

**UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION**

**THE ATOMIC SAFETY AND LICENSING BOARD**

**Before Administrative Judges:  
Michael C. Farrar, Chairman  
Paul B. Abramson  
Dr. Nicholas G. Trikouros**

<hr/> <div style="border: 1px solid black; padding: 5px;"><p>In the Matter of:</p><p>SHAW AREVA MOX SERVICES, LLC</p><p>(Mixed Oxide Fuel Fabrication Facility Possession and Use License)</p></div> <hr/>		<p>May 3, 2013</p> <p>Docket No. 70-3098-MLA</p> <p>ASLBP No. 07-856-02-MLA-BD01</p>
--	--	--

---

**SHAW AREVA MOX SERVICES, LLC  
REPLY TO INTERVENORS' APRIL 19, 2013 RESPONSE  
TO MOX SERVICES AND NRC STAFF SUBMITTALS**

---

Donald J. Silverman, Esq.  
Anna Vinson Jones, Esq.  
MORGAN, LEWIS & BOCKIUS, LLP  
1111 Pennsylvania Ave, N.W.  
Washington, DC 20004  
Phone (202) 739-5502  
E-mail: [dsilverman@morganlewis.com](mailto:dsilverman@morganlewis.com)

*Counsel for Shaw AREVA MOX Services, LLC*

## TABLE OF CONTENTS

	Page
I. Introduction.....	1
II. Summary of Recent, Relevant Procedural History .....	1
III. Shortcomings of the Intervenor's April 19 Response.....	3
IV. Additional Information on Contention 9, Ability to Meet Item Monitoring Requirements in a Timely Manner .....	4
A. Summary of MOX Services' Previously-Stated Position.....	4
B. Intervenor's Response and MOX Services' Reply .....	6
1. MOX Services' Four Legal Arguments.....	6
2. Intervenor's Response to MOX Services' Evidentiary Information.....	15
V. Additional Information on Contention 11, Rapid Assessment of Alleged Thefts.....	19
A. Summary of MOX Services' Previously-Stated Position.....	19
B. Intervenor's Response and MOX Services' Reply .....	20
VI. Response to Surreply .....	25
VII. Conclusion .....	29

## **I. Introduction**

Pursuant to the Atomic Safety and Licensing Board's (Board): (1) June 29, 2012 Memorandum and Order (Requesting Further Information from the Applicant); (2) July 16, 2012 Order (Adopting the Parties' Jointly Proposed Schedule for Submittal of Additional Information); (3) July 27, 2012 Order (Granting Applicant's Unopposed Motion for Extension and Alternative Schedule); and (4) February 21, 2013 Memorandum and Order (Granting Intervenor's Motion for Extension of Time to Respond to Post-Hearing Information), Shaw AREVA MOX Services, LLC (MOX Services or Applicant) hereby submits its Reply to the Intervenor's April 19, 2013 Response to various MOX Services and NRC Staff submittals ("Intervenor's Response").<sup>1</sup> The direct testimony of Mr. Gary Clark, Mr. Gary Bell, and Ms. Martha Williams support this pleading.<sup>2</sup> For the reasons set forth below, and in conjunction with the testimony, evidence, and legal positions previously provided on the record in this proceeding, all of the admitted Contentions should be resolved in MOX Services' favor.

## **II. Summary of Recent, Relevant Procedural History**

After extensive testimony, evidentiary submittals, and proposed findings of fact and conclusions of law, the Board requested further information on two very specific matters related to Contentions 9 and 11 (not Contention 10), regarding item monitoring and assessment of alleged thefts, under the requirements, respectively, of 10 CFR §§ 74.55(b)(1) and 74.57(e).<sup>3</sup>

---

<sup>1</sup> Intervenor's Response to Shaw AREVA MOX Services' Clarified Supplemental Statement of Position on Contentions 9 and 11, Reply to NRC Staff's Response to MOX Services and Reply to MOX Services' Response to Surreply Regarding Conditions 10 and 11 (Apr. 19, 2013) ("Intervenor's Response").

<sup>2</sup> See [MOX Services'] Pre-Filed Reply Testimony in Response to Board's June 29, 2012 Memorandum and Order, Exhibit APP000044 (May 3, 2013).

<sup>3</sup> See Memorandum and Order (Requesting Further Information from the Applicant) (June 29, 2012). The prior relevant procedural history is set forth in MOX Services' Supplemental Statement, and in the references cited therein. See [MOX Services'] Supplemental Statement of Position on Contentions 9 and 11 and Response to Surreply at 2-5 (Oct. 15, 2012) ("MOX Services' Supplemental Statement of Position").

MOX Services provided the additional information requested by the Board, in the form of a Supplemental Statement of Position on Contentions 9 and 11 and Response to Surreply, dated October 15, 2012, along with additional pre-filed written testimony and additional exhibits, including Fundamental Nuclear Material Control Plan (FNMCP) revisions, and a new “Strategic Special Nuclear Material (SSNM) Item Identity and Location Data Verification Procedure.”<sup>4</sup>

On December 5, 2012, on the basis of MOX Services’ responses to NRC Staff Requests for Additional Information (RAIs) on the FNMCP revisions, MOX Services submitted a Clarification of Supplemental Statement of Position on Contentions 9 and 11 and Response to Surreply, along with Additional Direct Testimony Related to NRC Staff Requests for Additional Information, and other supporting exhibits.<sup>5</sup>

On January 16, 2013, the NRC Staff filed its responsive statement of position, expert testimony, and exhibits, supporting MOX Services’ position.<sup>6</sup> On April 19, 2013, Intervenors submitted their Response. MOX Services herein replies to the Intervenors’ Response and, in so

---

<sup>4</sup> MOX Services’ Supplemental Statement of Position; [MOX Services’] Pre-Filed Direct Testimony in Response to Board’s June 29, 2012 Memorandum and Order, Exhibit APP000037 (Oct. 15, 2012); SSNM Item Identity and Location Data Verification Procedure, MFFF-APM-MC-SOP-S-67011, Rev. 0, Exhibit APP000038 (Oct. 2012); Revised FNMCP Chapter 2, Exhibit APP000039 (Oct. 2012); Revised FNMCP Section 3.3, Exhibit APP000040 (Oct. 2012).

<sup>5</sup> [MOX Services’] Clarification of Supplemental Statement of Position on Contentions 9 and 11 and Response to Surreply (Dec. 5, 2012) (“MOX Services’ Clarification Statement”); [MOX Services’] Additional Direct Testimony Related to NRC Staff Requests for Additional Information, Exhibit APP000041 (Dec. 5, 2012); [MOX Services’] Revised Pre-Filed Direct Testimony in Response to Board’s June 29, 2012 Memorandum and Order, Exhibit APP000037 (Dec. 5, 2012); SSNM Item Identity and Location Data Verification Procedure, MFFF-APM-MC-SOP-S-67011, Rev. 1, Exhibit APP000038 (Dec. 2012); Revisions to Prefiled Direct Testimony in Response to Board’s June 29, 2012 Memorandum and Order, Exhibit APP000042 (Dec. 5, 2012); Response to NRC Requests for Additional Information and Revised [FNMCP] Pages, Exhibit APP000043 (Dec. 5, 2012).

<sup>6</sup> See NRC Staff’s Response to Applicant’s Supplemental Statement of Position on Contentions 9 and 11 and Response to Surreply (Jan. 16, 2013) (“NRC Staff’s Response”); NRC Staff’s Prefiled Supplemental Testimony of Tom Pham Concerning Contentions 9 and 11, Exhibit NRC000012 (Jan. 16, 2013); NRC Staff Requests for Additional Information on the MOX Services’ [FNMCP] revisions dated October 15, 2012, Exhibit NRC000013 (Jan. 16, 2012); Supplement to Final Safety Evaluation Report for the License Application to Possess and Use Radioactive Material at the [MOX Facility] in Aiken, SC, Exhibit NRC000014 (Jan. 16, 2012).

doing, provides the last pleading requested or authorized by the Board in its previous Memoranda and Orders.<sup>7</sup>

### **III. Shortcomings of the Intervenor's April 19 Response**

Before addressing the specifics of the Intervenor's Response on Contentions 9 and 11, MOX Services would like to point out the following fundamental flaws, omissions, errors in logic, and mischaracterizations by the Intervenor. We will address these with more specificity in later Sections of this Reply, as appropriate.

