Mr. Rex Norton  
Vice President, Contracts and Supply Chain Management  
CB&I AREVA MOX Services, LLC  
Savannah River Site  
P.O. Box 7097  
Aiken, SC 29804-7097  

SUBJECT: Contract No. DE-AC02-99CH10888 MOX Fuel Fabrication Facility (MFFF); Assessment Report of CB&I AREVA MOX Services Management of Intermec Subcontract 10888-B-4024  

REFERENCE: DCS-DOE-005661, dated May 18, 2017, MOX Services Factual Accuracy Response to NNSA Assessment MOX-AR-17-0097, Management of Intermec Subcontract 10888-B-4024  

Dear Mr. Norton:

The purpose of the subject assessment was to evaluate the reasonableness of Intermec Subcontract 10888-B-4024 Modification 46, and also the effectiveness of MS’ management of Subcontract 10888-B-4024. The NNSA assessment identified five (5) Concerns and fourteen (14) Findings associated with MOX Services’ management of Subcontract 10888-B-4024. MOX Services is directed to reexamine proposed Modification 46 in light of the enclosed assessment.

The action taken herein is considered to be within the scope of the existing contract and does not authorize the Contractor to incur any additional costs (either direct or indirect) or delay delivery to the Government. If the Contractor considers that carrying out this action will increase contract costs or delay any delivery, the Contractor shall promptly notify the contracting officer orally, confirming and explaining the notification in writing within ten (10) working days. Following submission of the written notice of impacts, the Contractor shall await further direction from the Contracting Officer.

If you have any questions, please contact me or Robert Leugemors at 952-3728.

Lance Nyman  
Lead Administrative Contracting Officer

NA-APM-17-0226
Enclosure:  
MOX-AR-17-0097, Assessment Report of CB&I AREVA MOX Services Management of Intermec Subcontract 10888-B-4024

cc:
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B. Beach, TechSource
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ASSESSMENT REPORT

1. CONCLUSION

NNSA assessed that MOX Services’ (MS) management of the Intermec Subcontract was inadequate:

A. MS’ Management did not ensure that Subcontract 10888-B-4024 requirement to provide all the HVAC design at Subcontract award or to provide design in time to support fabrication was met. This singular, non-compliance was evaluated by NNSA to be a primary root cause of MS’ failure to deliver HVAC fabricated duct on scope, on schedule, and on budget.

Instead, MS delivered 88.5% of duct scope 41 months late resulting in an increase in Subcontract 10888-B-4024’s value of approximately $29 million that was not compliant with Prime Contract 10888 (Concern 1).

B. Further, within the first few months after Subcontract 10888-B-4024 award and certainly within the first year after award, the failure to provide a complete HVAC design was evident. Intermec letter IM-500105-00045, Revision 1, dated October 6, 2011 which was a Request for Equitable Adjustment stated, “Although the project design (HVAC) was to have been finalized prior to award, almost 100% of the contract drawings, for the areas that Intermec has been released to work in, have been revised with many of them being revised multiple times, impacting hundreds of Intermec duct drawings. Additionally, there have been 316 subcontractor requests for information (SR’s) which has taken MOX Services an average of 54 days per SR to close. A review of the earned hours for base scope and change work shows that 77% of the earned hours are on change work and 23% on base scope.”

In light of these numerous and on-going design changes causing significant cost increases, MS’ Management did not take action to identify failures and suspend or stop fabrication efforts until design was completed (Concern 2).

C. NNSA assessed that MS’ failure to obtain the NNSA Contracting Officer’s written consent on fifteen Subcontract 10888-B-4024 Modifications between March 15, 2012 and September 29, 2014 was not compliant with the Prime Contract 10888 requirement of obtaining NNSA Contracting Officer’s written consent on Subcontract Modifications that increased Subcontract 10888-B-4024 cumulative value above $25 million (Concern 3).

D. MS’ implementation of change management and analysis of Modification documentation was inadequate in that its process of distributing costs obscured actions that were not in the scope of Subcontract 10888-B-4024 requirements, such as the purchase of equipment for Intermec at a cost of over $40,000 and remodeling of an off-site facility at $200,000. This was inappropriate because Subcontract 10888-B-4024 specifically required Intermec to provide equipment, labor, materials, and services. Secondly, once MS’ made the decision to change the Fixed Price Subcontract requirements, they should have created a new WBS element to properly capture these costs and avoid commingling them with the cost to fabricate HVAC Ductwork (Concern 4).
E. Based on Findings 2 and 3, NNSA has substantial concerns that the estimating methods for close out of the contract does not properly account for all credits. As a result, MS should revisit all aspects of calculated costs for contract close out and ensure all costs are negotiated in a manner which is in the best interest of the government (Concern 5).

2. OBJECTIVE AND SCOPE

NNSA evaluated the reasonableness of Intermech Subcontract 10888-B-4024 Modification 46, and also the effectiveness of MS’ management of Subcontract 10888-B-4024. NNSA evaluated a sampling of modifications from Subcontract 10888-B-4024 awarded on September 17, 2009 through issuance of Modification 46 on December 15, 2016 to assess MS’ effectiveness and efficiency in management of the Subcontract.

NNSA evaluated a sampling of the Subcontract information listed below:

i. Intermech Subcontract 10888-B-4024 (967 pages)

ii. 46 Subcontract Modifications (5000 + pages)

iii. 357 Cost Proposals comprising hundreds of drawings and millions of dollars

iv. Subcontract Initial Value $18,527,187 to fabricate 1,331,534 pounds of HVAC duct

v. Subcontract End Value $48,142,630 to fabricate 1,005,181 pounds of HVAC duct

vi. Scheduled Period of Performance - forty-two months

vii. Actual Period of Performance – eighty-three months

viii. Invoices (86) detailing millions of dollars distributed among buildings, levels, areas, and milestones

ix. Numerous emails, letters, reports, meeting minutes, and other relevant information

3. ASSESSMENT TEAM

Name: Robert K. Leugemors, Engineer
Organization: DOE NNSA MOX PMO Engineering

Name: Robert Jones, Support Staff
Organization: TechSource, Contractor to DOE NNSA MOX PMO

4. REFERENCES

a. DCS-DOE-005506, dated December 15, 2016, Request for NNSA Contracting Officer’s Consent to Modify MS Subcontract 10888-B-4024, Modification 46, HVAC Fabrication – Intermech Inc.


d. Subcontract Modification 19, dated March 15, 2012, provided over $2 Million for cumulative impacts due to design changes.

e. Subcontract Modification 20, dated March 21, 2012, provided nearly $300K to accelerate fabrication of duct in order to complete Subcontract by June 2013.
f. Subcontract Modification 32, dated September 23, 2013, provided in excess of $600K to cover increased cost of materials.

g. Subcontract Modification 33, dated December 18, 2013, provided in excess of $9 million to extend the period of performance from April 2013 to April 2016 due to numerous design changes.

h. Subcontract Modification 46, draft, incorporate changes to describe the final scope of work performed during performance of the Subcontract.

i. Field Work Directives, various – MS provided direction for Intermech to provide bulk materials to field personnel.

5. CONDUCT OF ASSESSMENT

a. Lines of Inquiry (LOIs) established in assessment plan MOX-AP-17-0097 guided the assessment.

b. NNSA MOX PMO Contracting Officer requested that the MS Subcontract Administrator for the Intermech Subcontract provide access to Intermech eRoom documents. The MS Subcontract Administrator provided access and personally trained a NNSA MOX PMO Contracts administrative assistant to download Intermech Subcontract documents from eRoom. He also answered questions and provided assistance in locating Subcontract documents not available in eRoom.

c. NNSA Assessors reviewed and evaluated the Subcontract and Modifications 7, 19, 20, 32, 33, and 46. They also evaluated pertinent Field Work Directives, several invoices, and cost proposals.

d. NNSA Assessors performed their evaluations of the documentation identified in 5.c as standalone assessments. Evaluation results were identified and listed separately, even if they were similar, within Attachments A through F and summarized in Section 7.

6. ASSESSMENT RESULTS

The NNSA assessment identified five (5) Concerns and fourteen (14) Findings. The Concerns and Findings are listed in Section 7. Information within Attachments A through F contains additional details regarding how NNSA Assessors arrived at their conclusions.

