NADCAP NEWSLETTER

VOLUME 4 — ISSUE 3

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IN BRIEF...

Nadcap is an approach to conformity assessment that brings together technical experts from Industry to manage the program by establishing requirements for accreditation, accrediting Suppliers and defining operational program requirements. This results in a standardized approach to quality assurance and a reduction in redundant auditing throughout the aerospace industry.

Nadcap is administered by the Performance Review Institute (PRI), a not-for-profit organization headquartered in the USA with satellite offices in Europe and Asia.

www.Nadcap.org

Welcome to the third edition of the 2019 Nadcap newsletter. This last issue of 2019 starts by focusing on the audit experience of a Nadcap Supplier from the USA that joined the program over 25 years ago. It also includes an article announcing the 2019 Nadcap Supplier Survey.

The newsletter then provides a deep-dive into the Nadcap Measurement & Inspection (M&I) Task Group, our usual commodity-specific article. The procedural focus is given to Nadcap Operating Procedures (OP) 1110 – Audit Failure and Risk Mitigation, OP 1109 – Audit Advisories, and OP 1113 – Appeals, which are the Operating Procedures that apply when an Auditee wishes to contest a Task Group decision such as an audit failure. Although this applies to very few audits, we firmly believe it is important for the Nadcap community to be aware of this process.

As part of PRI's broader brand strategy that reaches across the whole organization, we have just launched our new website and unveiled our new Nadcap logo – more on this later in this newsletter.

An article on the recent eAuditNet Nadcap Merit status enhancement concludes this newsletter.

We continue to do our best to provide you with valuable content and your ideas are welcomed.

Michael Hayward
Executive Vice President & Chief Operating Officer
Performance Review Institute

MY NADCAP AUDIT EXPERIENCE

In this edition, our usual "real audit case study" article focuses on a company that has extensive experience of the Nadcap program and that has gone through major internal changes over its 54 years of activity in the aerospace industry, especially recently. Gary White, Quality Manager at Element Materials Technology and Co-Vice Chair of the Nadcap Supplier Support Committee (SSC) took the time to share his perspective on the program.

Can you briefly describe your company to set the scene?

Orbit Industries was founded in 1965 in Cleveland Ohio, USA and specialized in Non-Destructive Testing. In the early

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1970's, Orbit moved to Middleburg Heights, Ohio, USA. A major change in the company history happened in August 2018. Orbit Industries was purchased by Element Materials Technology and on March 1, 2019, Orbit Industries' name was changed to Element Materials Technology Cleveland – Middleburg Heights.

Our company has grown a lot since its creation. Element Materials Technology Cleveland – Middleburg Heights – formerly Orbit Industries – now has four Nadcap accredited facilities with a fifth facility planning for initial accreditation:

1. Middleburg Heights, Ohio – main facility – Nadcap accredited for Liquid Penetrant, Magnetic Particle, Ultrasonic Testing and Chemical Processing for Pre-Penetrant Etch and Nital Etch
2. Bedford Heights, Ohio – Nadcap accredited for Magnetic Particle and Chemical Processing for Nital Etch
3. North Jackson, Ohio – Nadcap accredited for Ultrasonic Testing
4. Titusville, Pennsylvania – Nadcap accredited for Ultrasonic Testing
5. Dunkirk, New York – Ultrasonic Testing. We are planning on our initial Nadcap audit to start sometime in 2020 and hopefully get our first accreditation before the end of next year

How did you first hear about Nadcap and why did your company decide to pursue Nadcap accreditation in the first place?

We first heard about Nadcap in the early 1990's through the Aerospace community as we have always been highly involved with and for the industry, and maintained a close relationship ever since our company's creation. We have been part of the Nadcap program since 1993.

Besides being mandated by the subscribing members – General Electric at the time was the main driver for mandating Non-Destructive Testing and we also expected other subscribing members to follow suit, which is what happened – we felt that this would be a worthwhile endeavour to strengthen and enhance our commitment to quality.

With General Electric mandating one commodity and aware that similar aerospace companies would most probably require the same level of quality from their Suppliers, making the decision to become Nadcap accredited did not take us long. Orbit Industries owners at the time led the effort to get our first Nadcap accreditation, and I supported them.

How easy is it to find the information you need to help you prepare for a Nadcap audit?

For our organization, information needed to prepare for an audit is easy to find. We have been involved with the program since 1993 and gained significant experience since then. Fully aware that preparation is key for a successful Nadcap audit, we always make sure that we have the latest Audit Criteria.

We also perform a self-audit against that Audit Criteria before each Nadcap audit and ensure the results of this self-audit are uploaded to eAuditNet no later than 30 days before the date of the actual audit.

How long before the actual audit do you start preparing and what do you do to prepare for a Nadcap audit?

We start preparing for the audit three months in advance. We use what we call "a timeline sheet" that helps us keep track of our process and also ensure we can follow closely our progress on the audit preparation.

The timeline consists of milestone dates that need to be completed by assigned individuals such as:

- Date when the Audit Criteria need to be downloaded from eAuditNet
- Deadline to pay our Nadcap audit related invoices
- What Audit Criteria were downloaded and whom they were distributed to
- Date when each checklist needs to be completed
- Team members' names responsible for reviewing the Audit Criteria
- Deadlines for revising our internal procedures if needed
- Dates for following up on any outstanding issues found during the self-audit
- Deadlines to upload all the Audit Criteria into eAuditNet
- Dates for initial contact with our Nadcap Auditor

This timeline is invaluable to us in that it keeps everyone involved on their tasks and shows accountability. Being the Nadcap lead within my company, I am responsible for this timeline and I lead our weekly "Nadcap team meeting" where we discuss progress.

How do you find the audit scheduling process?

The scheduling process is straight forward. We receive an email from eAuditNet and accept the terms.

Do you have much interaction with PRI staff before the Nadcap audit and how is it?

Interaction with PRI staff is minimal because everything is done through eAuditNet but when we needed to contact the staff, it was a very pleasant experience. They are always quick to respond to our needs.

What are your expectations of the following and how do they compare with what actually happens...

...the Auditor and his/her way of conducting the audit?

We usually contact the Auditor (sometimes they contact us first) at least 30 days prior to the audit to establish the lines of communication. This has worked well in establishing protocol for things such as start times, safety related requirements and any other needs.

...opening session?

Very important, the opening session sets the tone for the audit. All the key players need to be present – QA Manager, Level 3, General Manager, and Office Manager. We discuss with the Auditor the best way to work the audit – mainly scheduling compliance jobs.