- On October 15 and December 5, 2012, MOX Services provided additional expert testimony and evidentiary exhibits specifically responding to the Board's questions on Contentions 9 and 11. Intervenor—despite being afforded an additional seven (7) weeks to prepare and submit evidentiary materials<sup>8</sup>—have failed to submit *any* additional evidentiary materials rebutting the testimony of MOX Services' expert witnesses, relying instead on pure arguments of counsel. Thus, MOX Services' testimony and accompanying exhibits in response to the Board's questions are unrefuted by any additional evidence;
- Rather than address the discrete questions posed by the Board, Intervenor repeatedly rehash old arguments not responsive to the Board's questions. For example, Intervenor repeatedly refer to and conflate MOX Services' item monitoring approach (upon which there has been extensive previous testimony), with the separate methods MOX Services has committed to implement to address the Board's concerns about verifying the accuracy of the data generated by the MMIS and PLCs (which is the subject of the Board's inquiry);
- The Intervenor's Response frequently fails to provide citations to record materials or to precedents supporting Intervenor counsel's statements. It also often misquotes or mischaracterizes statements and positions taken by MOX Services, and it frequently refers to matters (such as NRC "physical inventory" requirements), that are separate and distinct regulatory requirements not encompassed by the admitted Contentions;

---

<sup>7</sup> See Order (Granting Applicant's Unopposed Motion for Extension and Alternative Schedule) at 2 (July 27, 2013); Memorandum and Order (Granting Intervenor's Motion for Extension of Time to Respond to Post-Hearing Information) at 13-14 (Feb. 21, 2013).

<sup>8</sup> See Memorandum and Order (Granting Intervenor's Motion for Extension of Time to Respond to Post-Hearing Information) (Feb. 21, 2013). We note that among the reasons the Board granted the extension was that "it is in the public interest that we receive from Dr. Lyman a full and careful response to Applicant's additional information and to Staff's response to that information, a response that we would most likely not receive if we were to deny the pending motion." *Id.* at 12.

- Intervenors frequently refer to the MMIS and PLC systems as “substitute[s]” or a second best choice for what they refer to as a “physical retrieval and inspection” approach.<sup>9</sup> Yet Intervenors have not articulated precisely what they mean by “physical retrieval and inspection,” and did not provide evidence that demonstrates that this approach is superior to the one proposed by MOX Services. Intervenors’ suggestion that MOX Services’ proposed approach is second best is plainly incorrect, given the extensive testimony on the automation, reliability, and reduction of opportunities for human error provided by the MMIS and PLCs;
- Intervenors are silent regarding MOX Services’ FNMCP revision that addresses the Board’s question on Contention 9, and do not provide evidence refuting the technical adequacy of the new procedure for MMIS and PLC data accuracy verification;
- Intervenors never challenge MOX Services’ legal position that the “contingency capability” discussed in NUREG-1280 for theft assessment is intended to refer to the primary system used to assess the “contingency” of an alleged theft, and not some secondary or back-up capability; and
- Intervenors assert, incorrectly, that MOX Services has “backed away” from previously-made commitments.<sup>10</sup>

#### **IV. Additional Information on Contention 9, Ability to Meet Item Monitoring Requirements in a Timely Manner**

##### **A. Summary of MOX Services’ Previously-Stated Position.**

As noted above, there is an extensive record in this proceeding on MOX Services’ item monitoring approach using the MMIS and PLCs. However, the additional question raised by the Board on Contention 9 sought more information on how MOX Services will *verify the accuracy of the data generated by the MMIS and PLCs*, and sought an “identifiable and enforceable” document that would address that question.

In brief summary, MOX Services provided the Board with exactly what it requested, by way of additional pre-filed testimony, an FNMCP revision, and a specific, approved implementing procedure. MOX Services presented five (5) different methods for verifying the

---

<sup>9</sup> E.g., Intervenors’ Response at 3.

<sup>10</sup> E.g., Intervenors’ Response at 3.

accuracy of the PLC and MMIS data,<sup>11</sup> all of which act together to provide a multi-layer system. The newest of these is the specific procedure for physically accessing SSNM items, “reading” their unique identifiers, and comparing that information to the PLC data.<sup>12</sup> MOX Services submits that the procedure, coupled with the corresponding changes to the FNMCP,<sup>13</sup> by themselves, fully and adequately address the Board’s question.

However, MOX Services also explained: (1) why no procedure was required at this stage of the proceeding<sup>14</sup>; (2) why the Board’s question relates only to item “presence” verification, not “integrity”<sup>15</sup>; (3) most importantly, why, as a matter of law, the data accuracy verification step requested by the Board goes beyond both the applicable requirements in the regulation and the scope of the Contention<sup>16</sup>; and (4) why, if judged at all, the accuracy verification methods are subject to a “reasonable assurance” standard based on case-by-case, sound technical judgment and a preponderance of the evidence test.<sup>17</sup>

As discussed below, Intervenor’s filing, to which we now respond, does nothing to call any of these technical or legal conclusions into any legitimate doubt.

---

<sup>11</sup> See MOX Services’ Supplemental Statement of Position at 13; Exhibit APPR00037 at Q9.

<sup>12</sup> See Exhibit APPR00038; *see also* Exhibit APPR00037 at Q9, Q14-21 (providing testimony explaining the procedure).

<sup>13</sup> See Exhibits APP000039 and APP000040.

<sup>14</sup> See MOX Services’ Supplemental Statement of Position at 8-9.

<sup>15</sup> See *id.* at 9-10.

<sup>16</sup> See *id.* at 10-11.

<sup>17</sup> See *id.* at 11-13.

## **B. Intervenors' Response and MOX Services' Reply**

### **1. MOX Services' Four Legal Arguments**

The Intervenors begin by noting that MOX Services “makes four legal arguments that the [new data accuracy verification] procedure is not required.”<sup>18</sup> Just to be clear, MOX Services made four legal arguments relating to the Board’s question on Contention 9, but only one was that a procedure is not required at this stage of the proceeding. The others go to the scope of the issue raised by the Board; the extent to which data accuracy verification is even required by 10 CFR § 74.55(b)(1); and the legal standard to be applied in judging the technical adequacy of the procedure.<sup>19</sup>

Before addressing Intervenors’ filing, MOX Services wishes to clarify a point central to MOX Services’ position and particularly relevant to the question raised by the Board: Section 74.55(b)(1) does not set forth a *quantitative* requirement for the *accuracy* of an item monitoring method. MOX Services wants to be clear that it does not assert that an item monitoring method need not be accurate. An item monitoring approach *must* be accurate, just not to any quantified degree. MOX Services has previously provided legal analysis and expert testimony in this regard.<sup>20</sup> The Board’s question on Contention 9—how MOX Services will verify the accuracy of the MMIS and PLC data that underlies its proposed item monitoring approach—relates to

---

<sup>18</sup> Intervenors’ Response at 5.

<sup>19</sup> See MOX Services’ Supplemental Statement of Position at 9-13.

<sup>20</sup> See [MOX Services’] Reply Statement of Position on Contentions 9, 10 and 11, at 7-10 (Jan. 24, 2012) (“MOX Services’ Reply Statement of Position”) (responding to Intervenors’ claims that the rule requires 99% accuracy and explaining that although no quantitative standard applies to item monitoring accuracy, a “reasonable assurance” standard does apply); [MOX Services’] Prefiled Reply Testimony on Contentions 9-11, Exhibit APP000031, at Q10-16 (providing testimony regarding the quantitative aspects of Section 74.55(b)(1) and stating that they do not pertain to the effectiveness of the item monitoring method); *id.* at Q21 (Q: . . . Certainly the NRC did not intend to permit licensees to use inaccurate item monitoring methods. A: [All] Of course not. Section 74.55(b)(1) requires that licensees ‘verify . . . the presence and integrity of SSNM items.’ Whatever methods the licensee chooses, those methods must be able to provide reasonable assurance that item losses totaling five formula kilograms will be detected. We are simply clarifying that there is no requirement that the licensee *demonstrate the accuracy* of its method on a *quantitative* basis, and Section 74.55(b)(1) does not even speak to method accuracy.”).