The focus of the review centered on MS’ performance. However, it is important to note that based on letters reviewed, it appears that Intermech made reasonable efforts to communicate and encourage resolution of MS’ Management practices, often volunteering to take actions beyond contract requirements in order to expeditiously proceed with HVAC duct fabrication.
7. **IDENTIFIED CONCERN(S), FINDING(S) and OBSERVATION(S) SUMMARY**

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
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<tbody>
<tr>
<td><strong>Concern 1</strong></td>
<td>MS delivered 88.5% of duct scope, 41 months late resulting in an increase in Subcontract 10888-B-4024 value of approximately $29 million that was not compliant with Prime Contract DE-AC02-99CH10888. (Conclusion) (Attachments A, F)</td>
</tr>
<tr>
<td><strong>Concern 2</strong></td>
<td>In light of these numerous and on-going design changes causing significant cost increases, MS’ Management did not take action to identify failures and suspend or stop fabrication efforts until design was completed. (Conclusion)</td>
</tr>
<tr>
<td><strong>Concern 3</strong></td>
<td>NNSA assessed that MS’ failure to obtain NNSA Contracting Officer’s written consent on fifteen Subcontract 10888-B-4024 Modifications between March 15, 2012 and September 29, 2014 was not compliant with Prime Contract DE-AC02-99CH10888 requirement to obtain NNSA Contracting Officer’s written consent on Subcontract Modifications that increased the Subcontract cumulative value above $25 million. (Attachment F)</td>
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<td><strong>Concern 4</strong></td>
<td>MS implementation of change management and analysis of Modifications documentation was inadequate in that their process of distributing costs obscured actions that were not in the scope of Subcontract requirements such as the purchase of equipment for Intermech at a cost of over $40,000 and remodeling of an off-site facility at $200K. This was inappropriate because the Subcontract specifically required Intermech to provide equipment, labor, materials, and services. Secondly, once MS’ Management made the decision to change the Fixed Price Subcontract requirements they should have created a new WBS element to properly capture these costs and avoid commingling them with the cost to fabricate HVAC Ductwork. (Summary) (Attachments B, C, D, E, F)</td>
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<tr>
<td><strong>Concern 5</strong></td>
<td>Based on Findings 2 and 3, NNSA has substantial concerns that the estimating methods for close out of the contract does not properly account for all credits. As a result, MS should revisit all aspects of calculated costs for contract close out and ensure all costs are negotiated in a manner which is in the best interest of the government. (Attachment A)</td>
</tr>
<tr>
<td><strong>Finding 1</strong></td>
<td>MS failed to comply with the terms of the Subcontract by not providing HVAC design at Subcontract award or in time to support duct fabrication. (Attachment A)</td>
</tr>
<tr>
<td><strong>Finding 2</strong></td>
<td>MS failed to accurately account for all back charge costs and further has not accounted for all rework of duct which is not in the best interest of the government. (Attachment A)</td>
</tr>
<tr>
<td><strong>Finding 3</strong></td>
<td>NNSA assessed that MS should have used actual quantities and dollar amounts from bi-laterally approved firm fixed price Subcontract 10888-B-4024 documents to derive a more accurate closeout credit of $3,123,891. Two independent methods demonstrate that the existing credit is too low and therefore not in the best interest of the government. (Attachment A)</td>
</tr>
<tr>
<td><strong>Finding 4</strong></td>
<td>MS did not identify the $43,425 roll forming machine as government property. (Attachment B)</td>
</tr>
<tr>
<td>Finding 5</td>
<td>MS' incorrect categorization, incorrect identification and incorrect distribution of cost, rendered the purchase of the roll forming machine as unseen in MS project documents. MS bought Intermec a $43,425 piece of equipment in non-compliance with Subcontract, Section G and their processes obscured this non-compliant action. (Attachment B)</td>
</tr>
<tr>
<td>Finding 6</td>
<td>MS' purchase of the $43,425 roll forming machine was not in compliance with Subcontract terms. (Attachment B)</td>
</tr>
<tr>
<td>Finding 7</td>
<td>MS determination and subsequent authorization of payment for Intermec REA for cumulative impacts was not compliant with Prime Contract 10888 and Subcontract 10888-B-4024 requirements. (Attachment C)</td>
</tr>
<tr>
<td>Finding 8</td>
<td>MS did not administer the Subcontract and associated Modifications as firm fixed price because MS allowed Intermec to fabricate duct at a lower rate of production than specified in Subcontract 10888-B-4024. MS' administration of the Subcontract was not in compliance with the terms of the Subcontract. (Attachment D)</td>
</tr>
<tr>
<td>Finding 9</td>
<td>NNSA assessed that acceleration of duct fabrication was not reasonable, because MS was making constant on-going design changes which interfered with Intermec's ability to fabricate duct efficiently as evidenced by the almost $300,000 expended for Modification 20 and achieving less fabricated duct per month during the &quot;acceleration period&quot; than the per month rate of production included the original Subcontract. (Attachment D)</td>
</tr>
<tr>
<td>Finding 10</td>
<td>MS' reimbursement of Intermec for material escalation costs of $617,595.46 was not compliant with firm fixed price Subcontract 10888-B-4024 requirements. (Attachment E)</td>
</tr>
<tr>
<td>Finding 11</td>
<td>MS' reimbursement of Intermec for facility charges of approximately $13.5 million was not compliant with Subcontract 10888-B-4024 requirements. (Attachment F)</td>
</tr>
<tr>
<td>Finding 12</td>
<td>MS directed Intermec to purchase bulk material, for field personnel, in non-compliance with Subcontract 10888-B-4024 requirements. (Attachment F)</td>
</tr>
<tr>
<td>Finding 13</td>
<td>MS applied costs to HVAC duct fabrication for costs not associated with HVAC duct fabrication which caused the actual costs to fabricate duct to be overstated. (Attachment F)</td>
</tr>
<tr>
<td>Finding 14</td>
<td>MS applied costs to one WBS element with funds from a different WBS element. This caused schedule, baseline and reported cost to be out of alignment. (Attachment F)</td>
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8. ATTACHMENTS:

Attachment A  Assessment of Subcontract Modification 46-draft, request to incorporate changes to describe final Scope of Work performed during performance of the Subcontract.

Attachment B  Assessment of Subcontract Modification 7, dated October 4, 2010, incorporated 24 design change cost proposals into the Subcontract.

Attachment C  Assessment of Subcontract Modification 19, dated March 15, 2012, provided over $2 Million for cumulative impacts due to design changes.

Attachment D  Assessment of Subcontract Modification 20, dated March 21, 2012, provided nearly $300K to accelerate fabrication of duct in order to complete Subcontract by June 2013.

Attachment E  Assessment of Subcontract Modification 32, dated September 23, 2013, provided in excess of $600K to cover increased cost of materials.

Attachment F  Assessment of Rework, Purchase of Bulk Material, DOE Consent and Facility Charges.

Prepared:  

Robert Jones, TechSource, Inc. Contractor to NNSA  

Reviewed:  

Robert K. Leugemors, DOE NNSA MOX PMO Engineering  

Approval:  

Lance Numan, DOE NNSA MOX PMO Contracting Officer  

Date  

6/19/17  

6/9/2017  

6/21/17  

6/21/17
1. **Background Summary:**
   A. MOX Services (MS) awarded Subcontract 10888-B-4024 to Intermec Inc. on September 17, 2009.
      i. Subcontract 10888-B-4024 was a Firm Fixed Price (FFP) type subcontract contract.
      ii. Subcontract 10888-B-4024 had a Period of Performance from September 17, 2009 to April 10, 2013.
      iii. Subcontract 10888-B-4024 had a value of $18,527,187.76.
      iv. Subcontract 10888-B-4024 was to fabricate and deliver 1,331,534 pounds of sheet metal ductwork.

2. **Modification 46 of Subcontract 10888-B-4024 - Excerpts:**
   A. MS made a business decision to allow Subcontract 10888-B-4024 to expire, via issuance of
      Modification 46 to the subcontract, via letter DCS-DOE-005506, dated December 15, 2016, to effect the
      revision.
      i. Based on actual weight of duct delivered, Intermec corrected the weight of duct to be fabricated to
         1,157,787 pounds.
      ii. MS estimated that 152,606 pounds of duct remain un-fabricated.
      iii. Subtracting the weight of duct not fabricated from actual weight to be fabricated yields 1,005,181
          pounds of duct Intermec fabricated and delivered to MS.
      iv. Modification 46 would add and remove work items, assessing and crediting of back charges, and
          crediting for work not completed.
      v. Modification 46 would describe final scope of work performed under the subcontract.
      vi. Modification 46 Justification for Award (JFA) stated; “At the time of award, mechanical design was
          incomplete. The Subcontract’s scope of work increased as the design progressed.”