Based on workload, we may need to move around within the Audit Criteria to accomplish the compliance jobs. Auditors have been very understanding and responsive to this need over the years.

...closing session?

We request a closing session at the end of each audit day to review and discuss any issues/comments/observations with the Auditor. We need to clearly understand any open issues. Here again, with the closing session, the key players need to be present.

In the past, these closing sessions have already helped us avoid a non-conformance (NCR) by simply discussing and understanding what the Auditor was looking for.

What did you find was the most challenging during the audit?

Coordinating all the activities between the Auditor and shop personnel for compliance jobs is probably the most challenging aspect of Nadcap audits. Work needs to be in the shop during the audit and sometimes coordinating these jobs may not work as effortlessly as expected. It has

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always worked out for us in the past because the Auditors have been very accommodating.

What could be done to improve the experience of going through a Nadcap audit as well as having an Auditor on site?

Overall, I think Auditor consistency would improve the experience. Auditors come from varying backgrounds and experiences which sometimes can be challenging when discussing how to interpret an Audit Criteria question.

It seems everyone has a different opinion or interpretation even with guidance in the Audit Criteria or Handbook. One way to maintain or even improve Auditor consistency could be to have Audit Criteria questions as clear as possible.

What is the first thing you do once the Nadcap Auditor leaves?

The first thing we do is sit back and take a deep breath! We actually debrief with everyone involved in the audit and go over any non-conformance(s) or observations.

What steps do you take next?

We start to work on the NCR(s), if there are any, right after the audit is complete and assign action items to various individuals based on their expertise.

How does the outcome of the audit and your company performance compare to your expectations?

Our expectation is that we have zero findings. Sometimes this is not possible, but we do always look for improvements. If we have NCR(s), we view them as opportunities as opposed to something negative. We work the issue and expect to have a robust corrective action to prevent a recurrence.

How do you go about responding to NCRs, if you have any?

We set up a corrective action team comprised of members of the company with different backgrounds.

We do this in hopes of having a "different set of eyes" looking at the issue and asking questions in hopes of truly solving the issue.

What tools do you find most useful in the RCCA process?

Generally, we use the 5-Why method. We keep asking "why" until we are satisfied that we drilled deep enough to get to the root of the issue. Sometimes we get to the "root" in less than 5-Why and sometimes more. We also will utilize a fishbone to help with root cause.

Do you have much interaction with PRI staff after the Nadcap audit and how is it?

We have minimal interaction with PRI Staff once the audit is complete. Being involved with Nadcap for over 25 years, we have on occasion interacted with staff. The experience has been very interactive and positive in their willingness to help.

To conclude, I would like to share some thoughts about our years of experience with the Nadcap program. Two items are key when it comes to Nadcap audits:

- Preparation is paramount to a successful audit. The preparation needs to involve all those who will be part of the audit. Complete the self-audit Audit Criteria honestly and fully. If you check the yes box, have the objective evidence ready, available, and noted onto the Audit Criteria (and review it for completeness). Auditees can use Word copies of the Audit Criteria, available in eAuditNet, to complete the self-audit more easily.

- Commitment needs to be driven by top management to the people who will ultimately be part of the audit. Audit preparation will take resources away from normal activities and management must be willing to accept this.

Gary White

2019 NADCAP SUPPLIER SURVEY

The Supplier Support Committee (SSC), a body of Supplier volunteers, serves as a consolidated voice to the Nadcap Management Council (NMC) and advocates on behalf of all Nadcap Suppliers. Its goal is to represent the Supplier community and work with the NMC to enhance the effectiveness and economical value of the Nadcap system for the mutual benefit of both Suppliers and Subscribers.

In an effort to drive continual improvement, the Nadcap SSC just launched the 2019 Nadcap Supplier Survey at the recent October Nadcap meeting in Pittsburgh, PA, USA. Released every two years, the Nadcap Supplier Survey was first launched back in 2003 in order to gather as much feedback as possible from Suppliers on their experience of the Nadcap program and how to constantly improve it.

Some of the most recent and major achievements of the Nadcap Supplier Survey are:

- The Supplier Handbook was released in May 2019 at the request of Nadcap Suppliers. It can be found in eAuditNet under Resources / Documents / Public Documents / Supplier / SSC Documents as shown on the right. This guide covers a range of important information for all Nadcap Auditees. An article dedicated to this guide can be found in the Nadcap newsletter Volume 4 issue 1 (March 2019) in the Resources area of the PRI website www.p-r-i.org

- We have improved the PRI website structure and navigation. Aware that the PRI website needed a long overdue enhancement – many Suppliers requested it throught the Supplier Survey and also informally at Nadcap meetings/symposia – we are proud to announce that the new PRI website has been launched a few weeks ago (more about the new PRI website on page 13).

- The SSC made improvements to the Mentoring program by streamlining the request process and have worked to increase the number of Supplier Voting Members in Task Groups by offering training at each Nadcap meeting.

All these examples make it clear that it is in the interest of all Suppliers to take part in this initiative and provide feedback about their Nadcap experience and share their ideas through this survey. To support this, the SSC has had the survey translated into the most common languages within Nadcap.

- English

- French

- Spanish

- Chinese

- Japanese

Please feel free to contact us at NadcapSSC@p-r-i.org if you have any questions about the 2019 Nadcap Supplier survey.

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MEASUREMENT & INSPECTION (M&I) AUDIT INSIGHTS

Many Measurement & Inspection (M&I) processes are utilized throughout manufacturing to verify that final products meet dimensional specification requirements. Even a small failure to accurately measure aerospace product can lead to performance degradation, sub-optimal products, manufacturing and assembly problems, increased cost and lead-time, reduced life, and ultimately part failure.

A range of methods can contribute to the effectiveness of M&I processes including calibration, product definition and interpretation of requirements, inspection planning and feature coverage, equipment and measurement process validation, maintenance and measurement environments, and training and competencies.

Today, only a few of these processes are audited at a detailed-industry wide level. The lack of a "deep dive" compliance audit can allow many M&I basics to be missed in most current auditing programs which leaves a very high potential for product impact. To help with these issues and provide a "deep dive" compliance audit, the Nadcap M&I Task Group was launched at the October 2012 Nadcap Meeting in Pittsburgh, PA, USA. Voting members were identified at that time, procedures and Audit Criteria (AC) were developed, and the M&I program was released in 2013.