MOX Services' point. Consistent with its position regarding the accuracy of an item monitoring approach generally, MOX Services maintains that any *data* accuracy verification methods, if judged at all, are subject to a "reasonable assurance" standard.<sup>21</sup>

a. Whether Procedures are Required for this Proceeding

On the need for a procedure at this stage of the process, Intervenor expressly acknowledge that MOX Services "is correct that the NRC's MC&A regulations do not require the submission of implementing procedures as part of a license application."<sup>22</sup> Intervenor also point out that it was MOX Services that decided to proffer the procedure in order to respond to the Board's question,<sup>23</sup> and they later state that the procedure is "reviewable" by the Board.<sup>24</sup>

MOX Services *did* choose to submit the procedure to address the Board's question (along with an FNMCP revision that the Intervenor make no mention of nor challenge its adequacy in any respect). Although the subject of the procedure (MMIS and PLC data accuracy verification) is not required by 10 CFR § 74.55(b)(1), MOX Services has provided a procedure along with the FNMCP revision.

Furthermore, and while preserving its legal arguments, MOX Services has not stated that the procedure is unreviewable by the Board, contrary to Intervenor's suggestion. Indeed, we have expressed our view on the standard of review (*i.e.*, no quantitative performance standard; reasonable assurance based on sound technical judgment applied on a case-by-case basis; and a preponderance of the evidence).<sup>25</sup> Notably, with respect to the preponderance of the evidence

---

<sup>21</sup> See MOX Services' Supplemental Statement of Position at 11-13.

<sup>22</sup> Intervenor's Response at 5-6.

<sup>23</sup> See *id.* at 6.

<sup>24</sup> *Id.* at 7.

<sup>25</sup> See MOX Services' Supplemental Statement of Position at 11-13.

test, the *only* evidence in the record regarding the adequacy of the FNMCP revision and procedure is that provided by MOX Services and the NRC Staff. Even if there was some quantitative standard, Intervenorors have provided no evidence identifying such a standard and demonstrating how MOX Services has failed to meet that standard.

What Intervenorors have done, instead, is to present non-evidentiary arguments of counsel. In particular, Intervenorors concede that “the NRC’s MC&A regulations do not require the submission of implementing procedures as part of a license application,”<sup>26</sup> yet they provide several reasons why they believe the data accuracy verification procedure is nevertheless material to a finding of compliance with Section 74.55(b)(1).<sup>27</sup> None of Intervenorors’ arguments have merit.

First, Intervenorors mention data accuracy verification, and state it is “material” to a finding of compliance with the “statistical sampling” requirement in CFR § 74.55(b)(1).<sup>28</sup> Intervenorors confuse and conflate the Section 74.55(b)(1) quantitative item monitoring requirements with the data accuracy verification method established by MOX Services. As MOX Services has previously both testified<sup>29</sup> and stated in its legal arguments,<sup>30</sup> it meets the specific, quantitative requirements of Section 74.55(b)(1) with respect to item presence verification by way of the MMIS and PLCs. MOX Services recognizes the Board’s desire to have further explanation and assurances regarding the verification of data accuracy, but Section 74.55(b)(1) does not require this separate process. And this separate process has no bearing on

---

<sup>26</sup> Intervenorors’ Response at 5-6.

<sup>27</sup> *See id.* at 6-7.

<sup>28</sup> *Id.* at 6.

<sup>29</sup> *See e.g.*, [MOX Services’] Prefiled Direct Testimony on Contentions 9-11, Exhibit APPR00014, at Q25 (Sept. 29, 2011); Exhibit APP000031 at Q11-18, 20-24.

<sup>30</sup> *See* MOX Services’ Reply Statement of Position at 6-7; *see also* [MOX Services’] Proposed Findings of Fact and Conclusions of Law for Contentions 9, 10, and 11, at 23-29 (Apr. 13, 2012).

the quantitative requirements of Section 74.55(b)(1), as MOX Services has explained previously.<sup>31</sup> This is an example of the Intervenor conflating two very different concepts and relying on old, previously stated arguments.

Second, Intervenor claim that data accuracy verification is material to a finding of compliance with Section 74.55(b)(1) because MOX Services' item monitoring approach is, in Intervenor's words, a "substitute" for compliance with the regulation.<sup>32</sup> Intervenor claim that "physical verification of the actual presence and integrity of containers . . . is plainly contemplated by [Section] 74.55(b)(1)."<sup>33</sup> But Intervenor's Response does not explain why it believes the plain language of the regulation, which does not speak to the *method* used for verifying presence or integrity, "plainly contemplate[s]" "physical verification."<sup>34</sup> Nor does Intervenor's Response describe what a "physical verification" might entail, or how that verification differs from MOX Services' proposed item monitoring approach, which has many "physical" aspects.<sup>35</sup> MOX Services has addressed this mischaracterization by Intervenor previously,<sup>36</sup> and Intervenor have not provided any testimony or evidence to rebut MOX Services' position.

---

<sup>31</sup> See, e.g., MOX Services' Supplemental Statement of Position at 11-13; see also MOX Services' Reply Statement of Position at 6-10 (explaining the distinction between the quantitative aspects of the rule and item monitoring accuracy).

<sup>32</sup> See Intervenor's Response at 6.

<sup>33</sup> *Id.*; see also *id.* at 3, 8, and 10 (repeatedly asserting that MOX Services' approach is a "substitute" (and presumably an inferior one) for "physical" item monitoring).

<sup>34</sup> See *id.* at 6.

<sup>35</sup> See *id.*; c.f., Exhibit APP000031 at Q23 (explaining why the PLCs represent the actual, physical location of items); *id.* at Q22 (describing how physical movements during process operations verify presence); Exhibit APPR000037 at Q14-15 (explaining how MOX Services physically checks items for the verification process); Exhibit APPR000037 at Q17-18 (describing the physical aspect of the verification process and routine item monitoring).

<sup>36</sup> See, e.g., [MOX Services'] Proposed Reply Findings of Fact and Conclusions of Law for Contentions 9, 10, and 11, at 11-13 (May 18, 2012) ("MOX Services' Reply Findings") (citing sworn statements that MOX Services *meets* the regulation, rather than provides an effective substitute).

Third, Intervenor claim that data accuracy verification is material to a finding of compliance with Section 74.55(b)(1) because “it is implicit in the applicant’s approach that the data in the [MMIS and PLCs] is a 100% accurate representation of the presence of items stored in the MOX Facility.”<sup>37</sup> In so doing, Intervenor simply rehash old arguments, and provide nothing new in response to MOX Services’ testimony on this very point.<sup>38</sup> As MOX Services testified previously:

MOX Services has not asserted that its PLC mapping data is “100 percent accurate” . . . nor is it required to do so. These characterizations are not grounded in any representation made by MOX Services. Rather, MOX Services’ item monitoring program relies on multiple, redundant methods to provide reasonable assurance of the accuracy and integrity of the MMIS and PLCs, and to verify discrepancies, should they arise.<sup>39</sup>

MOX Services has previously explained that data accuracy verification is not required by 10 CFR § 74.55(b)(1), and is therefore not material to a finding of compliance with Section 74.55(b)(1).<sup>40</sup> Intervenor have failed to provide a compelling or legitimate argument to the contrary.

We conclude by noting that there is no testimony and no challenge to the technical adequacy of the procedure or FNMCP revision.

---

<sup>37</sup> Intervenor’s Response at 6.

<sup>38</sup> See Direct Testimony of Dr. Edwin S. Lyman In Support of Intervenor’s Contentions 9, 10, and 11, Exhibit INT000001, at A.7, ¶ 4 (“[MOX Services] equates PLC mapping data with the actual physical state of all items in the MFFF, *i.e.*, the system is 100 percent accurate and completely invulnerable to any type of cyberthreat . . . .”); Intervenor’s Proposed Findings of Fact and Conclusions of Law Regarding Contentions 9, 10, and 11, at 9-10, 16 (May 3, 2012) (“Intervenor’s Initial Findings”) (claiming that MOX Services assumes its item monitoring approach cannot fail).

<sup>39</sup> Exhibit APPR00031 at Q47. See also MOX Services’ Reply Findings at 19-20 (responding to Intervenor’s claim that MOX Services’ approach must be infallible and explaining that MOX Services instead relies on redundant means to detect errors in its systems).