3. **NNSA Assessment of Modification 46 – JFA**
   A. NNSA assessed that via Subcontract 10888-B-4024 Modification 46 MS would implement close out
      activities for Subcontract 10888-B-4024.
      i. NNSA assessed that via Subcontract 10888-B-4024, Sections D and G, MS contracted with
         Intermec to fabricate 1,331,534 pounds of HVAC ductwork for the MFFF as provided in Section D
         of the Contract. (Fact 1)
      ii. NNSA assessed that Intermec’s schedule performance was defined by the Level III Installation
          Schedule in Subcontract 10888-B-4024 Section G. (Fact 2)
      iii. NNSA assessed that via Subcontract 10888-B-4024, Modification 46 MS stated that the amount of
           duct to be fabricated decreased from 1,331,534 pounds at subcontract award (2009) to 1,157,787
           pounds at subcontract closure (2016). (Fact 3)
Attachment A – Modification 46 Evaluation

iv. NNSA assessed that Subcontract 10888-B-4024 was a Firm Fixed Price subcontract. Section G stated, “The Design Status at the subcontract award will be that all HVAC duct design will be furnished for the BAP, BMP and BSR buildings. Support drawings and Integral Welded Attachments (IWAs) will be designed only for the first level of the BAP. Support drawings and IWAs for the remainder of the ductwork will be completed in time to support duct fabrication.” (Fact 4)

v. NNSA assessed that Subcontract 10888-B-4024 was a Firm Fixed Price subcontract. Section A stated that the end date for Subcontract 10888-B-4024 was April 2013 with a value of $18,527,187.76. (Fact 5)

vi. NNSA assessed that via Subcontract 10888-B-4024, Modification 1, MS stated that Subcontract 10888-B-4024 proposal was based on applicable drawings in specification DCS01-QGA-DS-SPE-V-15890, Rev 1, paragraph 2.4A for buildings BMP and BAP. (Fact 6)

vii. NNSA assessed that via Subcontract 10888-B-4024, Modification 5, MS revised the set of applicable drawings listed in specification DCS01-QGA-DS-SPE-V-15890, Rev 1, paragraph 2.4A. (Fact 7)

viii. NNSA assessed that via Subcontract 10888-B-4024 modifications MS increased the subcontract value from ~ $18 million to ~ $48 million. (Fact 8)

ix. NNSA assessed that Intermech notified MOX Services, via letter IM-500105-0045 Rev 1, transmitting a cumulative impacts REA, of MOX Services failure to either provide HVAC duct design at subcontract award or all design to “be completed in time to support duct fabrication.” (Fact 9)

x. NNSA assessed that Intermech letter IM-500105-0045 Rev 1 stated that MOX Services failure to provide HVAC duct design at subcontract award or all design to “be completed in time to support duct fabrication” was substantiated in the referenced letter that stated, “The effects of these continual changes have been well documented previously in letters IM-500105-0018 dated 3-18-10, IM-500105-0025 dated 5-19-10, IM-500105-0027 dated 5-20-10, IM-500105-0028 dated 5-25-10, IM-500105-0033 dated 8-17-10, & IM500105-0034 dated 8-18-10.” (Fact 10)

xi. NNSA assessed that Intermech developed their cumulative impacts REA to address multiple design changes due to MOX Services failure to either provide HVAC duct design at subcontract award or all design to “be completed in time to support duct fabrication.” (Fact 11)

xii. NNSA assessed that MOX Services financially validated Intermech’s claim that HVAC duct design was neither completed at subcontract award nor all design “completed in time to support duct fabrication” by authorizing Modification 19 which provided additional funding associated with the cumulative impacts REA that made the claim. (Fact 12)

xiii. NNSA assessed that MOX Services Modification 19 Justification for Award stated: This is a modification to an existing subcontract to compensate the vendor for its request for equitable adjustment resulting from the cumulative impact of 100% design changes and delayed releases of areas affecting 975 ductwork drawings with numerous areas on hold. Many of the design changes were issued after the ductwork was detailed or in the fabrication stage, which caused re-detailing and re-fabrication of completed or in-process ductwork. The design changes caused increased project
Attachment A – Modification 46 Evaluation

management costs, disruption of project sequences, and schedule slippage which will require acceleration to complete by the subcontract completion date. It was determined that the REA has merit. (Fact 13)

xiv. NNSA assessed that Intermech letter IM-500105-0070, dated October 6, 2016, stated: “The effort to validate the cost & pricing data required Intermech to go back through 45 contract modification with 194 RFCP’s and almost 8,000 change items, sorting each item by building, level, dollar value, and Turnover Number. This review and statusing would not have been required had the design been complete enabling Intermech to complete the contract.” (Fact 14)

xv. NNSA assessed that MOX Services validated Intermech’s claim in letter IM-500105-0070 that MS HVAC duct design was not completed in time to support duct fabrication by including the letter in their request to NNSA for Modification 46 consent. (Fact 15)

xvi. NNSA assessed that MS failed to comply with the terms of the subcontract by not providing all HVAC ductwork design either at subcontract award or in time to support duct fabrication. (Finding 1 – pertains to Facts 1 – 15)

4. NNSA Assessment of Modification 46 – Back Charges

A. NNSA assessed that via Subcontract 10888-B-4024 Modification 46 MS would implement a credit to account for Intermech fabrication errors.

i. NNSA assessed that Intermech proposal CP-9314, R4 for RFCP-4024-195, dated 11/15/16, Section G, Credit for Fabrication Errors (Back Charges) stated Intermech errors identified to-date amounted to a credit of $45,900. (Fact 16)

ii. NNSA assessed that MS arrived at the value of $45,900 based on an estimated cost to correct Intermech fabrication errors identified during installation of HVAC duct. (Fact 17)

iii. NNSA assessed that MS letter DCS-DOE-005560, dated January 30, 2017, and accompanying spreadsheet stated the amount of HVAC duct on which ‘final attributes’ had been achieved was 93,558 pounds. (Fact 18)

iv. NNSA assessed that MOX Services estimated Back Charges hourly rate for a sheet metal worker base at $53.77. 2% was added for a Foreman (50 to 1 ratio of Foreman to Craft assuming same billing rate), 25% for Superior Management and Staff, and 8% for MOX Services Staff Support. (Fact 19)

v. NNSA assessed that the overhead rates have no basis provided. Construction work at MOX uses substantially more than one Foreman to 50 Craft. Further, engineering, quality assurance, project management, project controls, procurement, etc. are substantially more than 8% of Craft cost. NNSA estimates that project support costs of more than 300% of the craft per hour rate resulting in a potential back charge of approximately $150,000 instead of the $45,900 estimates. MOX Services should provide actual data of foreman and all overhead costs (quality, engineering, project controls, contracts etc) per craft hour to develop a substantially higher and more accurate estimate of back charge costs. Further, based on Intermech Fabrication errors on the first 93,558 lbs of duct, NNSA assessed that once MS has completed determination of final attributes for HVAC duct fabricated and delivered by Intermech, additional fabrication errors will certainly be identified. MOX Services has failed to identify and make any attempt to estimate this cost in support of project closeout. There are
Attachment A – Modification 46 Evaluation

A number of methods to estimate fabrication errors. For example, as previously stated, Intermech fabricated and delivered 1,005,181 pounds of HVAC duct. Therefore, using a simple ratio of $45,900 for 93,558 pounds. The back charge credit for 1,005,181 pounds should be on the order of approximately $400K. Further, once a more accurate all in support cost is developed, the credit could be more than $1.6M. MS should revise Modification 46 to provide a credit to cover the full anticipatory cost for yet to be identified Intermech fabrication errors. These two compounding deficiencies demonstrate that MOX Services failed to accurately account for all back charge costs and further has not accounted for all rework of duct which is not in the best interest of the Government. (Finding 2 – pertains to Facts 16 – 19)

5. NNSA Assessment of Modification 46 – Cost / Price Analysis Methodology
A. NNSA assessed that via Subcontract 10888-B-4024 Modification 46 MS would implement close out activities.
   i. NNSA assessed that MS RFCP-4024-195, dated 11/15/16, requested Intermech to furnish credits for work not completed in order complete subcontract closeout. (Fact 20)
   ii. NNSA assessed that Modification 46, JFA, paragraph I.G, stated that MS directed Intermech to prepare their credits using proportions and percentages compared to original bid prices. (Fact 21)
   iii. NNSA assessed that MS used the credits provided by Intermech and arrived at a credit of $2,596,118. This amount included a credit for back charges of $45,900. (Fact 22)
   iv. NNSA assessed that MS then added in the total cost for REAs 9206 and 9207 ($177,050.) and arrived at a total credit of $2,419,068. (Fact 23)
   v. NNSA assessed that Intermech Invoice 86, dated 8/3/2016, provided the following information: (Fact 24)
      1) Project Cost Value through Modification 45 was $48,142,630.11.
      2) Project Complete through Modification 45 was $44,887,588.90.
      3) Balance to Finish through Modification 45 was $3,255,041.21.
   vi. NNSA assessed that Summation of Intermech invoices through invoice 86 equaled $44,887,499. (Fact 25)
   vii. NNSA assessed that Intermech Invoice 4024-001-0017 provided the following breakout costs for the fixed price contract as follows: $664,028 for Submittals, $5,253,435 for Material, $6,158,656.56 for Fabrication, and $5,971,841.4 for Staff, Facility, Utilities, Equip. etc. (Overhead). NNSA assessed that in Modification 46, the “Credit for Base Scope Fabrication Labor Not Furnished” did not calculate and include a reduced Overhead cost associated with duct not delivered. (Fact 26)
   viii. NNSA assessed that MS methodology was not sufficiently accurate to be effective during close-out of Firm Fixed Price Subcontract 10888-B-4024. MS should have started with Invoice 86, approved by MS and Intermech, Balance to Finish and then applied any additions and credits.

NNSA assessors calculation A, NNSA assessors used MS Invoice 86 Balance to Finish amount of $3,255,041 as the initial credit then added in the same MS credit for back charges ($45,900) and
Attachment A – Modification 46 Evaluation

subtracting out the same MS total costs for REAs 9206 and 9207 ($177,050) yields a more accurate total credit of $3,123,891 versus the MS derived credit of $2,419,068.

