

Non-Destructive Testing Newsletter



October 2009

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From the Chair.....

Over the years there have been "territorial" issues among various factions in the aerospace community where individuals did not understand the role Nadcap played in the grand scheme of things; felt this "auditing group" was infringing upon the realms of other industry committees. Through time, however, the message has been getting out that "those Nadcap guys" are, indeed, the Primes and Suppliers that make up all the rest of the Industry Committees. Many representatives have spent long hours explaining that the Nadcap requirements are derived from specifications flowed down by the aerospace primes. The baseline checklists are made up of requirements agreed upon by the Primes and, in fact, flowed down by the Primes to their Suppliers. And, as most are already aware, if the Primes did not agree to a requirement that might be imposed by one or two of the individual Primes, that requirement was put into a Prime Specific Supplement, and did not become part of the baseline checklist.

All that being said, it appears that the subject of "those Nadcap guys" is rearing its head once again. During a recent ASTM meeting, the Penetrant group decided it was time to make ASTM E 1417 an Aerospace Standard. And, since the Nadcap Task Group is comprised of 39 global Aerospace Primes, with the checklist representing the requirements flowed down by those Primes to nearly 1000 Suppliers around the world, this set of requirements would be a good place to start. Well, for as much sense as that seemed to make to the Aerospace Primes represented at this meeting, it appears to have raised the controversy over "who do those Nadcap guys think they are" back from the dead. So, since the draft has been released for ballot and is awaiting input from the ASTM community, I thought this would be a good time to remind everyone of a few key facts.

No one is making ASTM E 1417 a "Nadcap document". It is an ASTM document – an Industry Standard – which the Aerospace community is seeking to revise to more closely represent the needs of their business. ASTM E 165 has been re-issued as a Standard Practice that now represents the needs of the non-Aerospace industries and the Aerospace representatives felt this was a good time to create a document closely defining their needs. If the industry feels E 165 is not quite what they need for the non-Aerospace world, then let's make that standard better, too.

The only reason Nadcap was brought into the ASTM E 1417 discussion was due to the fact that the AC7114/1 baseline checklist represented requirements

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Nadcap Meeting Schedule

2009	Location
October 19-23	Pittsburgh, Pennsylvania, USA
2010	Location
February 22-26	Rome, Italy



NDT Newsletter - Want to be on the Circulation?

The NDT newsletter is published periodically throughout the year. The newsletters are read by the subscribing Nadcap Users, Suppliers, Auditors and anybody that happens to click on the latest NDT newsletter on the PRI website (www.pri-network.org). The aim of the newsletter is to communicate information relating to NDT within the Nadcap program to improve our process and to promote the sharing of best practices at all levels.

Have you stumbled across the NDT Newsletter by chance? Want to receive it on a regular basis? Keep up-to-date of the latest Nadcap NDT information by getting added to the distribution list! To receive notification when a new edition has been published, please e-mail Kellie O'Connor at **koconnor@sae.org** with your name, company and email address.

From the Chair.....

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flowed down to Aerospace Suppliers by Aerospace Primes. If common ground represented by the majority of Aerospace Primes were sought, it would look a whole lot like the Nadcap requirements. So, why not start there?

Those who have worked in the Aerospace arena are familiar with such requirements, understand they are derived from prime engine and airframe manufacturers, and know that placing these requirements into the ASTM standard is not going to change the world. If anything, it will make life easier because it is a giant step closer to a single standard. So, please talk with your ASTM reps who will vote on this draft. If they have technical issues with some of the requirements, then by all means, raise them and get them resolved. That is why the ballot process exists. But please, don't judge the document because someone said it "looks like a Nadcap document". If the intent is to make an aerospace document reflecting the needs of its user community, the fact that it looks like the requirements which apply today should make the industry feel better. Those involved with Radiography know the same initiative was undertaken a number of years ago when ASTM E 2104 was written specifically for the aerospace world. This is not a new concept; it is the next step in the elimination of conflicting requirements in the NDT realm. Let's work to make it as good as we can, not use personal biases defeat progress.