The first Nadcap Measurement & Inspection Task Group Chairpersons were Simon Gough Rundle of Rolls Royce and then Al Berger of GE Aviation. Both were instrumental in the establishment of the Task Group, the Audit Criteria, and the general direction of the Task Group. Norm Gross from The Boeing Company also supported the Task Group during its first years of operation as the Vice Chairperson. The Task Group is now comprised of 46 industry representatives from 36 different companies.

The Task Group has experienced much change over the last year and at the most recent Task Group meetings, including a transition in leadership. The new Chairperson of the Measurement and Inspection (M&I) Task Group is Steve Row from Collins Aerospace and the new Vice

Chairman is now Bob Elliott of the Lockheed Martin Corporation.

The first Measurement and Inspection audits were completed in 2015 for the General Electric (GE) mandate for the Airflow process. Shortly thereafter, in January 2016, the first Coordinate Measurement Systems audits were conducted. Audit Criteria, audits and mandates continue to expand to cover other dimensional measurement requirements over the aerospace industry.

The M&I Task Group is making progress on the Audit Criteria from work done at the last nine Nadcap meetings, and all the M&I Audit Criteria are currently in some form of revision or in the balloting process.

It is crucial that Auditees make sure they use the latest version of the Audit Criteria, as this is the one which will be used by the Nadcap Auditor during the actual audit. They can be found in eAuditNet under Resources / Documents / Audit Criteria / Measurement & Inspection as shown. There you can also find Microsoft Word copies of the Audit Criteria – useful to complete your self-audit, as Auditees can type their responses directly in the document – as well as the M&I Handbook that shares auditing and response guidelines, audit preparation and guidance, and more.

The Nadcap M&I audit program includes all the fundamentals, as well as technology specifics. It is

COMPOSITES TRAINING AT 2020 NADCAP MEETINGS

The Composites Task Group (COMP) will be offering a full day free training at all 2020 Nadcap meetings – Beijing, China; London, UK; Pittsburgh, USA. The training will focus on the introduction of modified scope audits and new job audits in Audit Criteria AC7118 Rev G. The Sub Team developing and conducting these trainings is comprised of Subscriber representatives from Bell Helicopter Textron, The Boeing Company, GE Aviation, Honeywell Aerospace, Rolls-Royce, SAFRAN Group, and Spirit AeroSystems.

Please email composites@p-r-i.org if you have any question about this training.

structured in a way that allows for flexibility, ensuring that it can be deployed globally, across a chosen supply chain, against a specific commodity and specific technologies. The M&I Task Group covers Coordinate Measurement Machines, (CMM), Laser Trackers, Articulating Arms, Airflow Benches, 3D Scanners, and General hand Tool measuring equipment.

Subscriber mandates, changes, Task Group actions

The last two years have been extremely productive for the M&I Task Group and listed below are the current M&I audit mandates and some of the other recent accomplishments and actions:

- GE is mandating Mass Airflow bench processes (AC7130/5) and many Suppliers are now on 18- or 24-month Merit (audit frequency)

- Rolls Royce is mandating 3D Structured Light (AC7130/4) for Suppliers utilizing 3D scanners which is identified in the Rolls Royce MCL127 document

- Airbus, Airbus Defense and Safran are mandating Suppliers utilizing Coordinate Measurement Machines (AC7130/1), Laser Trackers (AC7130/2), and Articulated Arms (AC7130/3)

- The Boeing Company is accepting the Nadcap audit to grant extended frequency for Boeing Digital Product Definition (DPD) audits to any Nadcap accredited Supplier that utilizes Coordinate Measurement Machines (AC7130/1), Laser Trackers (AC7130/2), and Articulated Arms (AC7130/3)

- The M&I Audit Handbook has been updated extensively over the last year and there will be many more additions to come in the very near future. The Handbook should answer most issues that any Auditor or Auditee may run into, and it contains valuable information for any Auditee prior to an audit.

Upcoming changes and actions that Dave Marcyjanik, Nadcap Senior Staff Engineer for M&I, considers newsworthy to the entire community:

- The AC7130/2/3/4 checklists will also be revised with four questions at the end of each to answer the Remote Compliance Audit (RCA) requirements to support Suppliers where work is performed only at a remote facility, not under the ownership of the Supplier.

- Future revisions of the AC7130/1/2/3 checklists will also have questions added to accommodate Auditees that utilize 3D scanners that are attached or utilized with Coordinate Measurement Machine (CMM)s, Laser Trackers and Articulating Arms.

Current Nadcap M&I Audit Criteria (AC):

- **The AC7130 Checklist** is the "Baseline" Audit Criteria for the Measurement & Inspection Accreditation Program. This checklist is utilized for any and all audits, and covers the general Auditee data, Operator training, equipment calibration, and more.

- **The AC7130/1 Checklist** covers Coordinate Measurement Machine operations and calibration to include compliance work reviewed on the production floor. Scanners that are mounted on these systems will be addressed in the very next technical release of this checklist.

- **The AC7130/2 Checklist** focuses on Laser Tracker operations and calibration to include compliance work reviewed on the production floor. Scanners that are mounted on these systems will be addressed in the very next technical release of this checklist.

- **The AC7130/3 Checklist** examines the Articulating Arm operations and calibration to include compliance work reviewed on the production floor. Scanners that are mounted on these systems will be addressed in the very next technical release of this checklist.

- **The AC7130/4 Checklist** is the newest M&I checklist. This checklist is to be used by mandated Suppliers that utilize Three-Dimensional Structured Light Scanning Systems. This checklist is used for hand-held and fixed position scanners that can capture far more measurement data points than with conventional measurement processes, and more quickly.

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- **The AC7130/5 Checklist** covers Mass Airflow Measurement of Turbine Engine Parts, operations, and calibration of equipment to include compliance work reviewed on the production floor.

- **The AC7130/6 Checklist** is for General Inspection for Hand Tool measuring equipment to include but not limited to calipers, micrometers, run-out gages, plug gages, no-go gages, and more.

As an additional help for new Auditees, PRI Training offers a Nadcap Audit Preparation course for Measurement & Inspection which provides a complete overview of all Nadcap M&I Audit Criteria requirements. This two-day training covers the scope of the Measurement & Inspection audit and reviews the top audit findings related to M&I audits. Please contact PRI Training at PRI-Training@p-r-i.org if you have any questions or would like assistance with registration.

Also, a series of "Introductions" about the M&I program is given during all Task Group meetings. Note also that the Task Group reviews the AC7130 and the AC7130/1 checklists fully and discusses how to meet expectations of each question in those checklists on the Wednesday of every Nadcap meeting.