NNSA assessors calculation B. NNSA assessors, used values from Fact 26 above, to develop a second calculation. Using a ratio of Overhead to Submittals and Fabrication yields $5,971,841.4 / ($664,028 + $6,158,656.56) = 0.8779. Applying this ratio to the Credit calculated without Overhead of $737,001 yields a more accurate credit of 0.8779 X $737,001 + $2,419,068 (MOX Estimate without Overhead) = $3,066,056.68

NNSA assessed that MS should have used actual quantities and dollar amounts from bi-laterally approved firm fixed price Subcontract 10888-B-4024 documents to derive a more accurate closeout credit of $3,123,891. Two independent methods demonstrate that the existing credit is too low and therefore not in the best interest of the Government. *(Finding 3 – pertains to Facts 20 – 26)*

ix. Based on Findings 2 and 3, NNSA has substantial concerns that the estimating methods for close out of the contract does not properly account for all credits. As a result, MS should revisit all aspects of calculated costs for contract close out and ensure all costs are negotiated in a manner which is in the best interest of the government. *(Concern 5)*
A. **Background Summary:**

1. On September 17, 2009, MOX Services (MS) awarded Subcontract 10888-B-4024 (subcontract) to Intermech Inc.
   - Subcontract was a Firm Fixed Price (FFP) type subcontract with a Period of Performance from September 17, 2009 to April 10, 2013.
   - Subcontract had a value of $18,527,187.76 for which Intermech was to fabricate and deliver approximately 1,331,534 pounds of sheet metal ductwork.

2. On December 01, 2009, MS issued RFCP-005 which added or revised drawings and specifications. One new series of detail drawings for round supports added by RFCP-005 was DCS01-ZMS-DS-PLD-M-11196.

3. On March 09, 2010, Intermech provided their cost proposal to RFCP-005. Intermech acknowledged receipt of the new series of round support drawings and stated that costs would be assessed as identified on affected drawings.

4. On May 26, 2010, Intermech issued Supplier/Subcontractor Request B4024-SR-00098 (SR-98). SR-98 stated that subcontract documents did not identify the fabrication method for Integral Welded Attachments (IWAs) and requested confirmation that both roll forming and break forming were acceptable fabrication methods.

5. On June 29, 2010, MS Engineering responded that document DCS01-ZMS-DS-PLD-M-11196, sheets 08 thru 19, called for 'rolled' sheets and that break forming was not an acceptable method.

6. On August 27, 2010, Intermech issued Cost Proposal 26, R1 (CP-26). CP-26 was valued at $87,965. CP-26 contained proposed costs for various HVAC design changes and also the purchase of a roll former piece of equipment for $43,425.

7. On September 29, 2010, MS approved Modification 007. Modification 007 incorporated various RFCPs and CPs and was valued at $665,933.56. Modification 007 incorporated CP-26 into the HVAC subcontract. Modification 007 described CP-26 as 'Drawing and Spec Changes' and was valued at $87,965.

8. On October 4, 2010, MS approved Intermech invoice 010. Invoice 010 contained an initial payment of $257,887 for Modification 007. On August 20, 2013, MS approved Intermech invoice 048. Invoice 048 contained the final payment for Modification 007 (total of $665,933.56). Intermech invoices distributed costs for Modification 007 to areas and levels in the MOX Facility.

B. **Subcontract Excerpts:**

1. Section G, Summary of Work, Paragraph 1, Description of Work - General:
   Subparagraph 1.1: "... subcontractor shall supply all the necessary labor, materials, equipment, and services, for the execution of this scope of work."
Attachment B – Modification 07 Evaluation

2. Section G, Summary of Work, Paragraph 2, Description of Work - Specific: 
   “The following materials and equipment will be procured, fabricated, delivered by the 
   Subcontractor. This includes; HVAC Integral Welded Attachments (IWAs) to ductwork. This 
   includes rolled plate attached to the duct and or trunnions attached to the duct or rolled plate. 
   (IWAs fabricated by the Fabricator and installed by others.)”

   the rolled wrapper plates shall be used for the rest of the ductwork.”

C. NNSA Assessment of Intermec and MS Actions Regarding Purchase of Roll Form Machine:

On September 17, 2009, subcontract 10888-B-4024 (subcontract) was approved by MS. Per the 
firm fixed price subcontract Intermec was to deliver fabricated duct to MS and also subcontract, 
Section G, subsection 1.1, Scope of Work stated that Intermec was responsible to supply all the 
labor, materials, equipment and services, for the execution of this scope of work which had a 
period of performance of September 2009 to April 2013.

1. SR-98 and CP-26

On May 26, 2010, Intermec asserted, via SR-98, “The contract documents do not identify the 
fabrication method for IWAs. Please confirm both roll forming and break forming are acceptable 
methods.” Contrary to Intermec’s assertion, Subcontract Sections D and G stated that IWAs 
would be ‘rolled plate’. And furthermore, MS Engineering added drawing DCS01-ZMS-DS-PLD-
M-11196, (11196) via RFCP-05, on December 01, 2009 which stated that IWAs would be rolled 
plate. Intermec acknowledged addition of drawing 11196 on March 09, 2010. NNSA assessed the 
MS Buyer and MS Subcontract Technical Representative (STR) should have stopped the 
processing of SR-98 upon receipt thereof because the fabrication method for IWAs was specified 
in subcontract documents.

NNSA assessed that the MS Buyer and MS STR chose not to stop the processing of SR-98 and 
passed the request to MS Engineering. MS Engineering responded on June 1, 2010 that drawing 
11196 specified that IWA fabrication would be ‘rolled plate’ and added that ‘break forming’ was 
not an acceptable method for fabricating IWAs. NNSA assessed that MS did not address the 
Intermec assertion regarding subcontract documents not identifying the fabrication method for 
Integral Welded Attachments (IWAs). MS STR accepted the MS Engineering evaluation on June 
29, 2010. Intermec issued Cost Proposal 26 (CP-26) in which they cited the MS response to SR-
98 and included the purchase of a $43,425 hydraulic roll forming machine. NNSA assessed that 
Intermec categorized the roll forming machine as material even though it was Government 
Property.

2. Modification-007

NNSA assessed that MS incorporated CP-26 along with other cost proposals into Modification 
007. Modification 007 was valued at $665,933. Intermec received payment for Modification 007 
via submitted invoices. MS personnel stated, in Modification 007 documents, they reviewed, 
evaluated, negotiated and determined that CP-26 was technically appropriate, fair and reasonable.
Attachment B – Modification 07 Evaluation

NNSA assessed that MS identified CP-26 as ‘Drawing and Spec Changes’ on eight separate occasions which obscured the purchase of the roll forming machine. Reference, (a) Modification 007, (b) Modification 007 Justification for Award and (c) Modification 007 Contract Review Board evaluation. Finding 3.

NNSA assessed that MS personnel failed to identify the $43,425 roll forming machine as Government Property. Finding 4.

NNSA assessed that MS identified the $43,425 cost of the roll forming machine as being applicable to fabrication of HVAC duct in differing areas/levels in the MOX Facility via Modification 007 and pertinent invoices. Incorrect categorization, incorrect identification and incorrect distribution of cost rendered the purchase of the roll forming machine as unseen in MS project documents. NNSA assessed that MS consciously bought Intermec a $43,425 piece of equipment in non-compliance with Subcontract, Section G and their processes obscured this non-compliant action. Finding 5.

NNSA assessed that the MS purchase of the $43,425 roll forming machine was not in compliance with subcontract terms. Finding 6.
1. **Background Summary:**
   A. MOX Services (MS) awarded Subcontract 10888-B-4024 to Intermesh Inc. on September 17, 2009.
      - Subcontract 10888-B-4024 was a Firm Fixed Price (FFP) type subcontract with a Period of Performance from September 17, 2009 to April 10, 2013.
      - Subcontract 10888-B-4024 had a value of $18,527,187.76 for which Intermesh was to fabricate and deliver 1,331,534 pounds of sheet metal ductwork as detailed in Section D of the contract.

   Intermesh issued a Request for Equitable Adjustment (REA) in October 2011 requesting payment of $2,365,216 due to cumulative impacts of numerous design changes issued by MS. MS determined that the Intermesh REA for cumulative impacts had merit and authorized payment of $2,365,216 via Modification 19. This assessment addressed the Intermesh and MS justifications that led to the authorization of subcontract Modification 19 to the subcontract.

2. **Subcontract Excerpts:**
   A. Section E, Terms and Conditions, paragraph 1.25, Changes:
      Paragraph Subsection A: “MOX Services may make changes, at any time, by written notice in any one or more of the following: (1) description of the Work to be performed, (2) place of performance, (3) delivery schedule… If any such change causes a difference in the price, or the time required for performance, an equitable adjustment shall be made in the price and/or delivery schedule and other affected provisions. Such adjustment shall be made by written modification to this Subcontract, signed by both parties.”

      Paragraph Subsection C: “Any changes, extras or additional Work made or performed by Subcontractor without written approval of MOX Services shall be at the sole risk and expense of the Subcontractor.”

   B. Section E, Terms and Conditions, paragraph 1.26, Pricing of Adjustments:
      “When costs are a factor in any determination of a Subcontract price adjustment pursuant to the Changes clause of the subcontract, such costs shall be in accordance with the contract cost principles in Part 31 of the Federal Acquisition Regulation.”