<sup>40</sup> See, *e.g.*, MOX Services’ Supplemental Statement of Position at 10-11 (providing legal analysis as to why the Board’s request for an item verification procedure goes beyond the rule and the contention); see also Exhibit APPR00037 at Q23 (providing Ms. Williams’ expert testimony that, “to the best of [her] knowledge, there is no precedent for verifying item monitoring data accuracy”).

b. Whether MMIS and PLCs are Relevant to Item Integrity

Next, the Intervenor note that MOX Services does not intend to use the MMIS and PLCs for “integrity” monitoring,<sup>41</sup> as it relies instead on containment boundary checks and other methods.<sup>42</sup> Intervenor, therefore, allege that MOX Services is attempting to “sidestep”<sup>43</sup> the relationship between item presence and integrity checks, and they state:

An applicant must demonstrate the same capability to statistically sample and physically inspect items to verify their integrity as it does to verify their presence.<sup>44</sup>

If the Intervenor are asserting that Section 74.55(b)(1) requires a 99% power of detecting certain item losses in specified periods of time, whether it be through a loss of an item (presence), or a loss of a portion of the contents of an item (integrity), we agree. MOX Services has provided extensive testimony demonstrating how it meets those quantitative requirements.<sup>45</sup>

On the other hand, if Intervenor are asserting that MOX Services must use the same actions or must “physically inspect” to achieve the performance standards in the rule for both presence and integrity,<sup>46</sup> we strongly disagree. The rule does not call for this, and the Intervenor have pointed to no legal basis for such a conclusion.

MOX Services is not “sidestepping” the relationship between presence and integrity. Although 10 CFR § 74.55(b)(1) establishes the same performance requirements for item integrity and presence monitoring, it does not require that applicants or licensees use the same methods to meet those performance requirements. MOX Services has not proposed using the same methods

---

<sup>41</sup> See Intervenor’s Response at 7.

<sup>42</sup> See MOX Services’ Supplemental Statement of Position at 9-10.

<sup>43</sup> Intervenor’s Response at 8.

<sup>44</sup> *Id.*

<sup>45</sup> See *supra* notes 29-30 and accompanying text.

<sup>46</sup> See Intervenor’s Response at 8.

for item presence and integrity monitoring. The Board inquired about the accuracy of data generated by the MMIS and PLCs, which MOX Services relies on for its item *presence* monitoring, but not item integrity monitoring.

c. Whether MOX Services is Required to Verify the Accuracy of its Item Monitoring Approach

In response to MOX Services' explanation that the regulation at issue in Contention 9 does not require applicants to propose a system to verify the accuracy of its item monitoring approach, Intervenor mischaracterize MOX Services' legal position and testimony and offer unsupported claims about the regulatory requirement.<sup>47</sup>

First, Intervenor wrongly accuse MOX Services of "[o]ffering a radically and self-servingly abbreviated paraphrasing of 10 C.F.R. § 74.55(b)(1),"<sup>48</sup> because MOX Services did not refer in one particular location in its Supplemental Statement to the statistical sampling portion of the regulation. In that section of our Supplemental Statement, there was no need to spell out the entire regulation, and MOX Services' multiple filings throughout this proceeding have repeatedly quoted and analyzed the full text of the regulation, explaining how MOX Services meets all of the requirements of the rule, *including* the statistical sampling aspect.<sup>49</sup> This aspersion by Intervenor on MOX Services' integrity is unhelpful and unwarranted.

Intervenor go on, again, to repeat previously stated arguments relating to the requirements of the rule and to conflate the item monitoring rule requirements with MOX Services' commitments adopted to address the Board's question regarding MMIS and PLC data

---

<sup>47</sup> See *id.* at 8-9.

<sup>48</sup> *Id.* at 8.

<sup>49</sup> See, e.g., Exhibit APPR00014 at Q18 (restating the rule in full); *id.* at Q25 (describing MOX Services' item monitoring approach for presence and explaining how it satisfies the rule's statistical requirements); Exhibit APP000031 at Q11 (restating the rule in full and explaining to what extent the rule is quantitative); *id.* at Q12-19 (explaining the statistical aspects of the rule and how MOX Services meets those requirements by way of a 100% sample).

accuracy verification.<sup>50</sup> Intervenor seem to erroneously equate the requirement in Section 74.55(b)(1) for a 99% power of detection with the accuracy of the data supporting an applicant's proposed item monitoring approach.<sup>51</sup> MOX Services has provided extensive testimony explaining why the statistical requirement does not pertain to the accuracy of the item monitoring method.<sup>52</sup> Intervenor again claim that MOX Services' proposed item monitoring approach is a "substitute[] for compliance" and "alternative to compliance," but do not describe what item monitoring approach it believes the "plain language of the regulations" requires.<sup>53</sup>

Intervenor conclude this portion of their Response by claiming that "a computer system that only *approximates* the location of items to an unknown degree, and cannot verify their integrity at all" cannot satisfy the Section 74.55(b)(1) item monitoring requirements.<sup>54</sup> This characterization is simply incorrect. MOX Services' has not proposed using its MMIS or PLCs to confirm item integrity in satisfaction of Section 74.55(b)(1). In fact, this was the precise point MOX Services raised in its second legal argument.<sup>55</sup> In addition, MOX Services has previously provided testimony about the precision with which PLCs know the location of items, explaining that movements and final positions of items in the MOX Facility are precisely controlled to a quarter of an inch.<sup>56</sup> Mr. Bell's testimony attached to this Reply further undercuts Intervenor's allegation.<sup>57</sup>

---

<sup>50</sup> Intervenor's Response at 8-9.

<sup>51</sup> See *id.* (claiming that MOX Services' paraphrase of the regulation, which in one instance omitted the reference to the statistical aspect of the rule, did not require a system for verifying accuracy of an item monitoring approach, and suggesting that the statistical sampling aspect of the rule requires such a system).

<sup>52</sup> See Exhibit APP00031 at Q20-21; see also *id.* at Q11-16 (explaining the quantitative, statistical element of Section 74.55(b)(1)).

<sup>53</sup> Intervenor's Response at 9.

<sup>54</sup> *Id.* (emphasis added).

<sup>55</sup> See *supra* Part IV.B.1.b.

<sup>56</sup> See Tr. 1176-1177 (McDade: Is there any way to verify the accuracy of what is recorded [in the PLC]? . . . Bell: We depend a lot on the fact that if it's off by even a quarter of an inch, we're talking very fine

Intervenors do *not* provide any direct reference to the regulation or regulatory history to refute the evidence that the data accuracy verification method is not required by Section 74.55(b)(1).

d. Whether MOX Services Must Demonstrate the Accuracy of its Item Monitoring Method to Some Quantifiable Standard

In addressing MOX Services' fourth and final legal argument on the Board's question relating to Contention 9, the Intervenors once again mischaracterize MOX Services' position and conflate the item monitoring requirement and data accuracy verification.<sup>58</sup> They state, among other things, that "MOX Services is simply incorrect that NRC regulations lack a quantitative standard," and "Section 74.55(b)(1) contains a very explicit quantitative standard for the item monitoring that must be conducted by MOX Services."<sup>59</sup>

MOX Services has repeatedly recognized and addressed the quantitative standard in Section 74.55(b)(1), yet Intervenors seem to ignore this.<sup>60</sup> That standard requires a licensee to verify, on a statistical sampling basis, the presence and integrity of SSNM items, with a 99% power of detecting losses of five formula kilograms or more, plant wide, within 30 days for Category IA items and 60 days for Category IB items in a vault, or a permanently controlled access area.<sup>61</sup> The quantitative terms of the rule require monitoring presence and integrity of a certain sample size of items—and that is what MOX Services has shown it can do. MOX Services has provided thorough testimony explaining why the quantitative aspects of the rule do

---

tolerances and movements. So if we're off by even a quarter of an inch, fractions of an inch, we hit obstructions and start damaging our equipment.)

<sup>57</sup> See Exhibit APP000044 at Q6.

<sup>58</sup> See Intervenors' Response at 10-11.

<sup>59</sup> *Id.* at 10.

<sup>60</sup> See, e.g., Exhibit APP000031 at Q10-21 (providing extensive testimony explaining the quantitative aspects of the Section 74.55(b)(1) requirement and MOX Services' compliance).