Phil Keown - NDT Task Group Chair

Phased Array UT Ad-Hoc Committee and the Phased Array Checklist

The team member roster consisted of the following:

Ron Levi - Lockheed Martin (Lead)

Leo Going - United Space Alliance

Dave Vaughn - Spirit Aerosystems

Doug Ladd - Boeing

Thierry Jacques - Eurocopter

Mark Aubele - PRI

Pete Torelli - Boeing

Yves Esquerre - Airbus

Phil Keown - GE

Greg Rust - Vought

Carl Gifford - Boeing

Lou Puckett - Boeing

Doug Loosvelt - Spirit Aerosystems

Chris Gallardo - Spirit Aerosystems

The team also made use of many Industry Experts to include the following:

Bob Devries - Boeing

Dale Oyster - Boeing

Jeff Leak - NASA MSFC

Jim Engle - Boeing

Larry Mullins - Davis NDE

Mark Pompe – (West Penn Testing)

Mark Davis - Davis NDE

Mike Horkey - Boeing

Michael Moles - Olympus NDE

Michael Sessoms - ULA

Mike Suits - NASA MSFC

Randy Scheib - Olympus NDE

The team went through some growing pains as the first two Team Leads were forced by reasons out of their control to relinquish their position, although both still participated on the team. Thankfully, Ron Levi stepped up and did a great job getting everything back under way and moving forward.

The goal of the team was not to create a separate all-new checklist for Phased Array but rather to modify the existing UT checklist (AC7114/3) to accommodate those particular issues the team believed needed to be addressed. Some of these issues included procedural issues, equipment requirements, software capabilities and transducer issues.

The team finalized a Draft version of AC7114/3, Revision "F", and provided it to the entire NDT Task Group roster the first week of September 2009 for review and consideration before the Nadcap meeting in October. This was not an official ballot, just an opportunity to review the additions of the new Phased Array questions.

At this time, it is planned to review the draft checklist at the October meeting and then to do an official ballot following that review. For this reason, it is vital that everyone who has comments and/or suggestions prepare them and bring them to the meeting. If you cannot attend, please make sure one of the NDT staff engineers are provided your comments to take to the meeting. With a little luck it is hoped that an approved version of the checklist will be in place by first quarter 2010.

Ron Levi and the team wish to thank everyone who had a hand in generating the draft AC7114/3 with the added Phased Array items. The list above does not get close to identifying every individual that had some input.

Mark Aubele - Senior Staff Engineer

Checklist and Supplement Revisions Update

As many are aware, quite a lot of work by everyone involved has been put into the most recent revisions of the checklists and supplements. At the time of this printing, AC7114, AC7114/1, AC7114/2 and AC7114/4 have been approved and are at Revision D as well as AC7114/3 at revision E. The final ballots were completed early in September with final administrative alignments/formatting, etc., completed late in the same month. The new revisions have been placed into eAuditNet with a 90 day hold for new audits. These new revisions must be utilized for all audits beginning in January

2010. Note: Please review the actual checklists in eAuditNet for the exact dates that the new revisions are required. Also please be aware that it is permissible and even encouraged to use these new revisions as soon as they are posted even before the official date of release. If you are going to do this please notify scheduling and they will ensure that the correct set of checklists are available for the auditor to use in your audit.

In addition to the checklists, the User Member Supplements have also been revised and you will notice that in most cases, they contain far fewer questions than previous supplements due to the Primes' commitment to the baseline and a very long meeting prior to the Nadcap Meeting in February 2009. All supplements, AC7114S, /1S, /2S, /3S and /4S are now at Revision E. Thanks again to everyone who worked on these revisions, balloted, sent their comments or even just sat and listened to the "sometimes" endless discussion and debate over some of the issues.

Mark Aubele – Senior Staff Engineer

Filmless Radiography Update

The Ad-Hoc group members:

Chris Stevenson – Rolls-Royce plc Co-Chair

Mike Horky - Boeing Co-Chair

Andrea Steen - Rolls-Royce corp.