Top non-conformances (NCRs) for each M&I checklist

Since the M&I Task Group began, there have been over 400 audits for Coordinate Measurement Systems and more than 150 audits for Airflow Suppliers. The M&I Task Group routinely gathers data from all audits and compiles that into presentations that are shown at each Nadcap Meeting open session.

Listed below are the Audit Criteria questions most commonly causing NCRs ranked in order, from the highest to the lowest NCR rate, for the top five NCRs/ Audit Criteria (by checklist paragraph) identified during the audits conducted over the last three years. Further content and how to address compliance of the NCRs is provided during the PRI Training M&I Audit Preparation courses and is also available in the M&I Audit Handbook.

The M&I baseline checklist (AC7130)

- Para. 4.1.3 - Is there evidence that the calibration requirements have been flowed down to the calibration laboratory?

- Para. 3.10 - Did the Auditee upload a copy of their completed self-audit to eAuditNet at least 30 days prior to the audit - utilizing the version of the checklist(s) applicable to this audit?

- Para. 4.1.1.1 - If measurement equipment did not meet the calibration requirements, is there evidence of appropriate action taken?

- Para. 3.12 - Does the self-audit include one compliance job per each applicable technology checklist?

- Para. 3.9 - For re-accreditation audits, were corrective actions from the previous audit implemented?

The CMM checklist (AC7130/1)

- Para. 4.4.3 - Is there evidence the measurement method used is capable to perform the required inspection?

- Para. 4.6.3 - Is there evidence to show that environmental conditions have been assessed and appropriately controlled?

- Para. 4.4.1 - Is there a process addressing the verification checks of CMM operation and accuracy, and is it being followed?

NADCAP MEETING MINUTES AND AGENDAS: NEW LOCATION

Nadcap meeting agendas and minutes for the Nadcap Management Council (NMC), Task Group and Supplier Support Committee (SSC) meetings are now stored on eAuditNet under Resources / Documents / "Meeting Information". You can still register to attend the Nadcap meetings and view hotel, airport and visa information on the PRI website at www.p-r-i.org/nadcap/meetings/

Please contact PRINadcap@p-r-i.org if you have any questions.

- Para. 4.3.3 - Is the stylus qualification sphere or master tip calibrated and in good condition (clean and fit for purpose)?
- Para. 4.6.2 - Is there a process to manage the temperature around the CMM, and is it being followed?

The Laser Tracker checklist (AC7130/2)

- Para. 4.4.2 - Is there evidence the measurement method used is capable to perform the required inspection?
- Para. 4.4.3 - Is there a documented procedure that addresses verification checks performed at the beginning, during, and at the end of the measurement process?
- Para. 4.4.3.1 - Is there evidence of verification checks performed in accordance with the documented procedure?
- Para. 4.5.4 - Is the calibration status of the equipment identified with the next due date?
- Para. 4.5.3 - Does the Laser Tracker equipment identified, display appropriate calibration status?

The Articulated Arm checklist (AC7130/3)

- Para. 4.5.1 - Does the documented procedure address verification checks performed at the beginning, during, and at the end of the measurement process to determine continued stability of the arm alignment to the part?
- Para. 4.5.1.1 - Is there evidence of verification checks performed in accordance with the documented procedure?
- Para. 4.5.2 - Is there evidence the measurement method used is capable to perform the required inspection?
- Para. 4.7.2.1 - Is there evidence of the part temperature being monitored and/or managed?
- Para. 4.7.3 -Is there evidence to show that environmental conditions have been assessed and appropriately controlled?

Note: The data for the AC7130/4 summary does not exist as only the first few audits have been conducted at the time of publishing this article. The AC7130/6 checklist data is also so minimal as not to be presented here until enough data is available to indicate trends.

The Mass Airflow checklist (AC7130/5)

- Para. 4.4.3 - Does the Airflow equipment identified, display appropriate calibration status?
- Para. 4.4.4 - Is the calibration status of the equipment identified with the next due date?
- Para. 4.2.1.3 - Is the Dewpoint measured in accordance with customer requirements?
- Para. 4.8.1.4 - Does the documented procedure include dismounting and remounting of the AIS / Master in the test fixture for the repeat measurements?
- Para. 4.3.7 - Are the acceptance limits for the verification check compliant to customer requirements?

Nadcap Auditees are strongly encouraged to strictly follow the Nadcap Audit Criteria and perform thorough self-audits long enough before the actual Nadcap audit in order to have sufficient time to address any outstanding issue(s) found.

Job Audits and Hardware Availability (Compliance Jobs)

Job audits, compliance jobs, witnessed jobs, paper audits, historical jobs, and more. The list goes on. There are many terms used when a Nadcap Auditor watches a part being processed by the Auditee. This is considered one of the most critical aspects of a Nadcap audit. It is also where all the procedures, calibration certificates, purchase orders (PO), training records, inspection records, software control, program control, operators' capability, etc., are verified to confirm compliance with the requirements.

From an M&I perspective, we use the term

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"job audit". There is an expectation that two (2) "job audits" be witnessed for each of the technologies within the M&I Audit Criteria. Depending on the number of technologies audited and their types, this can differ. There are two types of measurements in M&I:

• Measuring by using coordinates known as CMS (Coordinate Measurement Systems); CMM (Coordinate Measurements Machines), LT (Laser Trackers) and AA (Articulating Arms) falls into this category.

• Measuring by mass airflow. While this technique may not mean much for Auditees that do not deal with mass airflow, it is a very important aspect for those who do.

There are specific scenarios where more than two job audits are required. For example, adding Laser Tracker accreditation to CMM requires three job audits, and adding CMM accreditation to Airflow means that four job audits are required. The table below helps understand these scenarios and more information is shared afterward.

Job audit compliance table

Airflow Accreditation	
2 job audits	
CMS Accreditation (CMM/LT/AA)	
One Technology	2 jobs
Two Technologies	2 jobs for one technology 1 job for the remaining technology
Three Technologies	2 jobs for one technology 1 job for each remaining technology

Some are under the impression that because the current primary mandate for M&I is Airbus, that when an Auditor is on-site for an audit, only Airbus hardware should be reviewed for compliance. Certainly, Airbus hardware would be expected to be reviewed on the production floor for compliance; to confirm that the Auditee can and does appropriately flow-down

specifications and more. However, the expectation is that an Auditee can, and actually should, produce other customer hardware for job audits.