   C. Section G, Summary of Work:
      Paragraph 1, Description of Work - General:
      Page 3 of 5, subparagraph 1.1.3: “The contractor is responsible to carefully review all drawings, specs, procedures, and requirements of this package and identify the quantity, and types of items to be installed.”

   D. Paragraph 2, Description of Work - Specific:
      Page 3 of 5: “The contractor shall develop a complete understanding of all referenced Specifications, Drawings, Sketches and Standards prior to start of work.”

      Page 4 of 5: “The Design Status at the subcontract award will be that all HVAC duct design will be furnished for the BAP, BMP and BSR buildings. Support drawings and Integral Welded Attachments (IWAs) will be designed only for the first level of the BAP. Support drawings and IWAs for the remainder of the ductwork will be completed in time to support duct fabrication.”
3. **Intermec Assertions in REA for Cumulative Impacts:**
Intermec issued their cumulative impacts REA via letter IM-500105-00045, R1, dated October 6, 2011. The subject letter contained the following assertions:

A. Intermec has incurred additional costs as a result of continual design changes.

B. Intermec has incurred additional costs over and above those direct costs added by contract modification.

C. Intermec has expended an extraordinary amount of time trying to stay current with the latest revised documents that Intermec's base contract work has been severely impacted.

D. Intermec requesting an equitable adjustment for inefficiency resulting from the cumulative impact of changes.

E. This request covers the time period January 1, 2010 to June 30, 2011. It is anticipated that non-reimbursed impacts going forward will be evaluated and requested every 6 months.

F. The large number and magnitude of the changes through June 30, 2011 have resulted in non-reimbursed costs impacts far in excess of the direct cost of the sum of individual change orders.

G. As a result of these changes Intermec has spent an extraordinary amount of time trying to track and stay current with the latest revised drawings.

H. The unintended impact of the changes is that Intermec has accomplished very little to date in providing fabricated duct.

I. REA value based on comparison of earned hours to spent hours.

4. **MS Evaluations of Intermec REA for Cumulative Impacts:**
MS determined the Intermec REA for cumulative Impacts had merit and authorized payment of $2,365,216 via Subcontract Modification 19.

A. MS Justification for Award (JFA) stated that MS design changes caused increased project management costs, disruption of project sequences and schedule slippage.

B. MS JFA referenced a cost analysis performed by MS Cost Analyst that was based on earned value.

C. MS JFA referenced a MS Independent cost estimate that was based on amount of duct delivered to amount of dollars spent.
5. **NNSA Assessment of Intermech and MOX Services Justifications for REA for Cumulative Impacts:**

<table>
<thead>
<tr>
<th>Item</th>
<th>Intermech Assertions</th>
<th>NNSA Assessment of Intermech Assertions for REA</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.A</td>
<td>Intermech has incurred additional costs as a result of continual design changes.</td>
<td>Intermech REA provided no evidence regarding any incurred additional costs over and above those costs added by subcontract modification. The base subcontract and all associated modifications were firm fixed price. Intermech negotiated and approved the scope and value of the base subcontract and each modification. Further, Intermech provided no evidence that MS directed them to perform any work outside of the fully compensated base subcontract and modifications. Intermech provided no evidence to support their justifications.</td>
</tr>
<tr>
<td>3.B</td>
<td>Intermech has incurred additional costs over and above those direct costs added by contract modification.</td>
<td>NNSA assessed that Intermech Assertions 3.A and 3.B do not have merit regarding providing evidence to warrant MOX Services paying Intermech &gt;$2 million in addition to the bi-laterally agreed to modifications.</td>
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</tbody>
</table>
### Attachment C – Modification 19 Assessment

<table>
<thead>
<tr>
<th>Item</th>
<th>NNSA Assessment of Intermech Assertions and MOX Services Justifications for REA for Cumulative Impacts:</th>
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<tr>
<td>3.C</td>
<td>Intermech has expended an extraordinary amount of time trying to stay current with the latest revised documents that Intermech’s base contract work has been severely impacted.</td>
</tr>
<tr>
<td>3.G</td>
<td>As a result of these changes Intermech has spent an extraordinary amount of time trying to track and stay current with the latest revised drawings.</td>
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</table>

Intermech assertion(s) 3.C and 3.G are factual but not relevant. Subcontract, Section G, Summary of Work stated:

Paragraph 1, Description of Work - General: Page 3 of 5, subparagraph 1.1.3; “The contractor is responsible to carefully review all drawings, specs, procedures, and requirements of this package and identify the quantity, and types of items to be installed.” Further, the cost and schedule for each modification is accepted and signed by Intermech.

Paragraph 2, Description of Work - Specific: Page 3 of 5, “The contractor shall develop a complete understanding of all referenced Specifications, Drawings, Sketches and Standards prior to start of Work.”

Subcontract, Section G requires Intermech to review and understand all drawings. Further, the cost and schedule for each modification is accepted and signed by Intermech.

NNSA assessed that Intermech Assertions 3.C and 3.G do not have merit regarding providing evidence to warrant MOX Services paying Intermech >$2 million in addition to the bi-laterally agreed to modifications.
Attachment C – Modification 19 Assessment

<table>
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<tr>
<th>Item</th>
<th>NNSA Assessment of Intermech Assertions and MOX Services Justifications for REA for Cumulative Impacts:</th>
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<tr>
<td>3.D</td>
<td>Intermech requesting an equitable adjustment for inefficiency resulting from the cumulative impact of changes.</td>
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<tr>
<th>Item</th>
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<tr>
<td></td>
<td>Subcontract and all modifications were firm fixed price. Intermech efficiency is the responsibility of Intermech. Intermech approved the base Scope of Work and value and Intermech approved each modification Scope of Work and value. Intermech is solely responsible to provide the agreed upon Scope of Work for the agreed upon value.</td>
</tr>
<tr>
<td></td>
<td>Subcontract, Section E, Terms and Conditions, paragraph 1.25, Changes: Paragraph subsection A, MOX Services may make changes, at any time, by written notice in any one or more of the following: (1) description of the Work to be performed, (2) place of performance, (3) delivery schedule, ... If any such change causes a difference in the price, or the time required for performance, an equitable adjustment shall be made in the price and/or delivery schedule and other affected provisions. Such adjustment shall be made by written modification to this Subcontract, signed by both parties. Paragraph subsection C, Any changes, extras, or additional work made or performed by Intermech without written approval of MS shall be at the sole risk and expense of Intermech. Subcontract allowed MS to make changes at any time and allowed Intermech to be compensated for each change. Intermech agreed to all subcontract firm fixed price modifications and were adequately compensated based on their signature on each modification. NNSA assessed that Intermech Assertion 3.D does not have merit regarding providing evidence to warrant MOX Services paying Intermech &gt;$2 million in addition to the bi-laterally agreed to modifications.</td>
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<td>Item</td>
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<tr>
<td>3.E</td>
<td>This request covers the time period January 1, 2010 to June 30, 2011. It is anticipated that non-reimbursed impacts going forward will be evaluated and requested every 6 months.</td>
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<tr>
<td>3.F</td>
<td>The large number and magnitude of the changes through June 30, 2011 have resulted in non-reimbursed costs impacts far in excess of the direct cost of the sum of individual change orders.</td>
</tr>
<tr>
<td>3.H</td>
<td>The unintended impact of the changes is that Intermech has accomplished very little to date in providing fabricated duct.</td>
</tr>
<tr>
<td>3.I</td>
<td>REA value based on comparison of earned hours to spent hours.</td>
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<tr>
<td>Item</td>
<td>MOX Services Justifications</td>
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<tr>
<td>4.A</td>
<td>MS Justification for Award (JFA) stated that MS design changes caused increased project management costs, disruption of project sequences and schedule slippage.</td>
</tr>
<tr>
<td>4.B</td>
<td>MS JFA referenced a cost analysis performed by MS Cost Analyst that was based on earned value.</td>
</tr>
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<td>4.C</td>
<td>MS JFA referenced a MS Independent cost estimate that was based on amount of duct delivered to amount of dollars spent.</td>
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## Attachment C – Modification 19 Assessment

<table>
<thead>
<tr>
<th>Item</th>
<th>NNSA Additional Observations (AO) of Modification 19 of the Subcontract</th>
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<tbody>
<tr>
<td>AO.1</td>
<td>Modification 19 of the subcontract, Section D page 3 of 4 contained two errors that were not recognized during MS evaluations. The two errors were the valuation of Modification 16 and the Total Price. Modification 16 was noted as $2,434,682.00 which was the same amount as proposed for Subcontract Modification 19 prior to the final negotiated value of $2,365,216.00. The actual value of Modification 16 was $429,853 which was approximately $2 Million lower than stated. Further, the total price noted of $25,270,491 was almost $2 Million less than the total dollar amounts noted on page 3 of 4 but did inadvertently result in an accurate total of the Total Price including Modifications. NNSA assessed that both errors offset each other such that the end result was of no consequence other than to demonstrate the lack of due diligence in subcontract administration.</td>
</tr>
<tr>
<td>AO.2</td>
<td>Modification 19 of the subcontract, JFA, section XXI, Price Reasonableness, references MS Estimate in their determination. The MS Estimate, dated November 3, 2011 uses data that is not relevant with respect to the Intermech REA. MS Estimator used a value for current total of subcontract dollars of $18,527,187 while the Intermech REA used a date of June 30, 2011 when the current total of subcontract dollars was $20,821,339. MS Estimator used a current total of subcontract dollars spent as $4,784,172 whereas at June 30, 2011 the current total of subcontract dollars spent was through Invoice 19 which was $6,235,622. NNSA assessed these errors have no consequence other than to demonstrate the lack of due diligence in subcontract administration.</td>
</tr>
</tbody>
</table>
**Attachment C – Modification 19 Assessment**

| AO.3 | Intermech justified their REA using an earned value methodology for a firm fixed price contract and MS JFA followed suit and used the self-same methodology to determine if the REA had merit.  