Andy Kinney - Honeywell

Ante Tomasovic - Techspace Aero

Audie Dickson - Goodrich

Bob Hogan - Honeywell

David Royce - Pratt & Whitney

Doug Ladd - Boeing

Ed Stenger – ULA Launch

Gary O'Neill - Parker

Harry Hahn – GE

James Fowler - Pratt & Whitney

John Eddington - Lockheed martin

Michael Wagner - Rolls-Royce corp.

Mike Mitchell - Hamilton Sundstrand

Peter Torelli - Boeing

Scott Iby - Hamilton Sundstrand

Steve Gant - Parker

Phil Ford - PRI Staff Engineer

A draft of the AC7114/4 checklist has been revised to address Computed

Radiography (CR), Digital Radiography (DR) and Real Time Radiography (RR). Please note that Real Time Radiography and the definition in this case were defined by the Ad-hoc group, not the ASTM or European standards committees.

Computed Radiography: The process of using an X-ray imaging plate (IP) using scanner system with digital output and displaying output levels as shades of gray in an image to produce digital radiographs, which can be displayed, stored, printed or electronically transmitted.

Digital Radiography: The process of using an X-ray detector with digital output and displaying output levels as shades of gray in an image to produce digital radiographs, which can be displayed, stored, printed or electronically transmitted.

Real Time Radiography: The process of using an image intensifier or phosphor screen with an analogue output and displaying output levels as shades of gray on a monitor. The image can be converted from analogue to digital, which can then be enhanced, displayed, stored, printed or electronically transmitted.

Each technique has its own section in the draft checklist. Section 4 Procedures, section 5 Process Control and section 6 Compliance each have a section covering standard film radiography, CR, DR or RR. Thus far, the checklist has been written to cover all the requirements of the ASTM's and European standards, however on 1 July 2009 the Ad-Hoc group began a review of each of the checklist/ASTM/ European standard questions to decide whether the question should be included or removed. The group is using the following criteria: if all the primes require the question, it will stay in the baseline checklist. If it is a question that some primes require and others do not, then the question will be removed from the baseline checklist and added into the supplemental checklist for those specific primes who require it. If it is a question that relates to the equipment manufacturer, then it will be removed from the checklist entirely.

Once the draft checklist is acceptable to the Ad-Hoc group, it will be passed to the NDT Task Group User Member Committee for the RT method for review and agreement prior to the checklist being passed to the Task Group and suppliers for final review and approval.

It is hoped that the checklist will be ready for the NDT Task Group User Member Committee during the Pittsburgh Nadcap meeting starting 19 October 2009.

Phil Ford – Senior Staff Engineer

Voiding NCRs, A Supplier's Perspective

Occasionally in the course of a Nadcap audit, a finding can be issued for which a supplier believes the auditor is either misinterpreting the specification or checklist, or is basing the finding on their personal opinion and/or experience. It may also happen that a particular checklist question does not adequately address a specific situation that is unique to a particular supplier's business, however the auditor feels they have no choice but to interpret the question as written and issue a Nonconformance Report (NCR). If this happens, it is important to challenge the NCR.

The occurrence of either of these situations is infrequent, but in those instances, challenging them serves multiple purposes. First, not all auditors possess identical industry experience and, if one is misinterpreting a question or specification due to a lack of knowledge, the successful challenge to the NCR is an opportunity for the Task Group and Staff Engineers to provide needed guidance and focused training to that specific auditor.

Another example would be if a problem was discovered with a checklist question. This situation presents a need for the Task Group to address the issue in committee and either refine the question, or provide guidance in their interpretation.

By failing to challenge an NCR that is truly unsupported, the NCR may stay on the company's record and may even inhibit that company's ability to earn merit, which is critical in extending reaccreditation audit frequency.

Finally, any NCRs allowed to stand create the possibility for a non-sustaining finding, which can then become a major finding. If a supplier's system has changed to correct invalid findings, there is a possibility of sowing the seeds for future pain and grief.

It is typical to find suppliers who are new to the Nadcap accreditation process unaware that they have the ability to challenge and possibly have NCRs voided. Some suppliers tend to assume that auditor's opinions are those of the Task Group or that the auditors are more knowledgeable about a given process, or fear retaliation from auditors in the future. None of these assumptions are accurate. Auditors are sometimes overruled by the Staff Engineer or the Task Group in these situations. Who knows more about the processes in your facility than you do?