For compliance job witnessing, the Auditee is expected to ensure that there is adequate aerospace hardware available on-site for processing during the audit. During any M&I audit, the Task Group requires witnessing of two compliance jobs for the first technology Audit Criteria run by the Auditor. For every technology Audit Criteria thereafter, the Auditor is required to witness one compliance job for each additional technology process that is audited. However, the Nadcap Auditor is not necessarily restricted to witness only Airbus hardware for compliance. As a matter of fact, the Nadcap model has always been that all Subscribers that are part of the Nadcap Task Group (regardless of whether they mandate or not) will accept the compliance job witnessing of another Subscriber's hardware as evidence that the Auditee can process the hardware to any other Subscriber's requirements.

It is not the intent of Nadcap to restrict hardware witnessing only to a mandating Subscribers hardware. For example, the Auditor may witness an Airbus job, and if the Auditee also works for Goodrich, the Auditor can select a Goodrich job to witness for the second compliance job. It is also possible that if for some justifiable reason, the Auditee does not have any active Airbus work on-site during the audit, the Auditor can select aerospace work of any other Subscriber or other customer to witness. This validates the Auditee's capability to process hardware to other customers' requirements.

The Task Group has also clarified that if no production parts or tooling are available, "demo parts" can be processed utilizing production equipment, artifacts or something representative of supplier work to demonstrate the process. Production hardware is certainly preferred to confirm flow-down. If "demo work" is selected on the production floor (only in the case of no work on-site), it is expected of the Auditor that in conjunction with the "demo work", an additional historical record (archive job no more than 12 months

old) shall be reviewed for one customer job to review flow-down.

During the compliance witness portion of the audit, the Auditor is observing and witnessing the Auditee's ability to flow-down requirements and to process work that confirms the use of current specifications, and to confirm the Auditee's ability and use of their document control system. In other words, the M&I Task Group representatives will accept the other Subscriber compliance jobs as acceptable for final accreditation to the M&I process.

Auditees should ensure that there is work available during all audits for compliance witness and should contact their customer representatives to ensure on-site work or obtain/request hardware prior to the audit. If Auditees have any questions, they are directed to each Audit Criterion as the requirements are clearly defined immediately before each compliance job section. Any other technical questions can be directed to the Staff Engineer for clarification.

There are many different scenarios that occur during an audit and that can make witnessing job audits a little more complex. Some examples are lack of parts, inspection of a single part taking longer than two shifts to complete, and more. Each scenario does vary, so it is not easy to capture in such an article. If such situations occur, discuss with the Auditor or request clarification from the Staff Engineer.

Self-audit and pre-audit information attachment

As most Auditees know, there has been a change to OP 1105 – Audit Process that requires an Auditee to upload the Nadcap self-audit to eAuditNet at least 30 days prior to any Nadcap Audit, excluding a Verification of Corrective Action Audit (VCA). You can find an article on self-audit effectiveness in the Nadcap newsletter Volume 4 – Issue 2 (July 2019) in the Resources area of the PRI website. Each Task Group has been directed by the Nadcap Management Council (NMC) to add the following three new questions to all commodity baseline Audit Criteria regarding the self-audit:

1. Did the Auditee upload a copy of their completed self-audit to eAuditNet at least 30 days prior to the audit? (30 days to the hour or more)

2. For each question in the checklist, has the Supplier identified where the means of compliance or evidence of compliance may be found? (Reference to the procedure identification and paragraph number, location of a document in the Supplier's Document Control System, Library location, and more)

3. Does the self-audit include one compliance job per each applicable technology checklist? (The Supplier should conduct a compliance job with an operator on the production floor and document the job in the checklist)

The actual attachment of the self-audit has been the most problematic for quite a few Auditees. The self-audit is required to be attached at least 30 days prior to the audit start date. Please be advised that even at 29 days attachment (less than 30) prior to the audit, the Auditor is required to write an NCR at that facility. eAuditNet has a dedicated section for the attachment of a completed Auditee self-audit using the AC7130 and all other applicable technology Audit Criteria (AC7130 and AC7130/1/2/3/4/5/6).

Separately, there is a location for all requested pre-audit general information such as lists of applicable subscribing Nadcap users, current Quality Systems approvals, procedures, processes to be approved and M&I equipment lists.

All the aforementioned information is to be uploaded 30 days or more prior to the audit start date so that the Auditor can begin to review documentation prior to the actual start of the audit. Auditors are quite busy auditing during the week and the availability of the information well in advance of the audit accommodates the Auditor review on any weekend or other unscheduled time prior to the audit.

Excluding the self-audit itself, if at any

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MEASUREMENT & INSPECTION (M&I) AUDIT INSIGHTS
Continued from previous page

time pre-audit information such as procedures cannot be attached, the Auditor may accommodate the Auditee with an extra day on-site to conduct review of those procedural materials. Please contact the PRI Scheduling department at scheduling@p-r-i.org for pricing to coordinate the addition of an extra day on-site for the Auditor to conduct that review.

Keys to an Effective Self-Audit

• Download all the Audit Criteria within the scope of the audit, ensuring the revisions used are those that will be effective at the time of the Nadcap audit.

• Review the Audit Criteria and the Measurement & Inspection Audit Handbook to ensure all of the questions, interpretations, and the objective evidence necessary to demonstrate compliance to the questions is understood.

• Contact the Staff Engineers if clarification is needed regarding interpretation of questions or Task Group expectations.

• For each Audit Criteria, perform a thorough self-audit. The Internal Auditor should be a person knowledgeable with the process and equipment. The recommendation is that the Internal Auditor is not the same person who is performing the task.

• Utilize several people, if possible, for the self-audit. Have more than one person to confirm compliance.

• Verify and record the procedural documentation for each question (as applicable). Note the procedure number and section/paragraph on the checklist itself.

• If this is not an initial accreditation audit, refer to the previous Nadcap audit for non-conformance(s) written against Audit Criteria questions. Validate the effectiveness of the corrective actions of the previous audit to ensure that there are no non-sustaining corrective actions.

• The previous self-audit can be a tool to help with the current self-audit, but each answer should be reverified.

• If there has been an Audit Criteria revision since the last self-audit, additional emphasis should be placed on ensuring that new or changed requirements have been verified for implementation.

• Perform job audits for each special process and test observations to verify that work instructions meet Nadcap requirements.

• Identify and correct any non-conformance found during the self-audit. Perform a root cause analysis when appropriate. Compliance to all Nadcap requirements must be met at the time of the Nadcap audit. Even though you may have self-identified an issue, if the corrective actions are not completed at the time of the Nadcap audit, the Auditor must write an NCR regarding that issue.

• The self-audit should be completed with sufficient time to implement any corrective actions necessary before the Nadcap audit.

