Corrective Action #1252 has as its description "Major defects were observed during final Penetrant inspection." It does not specify the locations or characteristics of these major defects. These NCRs should contain adequate information so that, in the future, the reader can determine exactly what problems were identified, on which unit and at which location, the characteristics of each problem (e.g., depth and length of fissure), and how each problem was resolved, making these records as helpful as possible in researching future problems, should they occur.

7. NCRs as Records The audit team has two observations in this area.

a. The NCSX website for NCRs states that official copies of NCRs are stored in the Operations Center. However, for PPPL generated NCRs, the official copies of the NCRs are moved to the Operations Center only after the associated work activity is complete, such as the receipt of all MCWFs or VVSAs. In the interim, the official copies remain in QA Division files, per QP-002. Courtesy pdf versions of the NCR are provided to NCSX for posting on the web as they are generated and updated. Supplier generated NCRs are part of the procurement deliverables information of section 5.2.10.3. *No further action taken.*

b. The NCSX Documents and Records Plan, section 5.3.8, states that Nonconformance Reports (NCRs) are records owned by the Quality Assurance Division and covered by QA-005. This is only true for PPPL generated NCRs, not those generated by the suppliers. The supplier generated NCRs should be included in the procurement deliverables information of section 5.2.10.3. It is the Procurement Technical Representative's responsibility to assure that supplier NCRs, as records, are properly protected. The Project is developing a PTR course that will address this. *The NCSX Documents and Records Plan was updated to clarify that the Quality Assurance Division only owns the PPPL NCRs and is responsible for the associated record keeping. Supplier NCRs are owned by the PTR, who, per QA-003, has responsibility for assuring that these records are appropriately stored and protected – NCSX secured website for electronic records, Operations Center for paper records.*

II. History

See the Executive Summary

Appendix A - Audit Finding Reports

Appendix B – Supporting Documentation

AUDIT FINDING REPORT

AUDIT NO.: 0601 FINDING NO 1

AUDIT NAME: NCSX Procurements

AUDITED ORGANIZATION: NCSX

DATE OF AUDIT: December 5 – 8, 2005

REFERENCES:

P-015, Rev. 1, Records Management

NCSX Documents and Records Plan, Rev. 2

QA-003, Rev. 2, Procurement Quality Assurance

PROGRAM REQUIREMENTS:

P-015 includes as a quality record "inspection and test records." For these records, the policy states "Additional requirements are imposed on quality records, including definition of quality records; preparation, review, approval, revision, and distribution process; protection, preservation, revision, traceability, accountability, and retrievability; and method for storage including protection from damage, loss, and deterioration."

The NCSX Documents and Records Plan states in section 5.2.10.3, Procurement Deliverables: "Each contract has its own set of unique deliverables that are required under that contract. Starting with the basic contract document, an increasing more detailed list of contract deliverables is identified. These contract deliverables are expected to be provided to PPPL by the supplier. The identification scheme is established by the supplier.

A special subset of the procurement deliverables are those items of a procurement sensitive nature that requires special handling. These generally cover topics dealing with technical issues or problems and may either originate at PPPL or the supplier. A special restricted and controlled web site has been established to provide protected storage site for procurement sensitive information."

The NCSX website for NCRs located at http://ncsx.pppl.gov/NCSX_Admin/QualityAssurance/index_QA.htm states that official copies of NCRs at stored at the Operations Center.

QA-003, Section D, specifies the requirements for record retention for supplier deliverables. It specifies the requirements for the Procurement Technical Representative to deliver a set of specified records to eitherthe Operations Center or the Project, Department, or Division designated file center.

FINDING: HANDLING OF SUPPLIER PROVIDED DATA REQUIRES IMPROVEMENT.

This finding is supported by the following:

1. The supplier generated NCRs posted on the NCSX website were not all complete nor are complete versions available in the Operations Center. As examples, MTM N/C #18237 contained the statement: "See additional documents for maps and lists of (9) separate non-conforming features." The additional information was not available on the website at the time of the field work for the audit and has since been added. MTM N/C #17746 contains reference to "attached sketches describing the non-conformances" but these sketches are not on the website.
2. At the time of the audit, a significant amount of data associated with the VVSA was available in the restricted and controlled website mentioned by the Documents and Records Plan, but no data for the MCWF. While some information on the use of this site is available in the Documents and Records Plan, as indicated in the requirements section, it is not clear how NCSX staff would be made knowledgeable of the site, how to store data there, and what data should be stored there.

Priority: Low

RECOMMENDED CORRECTIVE ACTION:
Note: Recommendations are suggestions only. Specific action taken to resolve the finding is at the discretion of the audited organization.

1. Clarify how supplier provided data will be stored for NCSX.
2. Assure that the NCSX project personnel are aware of this system and how to store information there

Note that the Documents and Records Plan indicates that the secure storage area is for supplier sensitive information only; all the supplier information that is available on electronic formats, except perhaps drawings, should be stored in this area.

Note that the NCSX Systems Engineering Support Manager is already working on this problem and its resolution.

The project should also consider the storage of electronic drawings should such be received in the future. Currently, Laboratory procedures require that these drawings be transmitted to Drafting.

CORRECTIVE ACTION (to be completed by audited organization):

Proposed by: Bob Simmons On date: 1/17/06

1) CORRECTIVE ACTION TO RESOLVE THE FINDING:

The supporting documentation for MTM N/Cs 17746 and 18237 was added to the web.

NSTX-PROC-006 was revised (rev. 4) to require the approval of the PQA representative before posting supplier generated NCRs on the project website. The PQA representative is responsible to assure that all associated information is provided with the NCR and that the NCR package is complete.

NSTX-PROC-006 was revised (rev. 4) to require the Procurement Technical Representative to assure that all supplier provided data for procurements be transmitted by the PTR to the NCSX Engineering Administrator for posting on the secure area.

The project has developed a course describing the PTR responsibilities, though the course has not yet been given.

Completion date: July 15, 2006 to give the course Assigned to: Bob Simmons

2. CORRECTIVE ACTION TO PREVENT A RECURRENCE OF THE FINDING:

The actions above should prevent a recurrence of the finding.

Appendix B – Referenced/Supporting Documentation

1. Data associated with MCWF Procurement
    a. List of contents of production_mcwf_pdr_r5.zip file and rev 6 zip file
    b. MCWF Readme.doc file
    c. Product Specification for MCWF, Rev. 9, used to generate checklist, and Rev. 10, current at time of audit
    d. Statement of Work for MCWF, rev. 4
    e. MCWF Schedule – September Status 2005
    f. Sample PPPL generated NCRs for MCWF issues
    g. Sample RFDs for MCWF
    h. Sample Major Tool & Machine, Inc. Nonconformance Reports
    i. Sample MetalTek Corrective Action Reports
2. Data associated with VVSA Procurement
    a. VVSA Schedule as of September Status 2005
    b. Completed VVSA Checklist
    c. Sample Weekly Status Reports from Major Tool and Machine, Inc
    d. Product Specification for the Vacuum Vessel System Sub-Assembly
    e. VV Readme File
    f. Sample MTM Nonconformance Reports
3. QA-003, Procurement Quality Assurance
4. NCSX Documents and Records Plan, Rev. 2
5. P-015, Rev. 1, Records Management