Mitchell Labs has more experience in Nadcap accreditation audits than nearly any independent lab in the industry being one of the very first to receive accreditation, and has *never* experienced retaliation from *any* auditor. To get to the point, suppliers have nothing to lose from challenging NCRs that you feel are unsupported or unwarranted.

If the Staff Engineer and/or the Task Group upholds the NCR, you will have a better understanding of why it was written and how to modify the system to be compliant. If they decide to void the NCR, that is one less finding; have potentially saved unnecessary root cause and corrective action analysis; and possibly made the difference in achieving merit.

From an industry perspective, if a weakness in a checklist question or in the auditor's interpretation is discovered, it is imperative to challenge it. Without a doubt, a successful challenge of the NCR helps the entire community of NDT special process suppliers.

Challenging NCRs is also a right that should be exercised judiciously. Before doing so, be brutally honest: Is it certain the auditor's interpretation is not valid? Has proper due-diligence been exercised to ensure the challenge is based on the correct revision of all pertinent documents and/or facts? Was a pre-audit conducted which might have found the issue at hand? Is there objective evidence to support your position if requested by the Staff Engineer or Task Group? Is this opinion being affected by emotions or personal differences with the auditor? Doing the homework as well as proper preparation goes a long way to successful NCR challenges.

To challenge an NCR, the following process is recommended:

- Before the auditor leaves the facility, solicit their opinion regarding why the checklist was interpreted the way it was. Understand a supplier will have little or no interaction with the auditor once they leave the facility. What happens next in the accreditation process will be between the Supplier and the Staff Engineer and if necessary, the Task Group. Remember to maintain a professional demeanor during all interactions with the Auditor, Staff Engineer and Task Group.
- 2. Do not respond to the NCR on eAuditNet, but do react quickly to the problem. Any attempt to argue your position online in the supplier response area of the audit could be seen as a de-facto acceptance of the NCR. Bear in mind that a supplier only has three cycles to close out an NCR in eAuditNet. Do not waste one of the three cycles presenting an argument for voiding the NCR. Remember, after three cycles attempting closure, the company is at risk for audit failure.
- 3. If the NCR is regarding interpretation of requirements from only one specific task group member, (a Supplement issue) call that representative and discuss the finding with them first. If the specific Task Group representative agrees with your position, inform them you intend to call the Staff Engineer requesting the NCR be voided. Ask for support in the process of voiding the NCR. If the finding is more global in nature (a baseline issue), go directly to the Staff Engineer.
- 4. Call the Staff Engineer assigned to the audit. Make sure all pertinent documents and objective evidence are available before making this call. Present your position in a calm and professional manner and make every attempt to hear-out the Staff Engineer's position.
- 5. If the Staff Engineer continues to support the Auditor's position, and is still convinced the NCR is not valid, the supplier has the right to request Task Group resolution. This should be done via a request to the Staff Engineer.

Lastly, often suppliers who complain about the process of Nadcap accreditation do not participate in the face-to-face Task Group meetings. It cannot be stressed enough how important it is for a supplier's Level 3 or Quality Assurance Management employee to get involved and represent the company at the Nadcap Meetings. The best and most reliable asset to better understanding of Nadcap requirements is regular attendance and participation at the Nadcap Meetings.

David Mitchell, Ed Green, David Gray - Mitchell Laboratories

Silence and Fear can be the Enemy

When asked to write an article, it was with many mixed feelings about how to address this important issue. Suppliers are audited constantly and on most occasions, findings are initiated by the auditor, with the suppliers being required to correct the findings. They do, but in some instances, the Supplier believes the finding is in error. In other words, the Supplier feels the issue should NOT have been a finding. The Staff Engineer, without adequate cause to do otherwise, even if agreeing in principle, may just "Close" the finding. Is this the answer? Absolutely not! If the finding is not valid there should be no finding listed, as "Closed" does not mean "No Finding." There could be repercussions in a following audit. Such

situations have been caused by suppliers not wishing to voice their concerns over an NCR.