• The self-audit must be uploaded to the appropriate audit into eAuditNet at least 30 days prior to the start of the Nadcap audit. If there is an associated Aerospace Quality System (AQS) audit, the self-audit to AC7004 must be uploaded to the AQS audit. If there is an associated satellite audit as defined in OP 1104 – Audit Scheduling, the self-audit checklists for the satellite are to be uploaded into the satellite audit on eAuditNet.

• Both the Auditor and Auditee should use the self-audit checklists during the Nadcap audit as a reference to help complete the audit on time.

We hope this article is insightful and helpful. Please feel free to contact
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UPDATED VISUAL IDENTITY

As shared with the attendees at the Nadcap meeting last month, the Performance Review Institute conducted a branding review in 2019 and, as a result, is making some updates to its visual identity. As part of PRI's broader brand strategy, that reaches across the whole organization, this impacts all of the programs, services and tools, including Nadcap.

As we embark on the implementation phase of the project, you will start to see the updated logo on our website and in other locations. The font and globe have been refreshed to give the logo a more contemporary feel and the words "Administered by PRI" have been appended as part of the logo.

As a result of this change, we will be in contact with you in due course with an updated Nadcap accreditation certificate, flag and mark of conformity guidance.

While our logo is changing, you can continue to expect from us the same excellent customer service and attention to detail that Nadcap has always demonstrated. If you have any questions, please don't hesitate to contact us.

NEW WEBSITE

As part of our focus on excellent customer service, we are making a number of changes to the PRI website, to make our content more useful and accessible to our customers, while streamlining your online experience. The revised website launched on October 31 and key improvements we have made include:

• Improved navigation, to help you find what you're looking for more easily

• Dynamic FAQs using artificial intelligence via "Ask the Team", showing you PRI staff who may be providing your customer support

• Enhanced resources area, enabling you to filter our content to find information that best meets your needs

• Streamlined content to improve your experience, including moving detailed Nadcap meeting agendas and minutes to eAuditNet, the site you visit most often. (Registration, hotel and airport information, as well as the agenda-at-a-glance will still be posted to the PRI website to help you plan your trip)

• Continued ability to provide online content in multiple languages

If you have any questions, please don't hesitate to contact us. A website is an evolving tool for our customers to use, so we welcome your feedback to help us continue to improve it for your benefit.
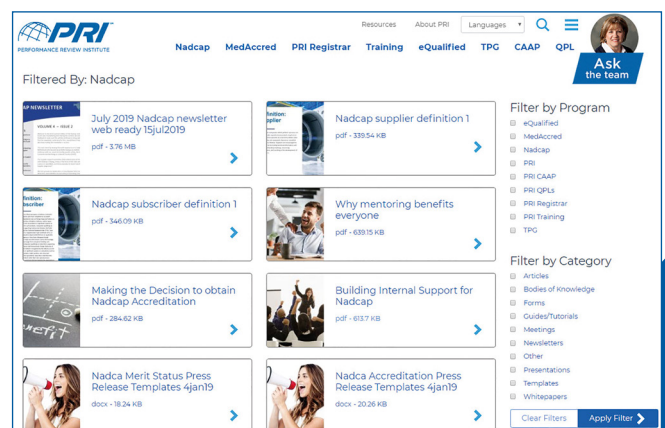
NADCAP NEWSLETTER

OPERATING PROCEDURE (OP) 1110 – AUDIT FAILURE AND RISK MITIGATION, OP 1109 – AUDITEE ADVISORIES, AND OP 1113 – APPEALS

Nadcap audits require diligence and thorough preparation – just ask an experienced Nadcap Auditee at a Nadcap Meeting.

Nadcap audits are conducted against Audit Criteria (AC) as explained in the Nadcap newsletter Volume 4 – Issue 1 (March 2019). While it is the goal of PRI to have every Nadcap audit end successfully and Nadcap staff do their best to help every single Auditee achieve this goal, not all audits are successful.

We believe it is important for the Nadcap community to be aware of what might happen if a Nadcap audit is failed, even though this applies to very few audits. This article intends to highlight the failure criteria as defined by Operating Procedure (OP) 1110 – Audit Failure and Risk Mitigation as well as subsequent requirements. It also covers OP 1109 – Auditee Advisories and OP 1113 – Appeals as these are possible post-audit actions after a failed audit. All Nadcap OPs can be found in eAuditNet under Resources / Documents / Procedures and Forms / Nadcap Operating Procedures / Operating Procedures as shown.


OP 1110 – Audit Failure and Risk Mitigation

A Nadcap audit may fail for various reasons, called "Modes" within the procedure and summarized as below:

1. Mode A: Auditee stops the audit or fails to meet the program requirements. This includes stopping an "in-process" audit, failure of a linked audit or no evidence of a valid Quality System certificate.

2. Mode B: excessive number of non-conformances (NCRs). The total NCRs or number of major NCRs exceed the limits defined in Table 1 of OP 1110. It is important to note that:
    • For Verification of Corrective Action audits (VCA), no non-sustaining NCR(s) are permitted
    • Initial (re-entry) audits are evaluated using reaccreditation audit failure criteria also defined in Table 1

3. Mode C: severity of NCRs, often involving gross system breakdown, and/or lack of management control, leading to significant concern for product impact.

4. Mode D: too many review cycles required to close the NCR(s) or during the Task Group Review. No more than four (4) cycles are permitted.

5. Mode E: non-responsiveness by Auditee, or when the Auditee has accumulated greater than 30 days of cumulative response delinquency.

All Nadcap audits meeting any of the Modes B, C, D, or E failure criteria are required to be submitted to the Task Group Subscriber Voting Members on a failure ballot. The failure ballot requires a minimum of a quorum (three (3) Subscriber Voting Members) to ensure its validity. A 2/3 majority of ballot respondents is required to fail an audit. Task Group Subscribing Voting members voting to fail an audit must also vote on withdrawal of the current accreditation.

If the Task Group has made the decision to fail an audit, several actions are taken, with the most significant
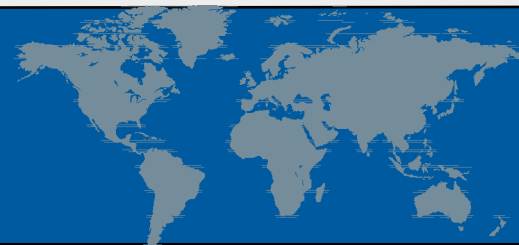
NADCAP SYMPOSIA AROUND THE WORLD

PRI organizes Nadcap technical symposia free of charge around the world as an opportunity for companies that are not normally able to send a representative to Nadcap meetings to gain technical information/knowledge that will help them better prepare for a Nadcap audit.