<sup>61</sup> 10 CFR § 74.55(b)(1).



not pertain to the accuracy of the item monitoring method.<sup>62</sup> Yet Intervenor once again conflate the two.

The Board has asked: if you are going to rely on the MMIS and PLCs to monitor the presence of SSNM items, what will you do to ensure you can trust the MMIS and PLC data? Whether or not implicitly required by the rule, the verification to provide more confidence in the data obtained from the MMIS and PLCs is a separate process. It is not a duplicate method for item monitoring. In one case, the licensee is checking for missing items. In the other, it is verifying the accuracy of the data used in that check. The quantitative requirements for item monitoring simply do not apply to the data accuracy verification requested by the Board.

## 2. Intervenors' Response to MOX Services' Evidentiary Information

Intervenors respond to MOX Services' testimony and exhibits only by way of arguments of counsel. Intervenor suggests that MOX Services' testimony has limited value because, as Intervenor's claim, "none of [MOX Services'] experts claim that MOX Services will satisfy the requirement of 10 C.F.R. § 74.55(b)[(1)]."<sup>63</sup> This assertion is patently false, and is directly contradicted by MOX Services' expert testimony.<sup>64</sup> Intervenor's arguments furthermore fail because they are, again, based on the faulty premise that the data accuracy verification process must meet the requirements in Section 74.55(b)(1) for an item monitoring system.<sup>65</sup>

---

<sup>62</sup> See, e.g., Exhibit APP00031 at Q20 (explaining that power of detection and accuracy are two different and distinct concepts and that there is no quantitative requirement in Section 74.55(b)(1) regarding accuracy). The NRC Staff's expert also testified that the quantitative aspects of the rule do not pertain to the accuracy of the item monitoring method. See NRC Staff's Prefiled Response Testimony of Tom Pham Concerning Contentions 9, 10, and 11, Exhibit NRC000008, at Q2 (Dec. 20, 2011).

<sup>63</sup> Intervenor's Response at 11.

<sup>64</sup> See Exhibit APPR00014 at Q31 (testifying that MOX Services' satisfies the requirements of Section 74.55(b)(1)); Exhibit APP00031 at Q34 ("[W]e have demonstrated that MOX Services meets the quantitative power of detection standards of Section 74.55(b)(1) and satisfies the regulations.").

<sup>65</sup> Compare Intervenor's Response at 11-12, with MOX Services Supplemental Statement of Position at 10-11 (explaining that Section 74.55(b)(1) does not require a data accuracy verification system).

a. 3% Defect Rate

Intervenors specifically mention that the “[t]he number of item verifications conducted [by MOX Services] will be comparable to that required to detect a 3% defect rate at a 99% confidence level,” and that “MOX Services has not shown how such a sampling plan would validate the MMIS and PLC data to the extent necessary to demonstrate compliance with 10 C.F.R. §74.55(b).”<sup>66</sup>

To the contrary, by way of testimony,<sup>67</sup> and its Supplemental Statement,<sup>68</sup> MOX Services has clearly explained the appropriateness, basis for, and conservatism of the sampling parameters used to determine the number of item verifications that will be conducted to provide additional assurance as to the accuracy of the data generated by the MMIS and PLCs. As described in that testimony, MOX Services’ approach is: (1) based upon accepted and available industry standards for similar types of activities; and (2) applies the *most stringent* sampling parameters used in connection with physical inventories of Category I SSNM or for verification of material quantities.<sup>69</sup> And while the Intervenors suggest that a 3% defect rate is deemed by MOX Services to be an acceptable level of data inaccuracy,<sup>70</sup> MOX Services explained that its “test parameters in no way indicate that an error rate of 3% is acceptable. They simply are test parameters utilized as tools to quantify the data accuracy confidence.”<sup>71</sup> In the new testimony accompanying this Reply, MOX Services’ witnesses have elaborated on this parameter.<sup>72</sup>

---

<sup>66</sup> Intervenors’ Response at 12.

<sup>67</sup> See Exhibit APPR000037 at Q15-16.

<sup>68</sup> MOX Services’ Supplemental Statement of Position at 14-15.

<sup>69</sup> See Exhibit APPR000037 at Q15.

<sup>70</sup> Intervenors’ Response at 12.

<sup>71</sup> Exhibit APPR000037 at Q15.

<sup>72</sup> See Exhibit APP000044 at Q4.

Intervenors similarly challenge the use of DOE requirements and standards for selecting the 3% defect rate and 99% confidence level parameters.<sup>73</sup> Yet Intervenors cite no alternative NRC standard and provide no testimony challenging the technical validity of MOX Services' use of the DOE requirements and standards. Indeed, there is no NRC standard for evaluating item monitoring data accuracy. MOX Services has explained that it researched but found no precedent for a requirement for an item monitoring data verification process at all, and it therefore used "industry standard practices for activities such as item monitoring, verification or confirmation measurements, and physical inventories."<sup>74</sup> That these were derived from available DOE standards is not a legitimate criticism.

b. Software Confirmation

Intervenors next challenge Mr. Bell's prior testimony regarding the use of configuration management software to verify that the software used to manage the MMIS and PLC data "is the current approved version and that the software has not been changed in an unauthorized fashion."<sup>75</sup> They state that "[u]sing one *vulnerable* software program to verify another has not been tampered with would be the equivalent of looking for an accurate reflection in a funhouse hall of mirrors."<sup>76</sup>

Again, no testimony or evidence supports these assertions, and they ignore Mr. Bell's extensive written testimony: (1) on the use of DOE's cyber security policy; (2) on the controls that apply to all of MOX Services' software codes; and (3) that access to the MMIS, PLCs, the

---

<sup>73</sup> Intervenors' Response at 12 n.3.

<sup>74</sup> Exhibit APPR00037 at Q15.

<sup>75</sup> Intervenors' Response at 13.

<sup>76</sup> *Id.* at 13 (emphasis added).

MMIS archive, and LANMAS is limited by separation of duties.<sup>77</sup> Mr. Bell is now providing additional testimony explaining that these protections for MOX Facility software apply to the configuration management software as well.<sup>78</sup>

Intervenors' characterization of this separate system as "vulnerable" is a conclusion stated by counsel without basis. And Mr. Bell is now submitting additional testimony casting even further doubt on Intervenors' position.<sup>79</sup>

c. Use of NQA-1

Intervenors next challenge MOX Services' use of NQA-1.<sup>80</sup> Why the Intervenors' believe that use of NQA-1 is inadequate or inappropriate is not at all clear. It appears they believe this is the case because they state that MOX Services has testified that the "PLC and MMIS were not developed for safety, security or MC&A purposes" but instead for "managing the MOX Facility inventory."<sup>81</sup> In fact, the MMIS was developed for multiple purposes, including material balance, MC&A, and non-IROFS, defense-in-depth criticality prevention.<sup>82</sup> Even if Intervenors' claim were true, there is no basis to challenge the adequacy of the use of NQA-1.

In sum, Intervenors have failed to provide any evidence or sufficient, supported legal analysis to refute MOX Services' answer to the Board's question on Contention 9.

---

<sup>77</sup> See Exhibit APPR00037 at Q12 (pertaining to cyber security); *id.* at Q10-11 (discussing the controls on software development); *id.* at Q42 (describing the electronic and cyber security measures at the MOX Facility); *id.* at Q48 (explaining that, because of MOX Services' application of separation of duties and the two-person rule, corruption of item monitoring data would require a team of at least eight individuals).

<sup>78</sup> See Exhibit APP000044 at Q5.

<sup>79</sup> See *id.*

<sup>80</sup> See Intervenors' Response at 13-14.

<sup>81</sup> *Id.*

<sup>82</sup> See Tr. at 1202-03 (Bell) (providing testimony on the multiple purposes of the MMIS).

**V. Additional Information on Contention 11, Rapid Assessment of Alleged Thefts**

**A. Summary of MOX Services' Previously-Stated Position.**

There is an extensive record on this matter as well. However, the specific, additional question raised by the Board on Contention 11 sought a “contingency plan” for assessing an alleged theft that involved an assertion of a malicious compromise of the MMIS or PLC systems, in the 8- and 72-hour time frames set forth in NRC guidance. Again, the Board sought an “identifiable and enforceable” document. And again, MOX Services has provided exactly what the Board requested, by way of additional pre-filed testimony and an FNMCP revision.