There is no dispute that MS issued a large volume of design changes that resulted in substantial inefficiencies across all organizations. However, Intermech was always fully compensated for work performed.  

NNSA can locate no reference in MS procedures that provide the requirements for evaluating requests for equitable adjustments dealing with cumulative impacts. MS personnel used their judgement in evaluating the Intermech REA.  

NNSA assessed that MS did not evaluate the Intermech REA against subcontract requirements in Section E, paragraph 1.25, Changes.  

NNSA assessed that MS did not evaluate the Intermech REA against the requirements in Section E, paragraph 1.26, Pricing of Adjustments and the referenced FAR Part 31.201-2, Determining Allowability.  

NNSA assessed that the Intermech REA costs are not in compliance with the subcontract requirements and therefore MS should have denied the Intermech REA. |
| AO.4 | MS issued Modification 13 of the subcontract on August 10, 2011. Modification 13 provided $806,292 for additional in-shop staff to manage the volume of ductwork design changes as requested by Intermech. MS authorized payment of Modification 13 via approval of Invoice 022 on September 14, 2011. And the subject Intermech REA was issued on October 6, 2011.  

There is no dispute that MS issued a large volume of design changes that resulted in substantial inefficiencies across all organizations. However, Intermech was always fully compensated for work performed.  

NNSA assessed that the Intermech REA and the MS determination were flawed and further assessed that neither provided any evidence to warrant MOX Services paying Intermech >$2 million for fabricating no HVAC ductwork in addition to the bi-laterally agreed to modifications. |
6. **NNSA assessment of Subcontract Modification 19:**

   Subcontract, Section G, Scope of Work stated that Intermech was responsible to supply all the labor, materials, equipment and services, for the execution of this scope of work.

   A. NNSA assessed that MS provided no supporting evidence that Intermech executed any scope of work associated with Modification 19. *(Fact 27)*

   B. NNSA assessed that MS distributed costs for Modification 19 against fabrication of HVAC duct although no duct was fabricated. *(Fact 28)*

   C. NNSA assessed that MS has no procedures to guide personnel regarding evaluating REAs based on cumulative impacts. *(Fact 29)*

   D. NNSA assessed that MS fully compensated Intermech for work performed during execution of Subcontract 10888-B-4024 via bi-laterally approved modifications executed prior to Modification 19. *(Fact 30)*

   E. NNSA assessed that MS fully compensated Intermech for additional staff to manage design changes via Modification 13. *(Fact 31)*

   F. NNSA assessed that MS provided no basis for using earned value to evaluate a firm fixed price cumulative impacts subcontract modification. *(Fact 32)*

   G. NNSA assessed that MS provided no supporting evidence that they evaluated the Intermech REA against FAR Part 31.201-2. *(Fact 33)*

   H. NNSA assessed that MS provided no supporting evidence that they evaluated the Intermech REA against the requirements of Subcontract 10888-B-4024. *(Fact 34)*

   I. NNSA assessed that MS provided no supporting evidence regarding the reasonableness of Modification 19 against FAR Part 31.201-3. *(Fact 35)*

   J. NNSA assessed that the entire value of Modification 19 ($2,365,216) was not compliant with Prime Contract 10888 and Subcontract 10888-B-4024 requirements. *(Finding 7 – pertains to Facts 27-35)*
Attachment D – Modification 20 Evaluation

1. Subcontract Background:
   A. MOX Services awarded Subcontract 10888-B-4024 (subcontract) to Intermec Inc. on September 17, 2009.
      i. Subcontract was a Firm Fixed Price (FFP) type contract.
      ii. Subcontract had a Period of Performance from September 17, 2009 to April 10, 2013.
      iii. Subcontract had a value of $18,527,187.
      iv. Subcontract was to fabricate and deliver 1,331,534 pounds of ductwork as defined by Section D of the subcontract.
   B. Intermec’s initial delivery of fabricated duct was in June 2010.
   C. Duration between June 2010 and April 2013 was 35 months. Therefore, Intermec had to deliver fabricated duct at an average rate of 38,043 pounds per month to comply with the Subcontract end date.

2. Modification 20 to the Subcontract Accelerate Duct Fabrication Background:
      i. Modification 20 had a value of $293,983.
      iii. Intermec proposal IM-500105-0049, R2 contained:
          o Reason for proposal was a response to MS RFCP-022 which requested Intermec to provide a proposal to accelerate duct fabrication.
          o Over $80,000 for facility renovations.
          o Over $120,000 for equipment rental.
          o Over $47,000 for additional personnel.
          o Fifteen month duration of accelerated fabrication with a target completion date of June 15, 2013.
          o Included two activities purportedly not in original scope but were addressed in 2010:
             ▪ Fabricating holes in flanges and
             ▪ Forming IWAs.
      iv. Intermec proposal IM-500105-0047, R0, Acceleration Plan, dated October 6, 2011 contained:
          o MS would complete their design by March 2012.
3. **Modification 21 to the Subcontract – Background:**
   
   A. MOX Services approved Modification 21 on May 14, 2012.
      
      i. Modification 21 had a value of $403,145.
      
      
      iii. Intermech request IM-500105-0048 contained the following:
           
           o Over $400,000 for additional personnel.
           o Reason for request was additional personnel were needed to manage ‘constant on-going design changes’.

4. **NNSA Assessment of Modification 20 – Assertions:**
   
   A. NNSA assessed that Intermech’s proposal contained two assertions that were inappropriate because the issues had already been resolved. Modification 20 gave Intermech the opportunity for relief for previous issues not resolved to their satisfaction. Intermech assertions and MS resolutions:
      
      i. Intermech assertion that providing holes in flanges was not in their scope was resolved by MS via letters DCS-Vendor-012715, dated June 03, 2010 and DCS-Vendor-013712, dated August 12, 2010 wherein MS provided explanation to Intermech that providing bolt holes in flanges was a subcontract requirement and considered the matter closed. Therefore, MS should have rejected and disallowed Intermech from raising the issue again in 2012.
      
      ii. Intermech asserted that 3/8” IWA plates was unknown at the time of original proposal. This issue was addressed via Modification 7, dated October 4, 2010 and Intermech Cost Proposal CP-26, dated August 27, 2010. Therefore, MS should have rejected and disallowed Intermech from raising the issue again in 2012.

5. **NNSA Assessment of Modification 20 - Acceleration:**
   
   A. NNSA assessed Modification 20 acceleration modification was never realized because, during the time period between March 2012 and June 2013, Intermech actually delivered 413,179 pounds of duct at a fabrication rate of 27,545 pounds per month. This fabrication rate was less than the original subcontract rate of 38,043 pounds per month. (Fact 36)

   B. NNSA assessed that the firm fixed price subcontract provided an inherent incentive for Intermech to finish early. MS did not administer the subcontract and associated modifications as firm fixed price because MS allowed Intermech to fabricate duct at a lower capability than specified in Subcontract 4024. MS administration of the subcontract was not in compliance with the terms of the subcontract. (Finding 8 – pertains to Fact 36)

   C. NNSA assessed that acceleration of duct fabrication was not reasonable, because MS was making constant on-going design changes which interfered with Intermech’s ability to fabricate duct efficiently as evidenced by the almost $300,000 expended for Modification 20 and
Attachment D – Modification 20 Evaluation

achieving less fabricated duct per month during the “acceleration period” than the per month rate of production in the original subcontract. (Finding 9 – pertains to Fact 36)
Attachment E – Modification 32 Evaluation

1. **Background Narrative:**
   A. MOX Services (MS) awarded Subcontract 10888-B-4024 (subcontract) to Intermech Inc. on September 17, 2009.
      i. Subcontract was a Firm Fixed Price (FFP) type contract.
      ii. Subcontract had a Period of Performance from September 17, 2009 to April 10, 2013.
      iii. Subcontract had a value of $18,527,187.76.
      iv. Subcontract was to fabricate and deliver 1,331,534 pounds (estimated) of sheet metal ductwork.

2. **Modification 32 to the Subcontract - Excerpts:**
   A. MS based Modification 32 on four cost changes to the subcontract.
      i. Three of the four cost changes resulted in a decrease of $886,241.41 to the subcontract value due to scope deletions and/or duplication of charges in a previous modification.
      ii. One cost change resulted in an increase of $617,595.46 to the subcontract value due to an increase in the cost of material purchased by Intermech.
      iii. Summation of the four cost changes resulted in a net decrease of $268,645.95 to the subcontract value.
      iv. MS referenced Intermech Request for Equitable Adjustment IM-50015-00054 (REA-54) as the basis for the increase in material costs due to re-design of HVAC duct by MS.
      v. MS approved Modification 32 on September 23, 2013.