You can find more information on the PRI website at www.p-r-i.org/nadcap/nadcap-symposia/

highlighted below:

- The audit status is set to "Failed"

- If the Auditee holds a current Nadcap accreditation associated with the failed audit, the associated accreditation is withdrawn (unless otherwise agreed by the Task Group in the failure ballot)

- The Auditee is notified of the audit failure and the requirements for risk mitigation

- An Auditee Advisory is issued per OP 1109 – Auditee Advisories (discussed later in this article)

- When a VCA audit fails, the main audit is failed per Mode A

- A linked AC7004 (Aerospace Quality System) audit is failed per Mode A or accreditation shall be withdrawn per OP 1107 – Post Accreditation Actions, if a commodity audit fails and the Auditee does not hold another Nadcap accreditation

Specific actions are required when an AC7004 audit is failed and the Auditee does not have an acceptable alternative Quality System:

- Any commodity audit that was scheduled to happen in the future has its status set to "initiated", meaning that the audit is no longer scheduled and appears in eAuditNet without any specific dates

- Any other in-process audit is failed per Mode A

- Any existing accreditation is withdrawn per OP 1107

All failed Nadcap audits must successfully complete Risk Mitigation prior to an initial (re-entry) audit being initiated, unless 24 months have elapsed since the date of failure. The Risk Mitigation purpose is to provide the opportunity for:

- The Auditee to document corrective actions for NCR(s)

- Corrective action responses to undergo a formal review and approval process

- Subscribers to have the visibility of the Auditee's corrective action responses and ability to provide input into their acceptability

- Visibility of corrective action responses to the next Auditor to allow effective verification of implementation

Auditees who decide to go through Risk Mitigation process must:

- Agree to pay the required fees prior to starting the process - $2,100, £1,365, or €1,890 at the time of writing this article

- Provide responses to all open NCR(s) within 21 days of the date the audit enters/resumes the Risk Mitigation process, with subsequent responses due within seven days

- Have no more than four cycles to provide adequate responses to all NCR(s) and close them, and no more than 30 days of cumulative response delinquency

Completing the Risk Mitigation process requires the Auditee to have all the NCR(s) status as "closed" or "Void" and doing so cannot result in accreditation of the audit. Auditees wanting to schedule an initial (re-entry) Nadcap audit soon after a failed one must wait at least 90 days after the failure date as well as complete the Risk Mitigation process beforehand.

OP 1109 – Auditee Advisories

The Auditee Advisory notifies Subscribers when issues with conformance of products, services, or Quality Systems are identified at an Nadcap accredited facility, or when a facility loses accreditation – this ties back to the list of actions taken when the Task Group has made a decision to fail an audit as described earlier in this article.

The Auditee Advisory notification process is initiated for one or more of the following conditions:

Continued on next page

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OPERATING PROCEDURE (OP) 1110 – AUDIT FAILURE AND RISK MITIGATION, OP 1109 – AUDITEE ADVISORIES, AND OP 1113 – APPEALS

Continued from previous page

- Audit fails per OP 1110 – Audit Failure and Risk Mitigation

- Issues with conformance of products or services identified during the audit or during the audit review process

- Information provided to PRI by a Nadcap stakeholder by means of written communication

- Suspension or withdrawal of accreditation

- An accreditation expires before reaccreditation is issued

Auditee Advisories are classified as below, depending on the reasons for initiation:

- Type C: confirmed product impact

- Type E: accreditation expired

- Type F: a failed audit automatically leads to a Type F Auditee Advisory

- Type P: potential product impact

- Type S: accreditation suspended

- Type W: accreditation withdrawn

The most common Auditee Advisories – although this depends on the Nadcap commodity – are of type P. Type P Auditee Advisories, as well as Type C, can be triggered by violation of customer requirements, inadequate or suspect product acceptance testing, equipment or personnel not properly qualified/certified, process/product escape, Quality System breakdown, and more.

Auditees are encouraged to use a dedicated form to reply to an Auditee Advisory: the "t-frm-06 Auditee Advisory Response Form" which can be found in eAuditNet under Resources / Documents / Procedures and Forms / Nadcap Forms / t forms as shown. This form

can be attached directly in the forum in eAuditNet.

It is important to note that if the Auditee Advisory was triggered by fraudulent activity, the Nadcap Management Council (NMC) may direct that all Nadcap accreditations at the affected facilities shall be suspended or even withdrawn.

REMINDER: CHANGING TO EMAIL DISTRIBUTION

In the July issue, we told you that, based on customer feedback, we will be changing the way we distribute the Nadcap newsletter. Starting in 2020, we will no longer mail out hard copies of the newsletter; instead, we will release it via email. A copy will continue to be posted to the PRI website as well. To make sure that you continue to receive the Nadcap newsletter, please add PRINadcap@p-r-i.org to your "Safe Senders" list.

Auditee Advisories might lead to a suspension, or even a withdrawal, of Nadcap accreditation(s) per the NMC and applicable Task Group decisions. Auditees have the opportunity to appeal these decisions per OP 1113 – Appeals.

OP 1113 – Appeals

In order to appeal a decision made by a Task Group as part of the accreditation process, an Auditee can submit a "t-frm-03 Appeals Form" to PRI. This form can be found in eAuditNet, following the same path as the one described earlier to find the "t-frm-06 Auditee Advisory Response Form". Note that the "t-frm-03 Appeals Form" cannot be used to challenge the validity or classification of an NCR during the Auditee/Staff Engineer Review.

Task Group decision appeal to Subscriber Voting Members

Auditees deciding to appeal a Task Group/Review Team decision as part of the accreditation process shall submit the "t-frm-03 Appeals Form" within ten days after receipt of the decision and complete all fields within the form. Subscriber Voting Members on the Task Group are then responsible for reviewing the appeal and must decide on the appeal within 21 days from the date the completed "t-frm-03 Appeals Form" was received by PRI.

It is important to note that the Auditee may withdraw the appeal at any time prior to notification of the appeal decision – PRI staff has seven days to notify the Auditee of the decision after it has been made.

Subscriber Voting Members' decision appeal to the NMC Ethics and Appeals Committee

If an Auditee is not satisfied with the first appeal round, where Subscriber Voting Members of a Task Group review the decision made by the entire Task Group as part of the accreditation process, Auditees can take it to the next level and appeal the decision of the Subscriber

Voting Members of a Task Group to the NMC Ethics and Appeals Committee.