In particular, MOX Services listed and described a suite of multiple methods for assessing the Board’s hypothetical theft scenario. At least four (4) of these methods are specifically directed at addressing the potential for a malicious compromise of the MMIS or PLC systems, including: (1) assessing the physical security of MMIS and PLC hardware; (2) assessing cyber security that protects the MMIS and PLC software; (3) comparing “live” MMIS records to offline, archived MMIS records; and (4) comparing “live” MMIS records to LANMAS records.

Apart from these substantive responses to the Board’s question, as a matter of law, MOX Services demonstrated that the “contingency capability” that is the subject of the Board’s question is drawn from NRC guidance, not regulation, and is intended to mean the primary capability to respond to the “contingency” (*i.e.*, the event) of an alleged theft. It is not a back-up or secondary system. MOX Services also demonstrated that neither NRC regulations nor MOX Services’ commitments require it to assess an actual alleged theft in 8 or 72 hours, but instead, to be able to update its records system and locate items in those time frames, to allow for a “rapid” theft assessment, in accordance with the regulation. And finally, MOX Services demonstrated that NRC regulations do not require, and MOX Services did not commit to, locating one item in

8 hours or all items in vault storage in 72 hours *under all conceivable theft scenarios*, including the scenario posited by the Board.

As discussed below, the Intervenor's Response does not call into substantial doubt any of these technical or legal conclusions.

## **B. Intervenor's Response and MOX Services' Reply**

With respect to the Board's question on Contention 11, Intervenor provides little legal argument and again no expert testimony or evidence in response to MOX Services' position. The little that Intervenor provides does not scratch the surface of the real issues at hand, but rather confuses the regulatory requirements, misquotes MOX Services' position, and strays far afield from the discrete question posed by the Board.

10 CFR § 74.57(e) and the guidance at NUREG-1280 are nuanced and require careful reading to understand how they work with the alarm resolution requirements as a whole. In ten pages of legal briefing and twenty-seven pages of testimony, MOX Services provided a step-by-step explanation of Section 74.57(e) and MOX Services' related commitments, as they pertain to the Board's inquiry.<sup>83</sup> Intervenor's four-page response, however, inaccurately accuses MOX Services' of "back[ing] away from" its commitments.<sup>84</sup> Their Response, which also includes inaccurate citations<sup>85</sup>, incorrect quotations<sup>86</sup>, and misstatements of MOX Services' position<sup>87</sup>,

---

<sup>83</sup> See MOX Services Supplemental Statement of Position at 15-24; Exhibit APPR00037 at Q25-49.

<sup>84</sup> See Intervenor's Response at 14-17. Intervenor has not provided any legal position or expert testimony on the question of whether MOX Services is required to provide a secondary capability to assess alleged thefts. See generally Intervenor's Response. The NRC Staff provided testimony that supported MOX Services' position in this regard. See NRC Staff's Prefiled Supplemental Testimony of Tom Pham Concerning Contentions 9 and 11, Exhibit NRC000012, at Q26 (Jan. 16, 2013). Consequently, the Board should find in favor of MOX Services' uncontested testimony that the term "contingency capability," as used in NUREG-1280, means "the primary capability to respond in an abnormal scenario, not a backup or alternate capability." Exhibit APPR00037 at Q39.

<sup>85</sup> See Intervenor's Response at 15 (citing page 19 of MOX Services' Supplemental Statement of Position with the reference "*Id.*", although the correct citation is to page 20); *id.* at 16 (citing pages 51 and 47 in APPR00037, although the correct citations are to pages 49 and 45, respectively); *id.* at 17 (citing page 29 of APPR00037, while the correct citation is to page 26).

reflects a careless treatment of MOX Services' legal positions and expert testimony. Moreover, Intervenor's Response has no basis or support in the record.

Intervenor's claim that MOX Services has "watered down its commitment" and "eviscerat[ed] the [regulatory] standard," and yet still does not claim to be able to meet that standard.<sup>88</sup> Intervenor's summary is incorrect on all counts. Intervenor has not provided any support or reference to the record for their claim that MOX Services has changed its position. MOX Services has not changed its position.

Intervenor's Response does not accurately reflect how the various provisions of NUREG-1280 and MOX Services' corresponding FNMCP commitments work as a whole. As MOX Services has explained in prior submittals in this proceeding, 10 CFR § 74.57(e) does not require licensees to assess an alleged theft within 8 or 72 hours.<sup>89</sup> It requires only that licensees "provide an ability to rapidly assess the validity of alleged thefts."<sup>90</sup> Although the rule does not impose on licensees any particular means or timing requirements for theft assessment, NRC guidance at NUREG-1280 suggests that licensees may demonstrate compliance with the regulation by demonstrating the *capability* to take certain actions within prescribed time frames.<sup>91</sup> One such suggested capability is to demonstrate the ability "to locate on demand any specific tamper-safed or encapsulated item or an unencapsulated item stored in a vault equivalent to tamper-safing

---

<sup>86</sup> See *id.* at 14 (erroneously adding the word "all" to the language of 10 CFR § 74.57(e)); *id.* (making small, non-substantive errors in quoting the Board's June 29, 2012 Order).

<sup>87</sup> See, e.g., *id.* at 15 (incorrectly claiming that MOX Services' asserts that it need not comply with certain portions of NRC guidance at NUREG-1280).

<sup>88</sup> See *id.* at 15, 17.

<sup>89</sup> See MOX Services Supplemental Statement of Position at 17-18; Exhibit APPR00037 at Q28.

<sup>90</sup> 10 CFR § 74.57(e); see also MOX Services' Supplemental Statement at 17-18 (explaining the regulation and associated guidance in more detail).

<sup>91</sup> See 10 CFR § 74.57(e); Exhibit APP000030 at § 3.3.1; MOX Services' Supplemental Statement at 18-20; Exhibit APPR00037 at Q28.

within 8 hours, and to verify the presence of all items in a vault within 72 hours.”<sup>92</sup> MOX Services has not rejected the guidance, as Intervenor suggests—albeit without any support or reference to the record.<sup>93</sup> Rather, MOX Services has consistently stated its commitment that the MOX Facility will be capable of updating its records system and locating one item within 8 hours and all items in vault storage within 72 hours.<sup>94</sup>

MOX Services can meet its commitment with respect to the 8- and 72- hour actions, and has not indicated otherwise, contrary to Intervenor’s assertion. On several occasions, MOX Services’ experts have explained that MOX Services maintains the capability, committed to in its FNMCP, to update its records system and locate one item in vault storage within 8 hours or all items in vault storage within 72 hours.<sup>95</sup> To do this, MOX Services uses the Perpetual Inventory Report from the MMIS, *i.e.*, its records system, and the PLCs to confirm the identity and location of items.<sup>96</sup> MOX Services can initiate and complete this mapping comparison almost

---

<sup>92</sup> Exhibit APP000030 at 3.3.1; *see also id.* (identifying other capabilities not at issue in Contention 11, such as the capability “to initiate an emergency physical inventory of all SSNM in the plant, or any portion of the plant, within 24 hours after receipt of an NRC order”).

<sup>93</sup> *See* Intervenor’s Response at 16 (claiming that MOX Services’ position is “inconsistent with the guidance” and shows “disregard for the NRC’s guidance”).

<sup>94</sup> *See* MOX Fuel Fabrication Facility Material Control and Accounting Fundamental Nuclear Material Control Plan, Exhibit APP000020, at 161 (Apr. 2010) (“The MFFF maintains the capability, if so ordered, to confirm the presence of all Pu in the plant, or any part of the plant within one week, as indicated in the PPP. This is accomplished in the following stages: (1) The presence of a specific, individual Pu item [is verified] within 8 hours and [] the presence of all Pu in item form in vault storage is confirmed within 72 hours.”); Exhibit APP000040 at 161 (“The MFFF maintains the capability, if so ordered, to confirm the presence of all Pu in the plant, or any part of the plant within one week, as indicated in the PPP. This is accomplished in the following stages: (1) Verify the presence of a specific, individual Pu item within 8 hours and verify the presence of all Pu in item form in vault storage within 72 hours. In accordance with the NUREG-1280, Section 3.3.1 acceptance criterion, this capability is provided using the MMIS and PLCs records system.”); Exhibit APPR00014 at Q58-59 (describing how MOX Services uses its MMIS and PLCs to confirm the presence of items within 8 and 72 hours); Exhibit APPR00037 at Q27 (explaining that MOX Services has provided testimony describing how it achieves the 8- and 72-hour commitment, and the bounds of that commitment); MOX Services’ Supplemental Statement at 18 (restating MOX Services’ commitment).