3. **Justification of Award (JFA) for Modification 32 – Excerpts:**
   A. MS approved Modification 32 JFA contained the following statements regarding the cost of material.
      i. Section I.A(3), Summary, MS stated that REA-54 justification for the increased material cost was due to re-design of HVAC duct.
      ii. Section I.G(3), Summary, MS stated that REA-54 justification for the increased material cost was due to re-design of HVAC duct.
      iii. Section I.H, Summary, MS stated that the justification for the increased material cost was due to the escalation of the price of raw steel.
      iv. Section XVIII, Technical Evaluation, MS stated that the MS Subcontract Technical Representative (STR) determined the proposed actions appropriate with regard to the changed work in the cost changes.
         - STR technical review stated that since REA-54 dealt with material cost escalation only and a technical review was not required, dated September 18, 2013.
      v. Section XIX, Cost Analysis, MS stated a cost analysis was performed by referencing a cost analysis performed by MS Cost Group and a previous Intermech REA contained in letter IM-500105-00040.
Attachment E – Modification 32 Evaluation

vi. Section XXI, Price Reasonableness, MS stated the REA for material escalation was reasonable

vii. MS approved the JFA for Modification 32 on September 23, 2013.

4. Intermech REA IM-500105-00054, (REA-54) dated June 21, 2012 – Excerpts:

A. Intermech stated they were requesting an equitable adjustment to the subcontract value because the escalation factor they used for the price of material was lower than actual price of material.

5. NNSA Assessment of Modification 32 of the Subcontract:

A. NNSA assessed that per firm fixed price Subcontract 10888-B-4024 Intermech was to deliver fabricated duct to MS and per subcontract, Section G, subsection 1.1, Scope of Work, Intermech was responsible to supply all the labor, materials, equipment and services, for the execution of this scope of work which had a period of performance of September 2009 to April 2013. (Fact 37)

B. NNSA assessed that in June 2012 Intermech requested an equitable adjustment, via REA-54, for the cost of material between July 2009 and April 2012. In REA-54 Intermech stated they underestimated the escalation for the cost of material. Intermech stated they applied a 3% escalation factor in their original bid and the cost of material exceeded that amount. (Fact 38)

i. NNSA assessed that Intermech’s escalation factor was part of the firm fixed price scope and MS should have denied REA-54 for non-compliance with a subcontract requirement.

C. NNSA assessed that MS management should have denied REA-54 because an increase in the cost of material was neither compliant with the terms of the subcontract i.e., Intermech was to supply all materials for a firm fixed price, nor with FAR 16.202-1, a firm fixed price contract is not subject to any adjustment on the basis of the contractor’s cost experience in performing the contract. (Fact 39)

D. NNSA assessed that MS management provided evidence that they evaluated REA-54 against only the incurrence of the increased costs. MS management provided no evidence that they evaluated REA-54 against subcontract requirements. MS management provided no evidence that they evaluated REA-54 against FAR requirements with regards to reasonableness or allowability. As stated in FAR 31.201-3, no presumption of reasonableness shall be attached to the incurrence of costs by a contractor. And as stated in FAR 31.201-2 (a), a cost is allowable only when the cost complies with all of the following requirements: (1) reasonableness, (2) allocability, (3) generally accepted accounting principles and practices appropriate to the circumstances, (4) terms of the contract, and (5) any limitations set forth in this subpart. (Fact 40)

E. NNSA assessed that the value of IM REA-54 associated with Modification 32 ($617,595.46) was not compliant with Subcontract terms. (Finding 10 – pertains to Facts 37 – 40)
Attachment F – Rework, Design Changes, Bulk Material, NNSA Consent & Facility Charges Evaluation

1. **Background Summary**:

   A. On September 17, 2009, MOX Services (MS) awarded Subcontract 10888-B-4024 to Intermech Inc.
      i. Subcontract 10888-B-4024 had a value of $18,527,187.76 for which Intermech was to fabricate and deliver 1,331,534 pounds of sheet metal ductwork.
      ii. Subcontract 10888-B-4024 was a Firm Fixed Price (FFP) type subcontract with a Period of Performance from September 17, 2009 to April 10, 2013.

   B. Section E, Term and Conditions, paragraph 1.12, Warranty, subparagraph A: ‘The warranty shall begin upon final delivery of supplies resulting from the Work under this Subcontract to the specified delivery point and final acceptance by MOX Services and shall extend for a period not to exceed one year.’

   C. Section E, Terms and Conditions, paragraph 1.12, Warranty, subparagraph B: ‘If any nonconformity with the warranty above appears within the warranty period, Subcontractor shall correct the nonconformity under this warranty at its sole expense …., as directed by MOX Services.’

   D. Section G, Scope of Work, paragraph 2, Description of Work Specific: “The Design Status at the subcontract award will be that all HVAC duct design will be furnished for the BAP, BMP and BSR buildings. Support drawings and Integral Welded Attachments (IWAs) will be designed only for the first level of the BAP. Support drawings and IWAs for the remainder of the ductwork will be completed in time to support duct fabrication.”

2. **NNSA Assessment of Rework**

   NNSA assessors defined rework as: Intermech fabrication errors or MS design changes.

   A. Per Modification 46, Intermech accepted 27 instances where field personnel identified fabrication errors. MS and Intermech agreed that the installer would perform the rework and MS would then apply a back charge to Intermech. Per Modification 46 the 27 fabrication errors were attributed to Intermech personnel errors in the shop and amounted to a back charge of $45,900.

   B. During performance of Subcontract 10888-B-4024 MS approved 45 modifications. The 45 modifications totaled in excess of $29 million and brought the value of Subcontract 10888-B-4024 to $48,142,630. Also, during performance of Subcontract 10888-B-4024 the original estimated amount of duct to be delivered was reduced from 1,331,534 pounds to 1,005,181 pounds delivered using actual weight of duct delivered, as cited in Modification 46. During performance of Subcontract 10888-B-4024 MS either lost duct or lost documentation that required duct to be re-fabricated. The value of lost duct that was re-fabricated was approximately $370,000.
3. **NNSA Assessment of MS Design Changes**

NNSA assessed that Subcontract 10888-B-4024 was a firm fixed price subcontract between Intermec and MOX Services. Both companies had responsibilities in order for Subcontract 10888-B-4024 to be successful. MOX Services did not comply with a core requirement of Subcontract 10888-B-4024 in that they did not furnish all HVAC duct design in time to support duct fabrication. MOX Services inserted this requirement for the HVAC duct design into Subcontract, Section G, Summary of Work, “The Design Status at the subcontract award will be that all HVAC duct design will be furnished for the BAP, BMP and BSR buildings. Support drawings and Integral Welded Attachments (IWAs) will be designed only for the first level of the BAP. Support drawings and IWAs for the remainder of the ductwork will be completed in time to support duct fabrication.”

MOX Services also inserted the requirement for HVAC duct fabrication performance schedule and sequence of work into Subcontract 10888-B-4024. Section G, Summary of Work, Ductwork is to be fabricated, tested and delivered 90 days prior to the start of installation. Intermec fabrication milestone dates were provided on Attachment G and summarized below:

|----------------------------|-----------------------------|---------------------------|

The project record contains multiple letters from Intermec attesting to the incomplete HVAC design and the project record contains multiple instances where MOX Services agrees with Intermec that the lack of final HVAC duct design was the reason for increases to Subcontract 10888-B-4024 value and period of performance. NNSA assessed it was a failure of MOX Services that they did not forego Subcontract 10888-B-4024 award or stop Subcontract 10888-B-4024 after they became aware of the incorrect status of a core Subcontract 10888-B-4024 scope requirement.

NNSA assessed that the Subcontract 10888-B-4024 increase of $29,615,443 was caused by MOX Services failure to comply with a core Subcontract 10888-B-4024 requirement and the entire amount is not compliant with Prime Contract 10888 FAR requirement. *(Concern 1)*
4. **Intermec Facility Charges**

   A. As stated in Subcontract 10888-B-4024, Sections A, D and G:
      
      i. Subcontract 10888-B-4024 had a value of $18,527,187.76 for which Intermec was to fabricate and deliver 1,331,534 pounds of sheet metal ductwork.

      ii. Subcontract 10888-B-4024 was a Firm Fixed Price (FFP) type subcontract with a Period of Performance from September 17, 2009 to April 10, 2013.

      iii. Subcontract 10888-B-4024 Section G, Scope of Work stated, “… the HVAC Subcontractor shall supply all the necessary labor, materials, equipment, and services, for the execution of this scope of work.”

      iv. MOX Services and Intermec approved Subcontract 10888-B-4024 modification 004; on March 29, 2010. Modification 004 incorporated a Milestone Payment table in accordance with Section F, Special Condition 4 (SC-4).

      v. Subcontract 10888-B-4024 Section F, SC-4 stated that Milestone Payments shall be submitted in accordance with Section D.

      vi. MOX Services and Intermec approved Invoice 002 on March 31, 2010. Invoice 002 was the initial instance of usage of the Milestone Payment table. Invoice 002 used the Milestone Payment table as stipulated in modification 004.

      vii. MOX Services and Intermec approved Invoice 017 on April 20, 2011. Invoice 017 was the initial instance of usage of the Milestone Payment table that separated out a monthly charge for Intermec’s “Staff, Facility, Utilities, Equipment, etc”.