Having spoken to many suppliers about this topic. Most everyone agreed that they had reservations about speaking candidly with the Staff Engineer for fear of alienation. Suppliers must be able to stand up for themselves. It is not to say the Supplier will always be right, just that discussions between the two parties should continue until the matter has been resolved. Open dialogue should be the norm, not the exception.

The question stands, how can suppliers feel free to discuss matters pertaining to findings? As a beginning, Task Groups,

Staff Engineers and PRI have repeatedly emphasized that there will be no retaliation to a supplier who believes a finding is in error and voices that concern. Perhaps a graph, or other means of communication could be used to demonstrate when Suppliers opposed a Finding; when they were right and when they were wrong. Let's work together to find a solution.

Robert W. Custer - AAA Plating & Inspection, Inc.

Supplier Voting Member - NDT Task Group

Silence and Fear - Staff Response

The article, "Silence and Fear can be the Enemy" as written by Robert Custer (Supplier Voting Member), is a well meaning and sincere attempt to point out a possible issue concerning Staff Engineer retaliation against suppliers for taking exception with an NCR. First it is important to point out that one need go no further than Mr. Custer's own statement to show the distinct lack of that mindset with staff; "As a beginning, Task Groups, Staff Engineers and PRI have repeatedly emphasized that there will be no retaliation to a supplier who believes that a finding is in error and voices that concern".

Second, from PRI Staff's perspective there is no lack of suppliers contesting an NCR they believe to be invalid or unfair in any way. Every single occurrence of such an issue is taken very seriously by Staff and if warranted, the NCR may be reworded, reduced in severity or even voided. A word of caution here is essential though; just because a Supplier contests the validity of an NCR, does not necessarily mean the Supplier is correct and the NCR will be changed in any way.

Third, the Staff Engineers and the NDT Task Group are only interested in "valid" issues being raised, as it does not further the process of quality to initiate or support issues that are unfounded and invalid. That being said, invalid NCR's waste time and resource of everyone involved. The Task Group conducts Auditor Training every year with one of the primary focuses being on the review of checklist requirements and writing of valid and effective NCRs. NDT Staff also participate in regular meetings designed to support consistency in reviewing NCR issues.

In summation, we can give you our word that every issue brought to us by a Supplier is handled in a professional manner without ever considering "taking it out" on a Supplier for voicing a concern about that issue, be it with an NCR or any other concern with their Nadcap audit.

Mark D Aubele

Lead Senior Staff Engineer - NDT

Jim Bennett

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Supplier Voting - Requirements and Expectations

Supplier Voting Members (SVM) have an important role to fulfill as being part of the NDT Task Group. They represent the Supplier voice as a group. Being a SVM is a privilege bestowed upon us by our colleagues in the NDT Task Group. An SVM represents the Supplier base at every opportunity. This includes casting a vote on letter ballots.

To become a Supplier Voting Member or Supplier Alternate Voting Member, the following criteria needs to be met (NTGOP-001):

- 1. You must attend two Nadcap Task Group Meetings.
- 2. Provide written request to the Task Group Chair or Staff Engineer requesting voting privileges.

You will be allowed to vote once approved by the Task Group Voting Members.

To maintain SVM privileges, the following criterion needs to be maintained:

 The voting member shall not be absent without approved alternate representation from three consecutive regular Task Group meetings. The voting member or approved alternate shall not miss a vote on two consecutive letter ballots. A waive on a ballot is considered a vote.

Failure to not fulfill the above may result in removal as a Supplier Voting Member.

All Supplier Voting Members are encouraged to attend meetings and exercise their voting rights when letter ballots are issued. During the Istanbul NDT Task Group meeting, the Supplier Report noted that the 2008 NDT voting average was 44% while all Task Groups averaged 50% for 2008. Although voting is up for 2009 (71%) from all Task Groups, we must strive to keep improving this. SVM's who do not fulfill the meeting and voting requirements may be at risk of losing their supplier voting status.

Gary White – Orbit Industries, Inc.

Supplier Voting Member – NDT Task Group

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