<sup>95</sup> *See* Exhibit APPR00014 at Q58-59; Exhibit APPR00037 at Q27.

<sup>96</sup> *See* APPR00014 at Q58-59.



instantaneously.<sup>97</sup> As Mr. Clark testified, updating the records to support this action is also nearly instantaneous.<sup>98</sup>

MOX Services has not, as Intervenor assert, committed to updating its records system only, and not actually locating items.<sup>99</sup> In fact, MOX Services provided testimony on this precise point:

Q34: So do you understand this acceptance criterion to speak only to a licensee's records system, and not also to actually locating items?

A: [SK, GC, GB] No.<sup>100</sup>

MOX Services' experts went on to testify that the relevant portion of NUREG-1280 concerns updating records so that the licensee knows where items should be, and comparing those records with the actual location of items. Again, MOX Services has provided testimony explaining that it accomplishes this by comparing its up-to-date record of where items should be (that is, the MMIS' Perpetual Inventory Report), with the actual item location (maintained separately by PLCs, the systems that actually move and place items).<sup>101</sup>

---

<sup>97</sup> *Id.*

<sup>98</sup> See APPR00037 at Q33 (explaining the historical purpose of the relevant acceptance criteria from NUREG-1280 § 3.3.1 and MOX Services' compliance).

<sup>99</sup> See Intervenor's Response at 15-16 (claiming that MOX Services intends to follow the relevant Acceptance Criterion, which pertains to updating records, but not the related Affirmation, which pertains to locating items using the updated records).

<sup>100</sup> Exhibit APPR00037 at Q34.

<sup>101</sup> See *id.*; see also APPR00014 at Q58-59. Intervenor's claim that MOX Services does not comply with the Affirmations section of NUREG-1280, Section 3.3.1 is a red herring, and its claim that MOX Services asserts that it need not comply with the Affirmations is patently false and, not surprisingly, unsupported by Intervenor. Compare Intervenor's Response at 15 (providing no reference or support for its significant claim that "MOX Services asserts that it does not need to separately comply with the Affirmation portion of § 3.3.1."), with Exhibit APPR00037 at Q 33 (explaining that MOX Services derived its FNMCP commitment from the "Affirmations" portion of NUREG-1280, Section 3.3.1). The relevant affirmation pertains to locating items, and the related acceptance criterion concerns updating records to enable the location of items. See Exhibit APP000030 at 3.3.1. Consistent with the acceptance criterion and the related affirmation, MOX Services' commitment in its FNMCP is to locate items using its updated records system. See Exhibit APP000040 at 161.

The hypothetical scenario posited by the Board in its June 29, 2012 Order is outside of the bounds of MOX Services' 8- and 72-hour commitment, but MOX Services nevertheless responded to the Board's inquiry by demonstrating how its 8- and 72-hour commitments work in concert with other commitments in the FNMCP.<sup>102</sup> MOX Services provided four sets of actions that it *may* (rather than *would*, as Intervenors suggest<sup>103</sup>) take in response to the Board's hypothetical scenario, and indicated that some of those actions *may* take a matter of days.<sup>104</sup> Intervenors point out that "[s]everal' days is a much longer time period than 8 hours and could even be longer than 72 hours," and conclude that MOX Services cannot meet its 8- and 72-hour commitments.<sup>105</sup> But Intervenors ignore or misunderstand that commitment. MOX Services maintains that it meets its 8- and 72-hour commitment, and also that it may not be able to take all of the actions necessary to respond to the Board's posited actual, alleged theft scenario within 8 or 72 hours. These positions are not incompatible. MOX Services has committed to maintain the capability to update its records system and locate one item within 8 hours and all items in vault storage within 72 hours. It has not committed to assess the validity of actual alleged thefts or locate items under every possible scenario within 8 or 72 hours.<sup>106</sup>

As MOX Services has previously explained and testified, the regulations do not require, the guidance does not recommend, and MOX Services has not committed to assess the validity of every alleged theft within 8 or 72 hours.<sup>107</sup> Nor has MOX Services committed to use its 8- and 72-hour capabilities to assess an alleged theft in all cases; such capabilities may have no

---

<sup>102</sup> See MOX Services' Supplemental Statement of Position at 24-34; Exhibit APPR00037 at Q41-49.

<sup>103</sup> See Intervenors' Response at 16.

<sup>104</sup> See MOX Services' Supplemental Statement of Position 24-26; Exhibit APPR00037 at Q41-49.

<sup>105</sup> Intervenors' Response at 16.

<sup>106</sup> See MOX Services' Supplemental Statement of Position at 18.

<sup>107</sup> See *id.* at 17-18; Exhibit APPR00037 at Q28.

bearing on the alleged theft in question.<sup>108</sup> And MOX Services has not committed to be able to conduct its 8- and 72-hour capabilities—or any of its other theft assessment capabilities—under every conceivable theft scenario.<sup>109</sup> The 8- and 72-hour commitments are instead capabilities MOX Services maintains, along with a number of other capabilities, to demonstrate that the facility overall will be designed and operated to rapidly assess the validity of alleged thefts.<sup>110</sup>

In practice, to assess the validity of an alleged theft, MOX Services has explained that it would take whatever actions are appropriate for the particular allegation raised.<sup>111</sup> In the scenario posited by the Board, MOX Services would likely take actions to determine whether the MMIS and PLC software and hardware have been compromised.<sup>112</sup> MOX Services provided considerable testimony describing those actions, and Intervenor submitted no testimony, evidence, or legal analysis in response.<sup>113</sup> MOX Services' answer to the Board's question on Contention 11 is unrefuted.

## **VI. Response to Surreply**

Intervenor's Response also addressed the two matters raised in its May 25, 2012 Surreply, namely, Intervenor's allegations: (1) that MOX Services was incorrect when it claimed that it has not previously represented any intention of conducting a physical inventory or measuring items as part of alarm resolution (which is the subject of Contention 10); and (2) that MOX Services' raised in its Proposed Reply Findings of Fact and Conclusions of Law, for the

---

<sup>108</sup> See MOX Services' Supplemental Statement of Position at 18; Exhibit APPR00037 at Q29.

<sup>109</sup> See MOX Services' Supplemental Statement of Position at 18-21; Exhibit APPR00037 at Q30-33.

<sup>110</sup> See MOX Services' Supplemental Statement of Position at 19; Exhibit APPR00037 at Q31-32.

<sup>111</sup> See MOX Services' Supplemental Statement of Position at 24; Exhibit APPR00037 at Q31, Q41.

<sup>112</sup> See MOX Services' Supplemental Statement of Position at 24-25; Exhibit APPR00037 at Q43.

<sup>113</sup> Compare Exhibit APPR00037 at Q41-49, with Intervenor's Response at 14-17.

first time, that the regulation at issue in Contention 11 pertains to presence, *but not integrity*, of SSNM items.<sup>114</sup> MOX Services addresses these two matters in turn.

In support of the first matter, Intervenor's Surreply points to Sections 3.1.3, 3.1.4.2, and 3.1.4.3 of MOX Services' FNMCP, which Intervenor's claim contain commitments to conduct physical inventories or measure items as part of alarm resolution.<sup>115</sup> MOX Services explained in its Supplemental Statement that none of those sections of the FNMCP pertain to physical inventories, and although one addresses *item* inventories, there are differences between item inventories and physical inventories.<sup>116</sup> In their Response, Intervenor's insist that "item inventory is a subset of physical inventory," and moreover, that "[i]tem inventory is functionally equivalent to physical inventory of items if item integrity is maintained."<sup>117</sup> The relevance of Intervenor's argument is not apparent. The NRC regulation that requires licensees to conduct physical inventories, 10 CFR § 74.59(f), is not at issue in this proceeding. And the regulation that is in question for Contention 10, pertaining to alarm resolution, does not reference or require physical inventories.<sup>118</sup>

MOX Services explained in its Supplemental Statement that FNMCP Sections 3.1.3 and 3.1.4.3, referenced by Intervenor's Surreply, do not contain commitments to measure items as part of alarm resolution, *to the extent relevant to Contention 10*.<sup>119</sup> And although FNMCP Section 3.1.4.2 indicates that MOX Services would *initiate* remeasurement of tamper-safed items

---

<sup>114</sup> See Intervenor's Response at 17-19; *see also* Intervenor's Motion for Leave to Submit Surreply to [MOX Services'] Proposed Reply Findings of Fact and Conclusions of Law at 2 (May 25, 2012) ("Intervenor's Surreply").