   B. **NNSA Assessment of Intermec Facility Charges**

      i. NNSA assessed that Subcontract 10888-B-4024, Section F, SC-4 required that Intermec payment requests to MS for Work shall be in accordance with the terms of Section D. *(Fact 41)*

      ii. NNSA assessed that Subcontract 10888-B-4024 Section G contained no requirement for Intermec to supply a facility. *(Fact 42)*

      iii. NNSA assessed that Subcontract 10888-B-4024 Section G contained no requirement for MS reimburse Intermec for facility overhead costs. *(Fact 43)*

      iv. NNSA assessed that Subcontract 10888-B-4024, modification 004 contained no requirement for MS to reimburse Intermec for facility overhead costs. *(Fact 44)*

      v. NNSA assessed that beginning with Invoice 017, dated April 20, 2011, MS payments to Intermec for Facility Charges (i.e., “Staff, Facility, Utilities, Equipment, etc”) of approximately $142,000 per month were not authorized by any approved modification. *(Fact 45)*

      vi. NNSA assessed that MOX Services agreement to pay facility charges removed the inherent firm fixed price subcontract incentive for Intermec to fabricate duct. MOX Services began administering the Firm Fixed Price Subcontract as a Time and Material subcontract. *(Fact 46)*
vii. NNSA assessed that per Invoice 67 MS reimbursed Intermec a total of $13,548,707 to Intermec for Facility Charges. (Fact 47)

viii. NNSA assessed that all MOX Services payments to Intermec for Facility Charges were not compliant with Subcontract 10888-B-4024 requirements. (Finding 11 – pertains to Facts 41 – 47)

5. **MS Requests for NNSA Consent to Subcontract**

A. The Federal PEP, dated March 2010, contained the following:
   i. The NNSA Contracting Officer interprets contract requirements, policies, and regulations.

B. The MS Project Procurement Plan, R3, dated February 2007, contained the following:
   i. MS Procurement Organization is responsible for the development and implementation of processes that comply with DOE and FAR requirements.

B. Subcontract 10888-B-4024, Sections A and D contained the following requirements:
   i. Subcontract 10888-B-4024 had a value of $18,527,187.76 for which Intermec was to fabricate and deliver 1,331,534 pounds of sheet metal ductwork.

   ii. Subcontract 10888-B-4024 was a Firm Fixed Price (FFP) type subcontract with a Period of Performance from September 17, 2009 to April 10, 2013.

C. Prime Contract Modification A176, dated April 28, 2011, directed MOX Services to obtain NNSA Contracting Officers written consent before placing any subcontract with a proposed price of $25 million or greater.
   i. NNSA letter, COR-SRSOCABM-2.29.2012-421672, Swett to Norton, dated February 29, 2012 directed MOX Services to obtain NNSA Contracting Officer’s consent for any subcontract action/modification known or anticipated to cause an increase to the contractual action that would exceed the total cumulative value of $25 million.

   ii. MOX Services issued Subcontract 10888-B-4024 Modification 19 on March 15, 2012 that increased the Subcontract cumulative value above $25 million and Subcontract Modification 37 on September 29, 2014 that increased the Subcontract cumulative value above $48 million.

J. **NNSA Assessment of MOX Services Requesting NNSA Consent**
   i. NNSA assessed that MOX Services issued nineteen Subcontract 10888-B-4024 modifications between March 15, 2012 and September 29, 2014. (Fact 48)

   ii. NNSA assessed that sixteen of the issued Subcontract 10888-B-4024 modifications met the threshold of requiring NNSA consent because each modification increased the Subcontract cumulative value above $25 million which required NNSA Contracting Officer’s written consent. (Fact 49)

   iii. NNSA assessed that MOX Services requested NNSA Contracting Officer’s consent on one Subcontract Modification, between March 15, 2012 and September 29, 2014, that met the threshold of requiring NNSA Contracting Officer’s written consent. (Fact 50)
iv. NNSA assessed that MOX Services failure to obtain NNSA Contracting Officer’s written consent on fifteen Subcontract 10888-B-4024 modifications between March 15, 2012 and September 29, 2014 was not compliant with Prime Contract 10888 requirement of obtaining NNSA Contracting officer’s written consent on Subcontract Modifications that increased the Subcontract cumulative value above $25 million. (Concern 3 – pertains to Facts 48 – 50)

6. Intermech Bulk Material Purchases Assessment
   A. MS issued Field Work Directives (FWD) directing Intermech to furnish bulk material (e.g., flat stainless steel) to field personnel. (Fact 51)
      i. Intermech purchased bulk material as directed by MS FWDs and then invoiced MS for the material including associated material handling charges and profit. (Fact 52)
      ii. MS approved Intermech invoices which distributed costs for the bulk material to areas and levels in the MOX Facility. (Fact 53)
   B. NNSA Assessment of Intermech Bulk Material Charges
      i. NNSA assessed that MS directed Intermech to perform activities that were not included in Subcontract 10888-B-4024. Intermech purchased bulk material, for field personnel, in non-compliance with Subcontract 10888-B-4024 requirements. (Finding 12 – pertains to Fact 51)
      ii. NNSA assessed that MS applying costs to HVAC fabrication for purchases not associated with HVAC fabrication was inappropriate and caused the actual costs to fabricate duct as required by Subcontract 10888-B-4024 to be overstated. (Finding 13 – pertains to Fact 53)
      iii. NNSA assessed from assessing a sampling of Subcontract 10888-B-4024 documents that charges for bulk material was in excess of $100,000.
      iv. NNSA assessed that distributing costs for bulk material not associated with HVAC fabrication was inappropriate and an EVMS issue to fund one WBS element from a different WBS element which causes schedule, baseline and cost to be out of alignment. MS should have provided explanations regarding what activity the material was used for. (Finding 14 – pertains to Facts 51 – 53)
Rex Norton
Vice President, Contracts and Supply Chain Management
CB&I AREVA MOX Services, LLC
Savannah River Site
P.O. Box 7097
Aiken, SC 29804-7097

SUBJECT: Contract DE-AC02-99CH10888, Mixed Oxide Fuel Fabrication Facility (MFFF); Response to Request to Issue RFP 10888-R-73628 QL-1 Fabricated Pipe Clamps

REFERENCES: 1) MOX Services letter, DCS-DOE-005787, dated July 25, 2017
2) MOX Services Letter, DCS-DOE-005625, dated April 6, 2017

Dear Mr. Norton:

NNSA is in receipt of Reference (2) regarding the issuance of the subject Request for Proposal (RFP) to procure 6,555 QL-1 Fabricated Pipe Clamps at an estimated cost of $760,755. MOX Services’ Reference (1) noted that MOX Services performed a detailed analysis to determine the number of clamps needed for the rooms worked in Fiscal Year (FY) 2017, approximately 1/3 of which were needed for the BAP Room C-234. The analysis included the total number required, the number on hand, the difference between the numbers required and the number on hand, specific sizes of clamps and the catalog ID. However, the letter also noted that “to identify every clamp and hardware item is not prudent or relevant.”

In an effort to validate the number of clamps required, NNSA reviewed information included in Reference (2) and in MOX Services’ Asset Suite database, which is used to manage and track commodity quantities. NNSA also reviewed the number of clamps previously procured and currently available for installation, taking into consideration the many varied sizes and shapes of clamps needed. Moreover, while conducting its analysis of Attachment 2 of Reference (2), NNSA found that there are 68,147 clamps planned for installation within the MFFF and that MOX Services has already purchased and accepted 47,874 clamps. Roughly 21,119 clamps have been issued for installation in the MFFF and there are 30,895 clamps either on-order pending delivery or on-hand yet to be installed. Based on Reference (2) and other informal discussions with construction personnel, it appears the project has the clamps needed for the foreseeable future on-hand and there are no known scopes of work being impacted by clamps that have not been otherwise purchased. If this conclusion is incorrect, please explain and provide supporting documentation.

In the meantime, considering that the MFFF project currently has an existing supply of QL-1 fabricated pipe clamps sufficient for the foreseeable future, NNSA declines to approve issuance of this RFP at this
time. In accordance with FAR Clause 52.244-2, Subcontracts (AUG 1998) Alternate I (JAN 2006), consent to issue the subject RFP for QL-1 Fabricated Pipe Clamps is hereby denied.

If you have any questions or comments please contact the undersigned at 803-952-2020.

Sincerely,

[Signature]

Lance Nyman
Lead Administrative Contracting Officer

cc:
S. Cannon, NA-APM-1.4
J. McCullough, NA-APM-1.4
K. Buchanan, NA-APM-1.4
S. Hamlett, NA-APM-1.4
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