Appealing to the NMC Ethics and Appeals Committee follows the same rules/deadlines as the first round of appeal. The difference is that the NMC Ethics and Appeals Committee shall only consider whether the Task Group complied with the procedural requirements during the accreditation process and appeal – the Committee does not consider the technical merits of the decision. The Committee cannot override technical decisions, nor make any technical decisions regarding any audit non-conformance(s).

NMC Ethics and Appeals Committee appeal to the NMC

Finally, if an Auditee disagrees with the NMC Ethics and Appeals Committee decision on the appeal, the Auditee can take it one last step further by appealing this decision to the NMC directly.

Again, taking an appeal to the NMC follows the same rules and deadlines as any other appeal. The main difference is that the Auditee cannot appeal the decision on any grounds, either technical, procedural, or some other reason. The NMC decision shall be final, meaning that the Auditee cannot take the appeal any further once the NMC decision has been made.

We hope this article helped the Nadcap community better understand the process when an audit is failed by a Task Group, as well as the options Nadcap Auditees have if facing such a scenario. We encourage any Auditee to contact us at PRINadcap@p-r-i.org with questions or comments.

NADCAP NEWSLETTER

EAUDITNET – NADCAP MERIT STATUS ENHANCEMENT

Becoming a Nadcap Accredited Supplier involves significant time and resource investment and the process can be long. The Merit program provides an extended accreditation for consistent audit performance. Thus, achieving 18-month or 24-month Merit is a prized and valued asset.

Until recently, eAuditNet did not have a feature to easily recognize the distinction between 18-month Merit and 24-month Merit. Whether you were viewing a company's accreditation status in the Aerospace Qualified Manufacturers List (QML under "Resources" on eAuditNet) or viewing a company's Nadcap certificate directly, the Merit accreditation length could only be determined by the Merit information provided directly on the Audit Details page in eAuditNet.

In response to Supplier requests, Merit indicator improvements were implemented in February 2019, to better promote Auditees on Merit as well as to facilitate the distinction between Nadcap accreditation lengths.

1. While the 12-month Nadcap accreditation certificate has not changed, Auditees who have achieved Merit now receive different certificates that help make the distinction. Auditees on an 18-month Merit accreditation will receive a certificate with a silver border, and Auditees on a 24-month Merit accreditation will receive a certificate with a gold border.

2. The Merit Indicator in the Online QML has also been enhanced to help make the distinction between the Merit accreditation lengths. At the top of the 'QML Search Results' screen, a caption has been added, highlighting 18-month accreditations in silver and also highlighting 24-month accreditations in gold.
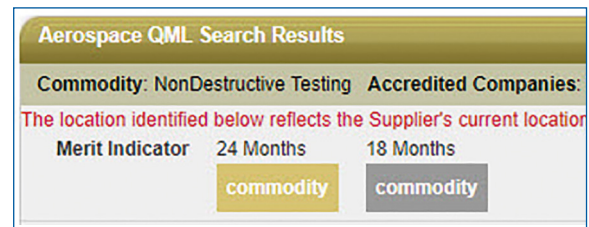

3. Commodities included in the QML search results that are not highlighted in silver or gold indicate a standard 12-month accreditation.

A quick overview/reminder of OP 1111 – Accreditation Length and Merit Program

The July 2017 Nadcap newsletter includes the article, "OP 1111 – Understanding the Merit Program", which details the requirements to become eligible for 18- and 24-month Merit. You can find this newsletter on the Nadcap homepage of the PRI website www.p-r-i.org.

Some of the crucial requirements to become eligible for 18-month Merit are:
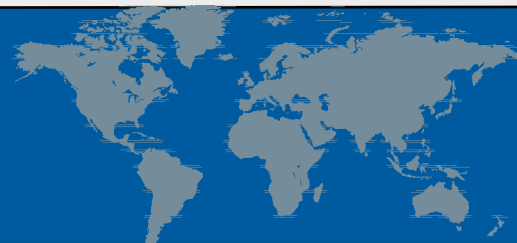
FEBRUARY 2020 NADCAP MEETING IN BEIJING

In February 2020, Nadcap will conduct a full program meeting in Beijing, China.

Over the last 10 years, the Nadcap program has been growing steadily and much of this growth is being driven by the rapid development of the aerospace industry in Asia. Asia has experienced an average of 9.8% annual growth over the last 10 years.

Wendy Jiang, the Research Fellow of COMAC and member of the Nadcap Management Council (NMC) explains "To build on this growth and to support Suppliers and Subscribers in Asia, the Nadcap Management Council has decided the February 2020 Nadcap meeting will be held in Beijing, China on February 24-27, 2020. I strongly encourage Asian Nadcap companies to attend this meeting if they can as it will be beneficial in many ways."

Registration for the February 2020 Nadcap meeting in Beijing opened on October 28, 2019. Please contact Kellie O'Connor at koconnor@p-r-i.org if you have any questions.

Country/Location	AQS	ASA	CMSP	COMP	CP	CT	ETG	FLU	HT	MI	MMM	MTL	NDT	NM
Spain									HT				NDT	
United States					CP								NDT	
Turkey													NDT	
Italy														
France												MTL		
Netherlands	AQS													NM
Italy														NM

United States	AQS				CP								NDT	
United States									HT				NDT	

- Must be at least the second reaccreditation audit in the commodity
- Cannot have a non-sustaining corrective action identified on the current or previous accreditation audit
- Cannot have a Verification of Corrective Action (VCA) audit as a result of the current or previous accreditation audit
- Cannot accumulate more than 14 days of Cumulative Delinquency

Some of the crucial requirements to become eligible for 24-month Merit are:

- Previous two consecutive accreditations in the commodity must have been a minimum of 18 months each

- No Major NCRs
- Cannot accumulate more than 7 Days of Cumulative Delinquency

PRI recognizes the importance of distinguishing Suppliers who have achieved Merit. We hope the Merit indicator improvements make it much easier to recognize a Supplier's awarded merit status.

If you have any further questions or comments regarding the Merit program or the Merit indicator enhancements, please feel free to contact the eAuditNet Support Team at eAuditNetSupport@p-r-i.org at any time.

For questions about Nadcap in general, please email PRINadcap@p-r-i.org for assistance.

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This newsletter, and past issues, are available to download on the PRI website at
https://p-r-i.org/resources/

Please contact PRI at privacy@p-r-i.org if you no longer wish to receive the Nadcap newsletter.