<sup>115</sup> See Intervenor's Surreply at 2.

<sup>116</sup> See MOX Services' Supplemental Statement at 28-29.

<sup>117</sup> Intervenor's Response at 18.

<sup>118</sup> See 10 CFR § 74.57(b) ("Licensees shall resolve the nature and cause of any MC&A alarm within approved time periods.").

<sup>119</sup> See MOX Services' Supplemental Statement of Position at 30-31.

found to be compromised, Intervenor have not explained the relevance of that provision to the matters before the Board.<sup>120</sup> As is apparent from the language in MOX Services' Reply Proposed Findings that is the focus of Intervenor's Surreply, MOX Services made its statement that it has no intention of measuring items in the context of its timing projections for item inventories.<sup>121</sup> Moreover, the remeasurement that MOX Services commits in FNMCP § 3.1.4.2 to initiate in response to discovery of a compromised item is addressed separately from other alarm resolution procedures, which are the subject of Contention 10, in FNMCP § 3.1.3,

*Response Time:*

The alarm resolution procedures of Section 3.1.1.4 and 3.1.4.1 of this Plan will normally be completed within three calendar days after an item is declared missing.

The procedures given in Section 3.1.4.2 for the remeasurement of a compromised item are normally completed within two working days.<sup>122</sup>

Indeed, as MOX Services noted in its Supplemental Statement, and as is still true after Intervenor's most recent filing, Intervenor have made no effort to explain the significance of the alleged inconsistencies or how or why they should affect the outcome of the Board's deliberations on Contention 10.<sup>123</sup> Rather than provide any explanation, Intervenor obfuscate. Intervenor claim that MOX Services has not explained how it would measure items during a

---

<sup>120</sup> See *id.* at 31-32.

<sup>121</sup> See MOX Services' Reply Findings at 30 n.133 ("Intervenor note that MOX Services' timing projections for item inventories 'do not take into account the time needed to perform other activities that would be conducted during a physical inventory, including assay of the contents.' [Intervenor's Initial Findings] ¶ 4.53 n.4; see also *id.* at ¶ 4.47 (referring to the time required for an 'actual inventory (which may require re-measurement of item contents)'). But MOX Services' alarm resolution methods include an *item* inventory, not a *physical* inventory. See Exhibit APP000020, at 147. MOX Services has not represented – in testimony or in legal statements of position – any intention of conducting a physical inventory or measuring items as part of alarm resolution.").

<sup>122</sup> See Exhibit APP000020 at 152.

<sup>123</sup> See MOX Services' Supplemental Statement at 29, 31-32.

physical inventory and reference FNMCP Section 4.5.<sup>124</sup> However, FNMCP § 4.5, *Physical Inventory*, has no bearing on any of the admitted contentions. Again, physical inventories are not at issue in this proceeding. And as explained in MOX Services' Supplemental Statement, even if the FNMCP identified a physical inventory or item measurement as alarm resolution methods, MOX Services has no obligation to demonstrate that it can complete any single method in three days, and MOX Services has a suite of other tools available that it can complete within three days.<sup>125</sup> Intervenors' claim is irrelevant.

With respect to the second matter raised by Intervenors' Surreply, MOX Services acknowledged that it made the statement that 10 CFR § 74.57(e) does not pertain to item integrity in error.<sup>126</sup> As MOX Services explained, "[a]lthough verification of item integrity is a component of 10 CFR § 74.57(e), it is *not* a component of the Contention at issue (which is the point MOX Services had intended to make)."<sup>127</sup> Intervenors disagree, claiming in their Response that, "the need to verify integrity of items is implicit" in the 8- and 72-hour commitment at issue in Contention 11, because MOX Services' commitment, as characterized by Intervenors, "refers to the presence of plutonium and not simply the presence of items."<sup>128</sup>

Intervenors are incorrect. The contention language itself references MOX Services' commitment as "confirming the presence of a *specific individual plutonium item* within eight

---

<sup>124</sup> See Intervenors' Response at 19.

<sup>125</sup> See MOX Services' Supplemental Statement at 29, 31-32. Moreover, MOX Services commits to "normally" complete remeasurements in response to discovery of a compromised item within two days. See Exhibit APP000020 at 152 ( "The procedures given in Section 3.1.4.2 for the remeasurement of a compromised item are normally completed within two working days.").

<sup>126</sup> See MOX Services' Supplemental Statement at 32.

<sup>127</sup> *Id.*

<sup>128</sup> Intervenors' Response at 19.

hours and verifying the presence of all *Pu in item form* in vault storage within 72 hours.”<sup>129</sup> The precise language of MOX Services’ commitment is almost identical.<sup>130</sup> Clearly, the commitment at issue in Contention 11 pertains to verification of the *presence* of plutonium *in item form*. The record is clear that Contention 11 has been consistently limited to presence verification, and Intervenor’s have not alleged otherwise until this eleventh hour.<sup>131</sup>

In sum, Intervenor’s continue to fail to demonstrate that the matters raised in their Surreply are material to the admitted contentions or the outcome of this proceeding.

## **VII. Conclusion**

For the reasons set forth in this Reply Statement of Position, as supported by the testimony filed herewith, and for the reasons set forth in MOX Services’ Initial, Reply, and Supplemental Statements of Position and supporting testimony and evidence, MOX Services complies with the regulations at issue in Contentions 9, 10, and 11. Accordingly, MOX Services respectfully requests that the Board issue an initial decision resolving Contentions 9, 10, and 11 in MOX Services’ favor.

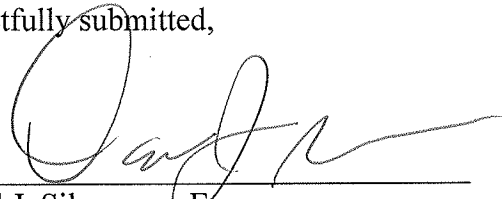
---

<sup>129</sup> Petitioners’ Motion for Admission of Contentions 9, 10, and 11 Regarding [MOX Services’] Revised Fundamental Nuclear Material Control Plan at 14 (July 26, 2010) (emphasis added).

<sup>130</sup> See Exhibit APP000040 at 161 (“Verify the presence of a specific, individual Pu item within 8 hours and verify the presence of all Pu in item form in vault storage within 72 hours.”); see also MOX Services’ Supplemental Statement at 32-34 (providing further support for the position that integrity verification is not relevant to MOX Services’ 8- and 72-hour commitment or the related NRC guidance).

<sup>131</sup> See [MOX Services’] Answer to Intervenor’s Motion for Leave to Submit to Surreply at 3-4 (May 30, 2012) (providing references to MOX Services’ initial statement of position, first evidentiary filing, reply statement of position, reply testimony, live testimony, and initial and reply findings of fact and conclusions of law, demonstrating that MOX Services has consistently understood Contention 11 to pertain to presence—not integrity—verification, and that Intervenor’s did not challenge that characterization at any time—not in statements of position, live or prefiled testimony, questions for the Board, questioning of experts at the hearing, or in findings of fact and conclusions of law—prior to its Surreply).

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Donald J. Silverman', written over a horizontal line.

Donald J. Silverman, Esq.

Anna Vinson Jones, Esq.

MORGAN, LEWIS & BOCKIUS, LLP

1111 Pennsylvania Ave., N.W.

Washington, D.C. 20004

Phone: (202) 739-5502

E-mail: [dsilverman@morganlewis.com](mailto:dsilverman@morganlewis.com)

*Counsel for Shaw AREVA MOX Services, LLC*