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Non-Destructive Testing Newsletter

From the Chair

Communication, a most integral ingredient in most aspects of our lives. The October Nadcap meeting stressed communication in all aspects of the program.

First, the auditor training session stressed the need for communication among all the components of an audit program: the Auditor; the Supplier; the Staff Engineer and the Primes. The Prime representatives, the Task Group, must make clear their expectations of the audit and the auditor. Ambiguous or vague requirements lead to inconsistent results, delays in the accreditation process, and more work for everyone.

The auditor must convey his/her expectations of the supplier clearly and concisely. The supplier must relay their responses accurately and honestly. The audit package, including the supplier responses, must paint a picture for the Staff Engineer and the Task Group. A breakdown in communication at any step in the process causes delays, or maybe withholding of the suppliers accreditation.

Second, a Supplier Symposium was presented, focusing on the various aspects of the audit process to help new Suppliers understand the Nadcap audit process, the involvement of the different groups, and outline the expectations placed upon suppliers. Although some of the Suppliers who have been involved with the Nadcap process found parts of the presentations redundant, the new, or relatively new, participants were introduced to details of the Nadcap audit that they found most enlightening. The feedback was very positive and a number of suggestions were offered that will make the next symposium even better.

Finally, it was stressed during the Task Group meetings, the Planning and Operations meeting, and the Nadcap Council meeting that communication within the participating primes, especially among prime representatives to the various Industry Committees, is imperative. All of these committees, Nadcap, ASTM, SAE, etc., should be working in tandem to develop programs that minimize any adverse impact on the industry, the supplier base and the primes.

The bottom line is that I encourage everyone who has a stake in this process to exercise their communication skills. If you, as a supplier, have had a good Nadcap experience, let us know. If you have had a problem, let us know. If you have comments or suggestions that would help us move the program forward, please let us know.

I look forward to seeing lots of new faces at our upcoming meetings in 2006, but I also look forward to hearing from those of you who do not have the opportunity to attend the meetings. Your input is just as valuable as those who are sitting with us

Phil Keown – Chairman NDT Task Group

Nadcap Meeting Schedule

Month	2006	2007
January	Crowne Plaza Redondo Beach Los Angeles, CA, USA 23-27	TBD Phoenix, AZ, USA 22-26
April	Hotel Nikko New Century* Beijing, China 24-28	TBD Europe 16-20
July	TBD Madrid, Spain 17-21	TBD Asia 16-20
October	Marriott Downtown Pittsburgh, PA, USA 13-20	Marriott Downtown Pittsburgh, PA, USA 19-26

* The hotel will begin taking reservations (via a downloadable form on the PRI website) beginning Feb. 1st (after the Jan. Nadcap meeting).

Visit the PRI Website: www.pri-network.org

NDT Newsletter – News to you?

Are you a new reader of the NDT newsletter? If so, here is some information:

The NDT newsletter is published four times a year, prior to the quarterly task group meetings. The newsletters are read by the subscribing primes, 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. If you have any articles that you feel would benefit the program, feel free to forward these to one of the NDT staff engineers (contact details at the end of the newsletter) for future inclusions.

Jim Bennett – NDT Staff Engineer

Nadcap Non-Film Radiographic Audit Program

The ad hoc group is still working the issue of Non-Film Radiographic Testing (NFRT). Based on a teleconference meeting held towards the end of 2005, it was decided to obtain further input by pursuing a number of avenues, this newsletter article being one. If you either use or approve such installations, please take a moment to email such information to the undersigned. The group is asking only five questions, but this information will help us structure an audit program for NFRT. The questions are:

- 1) What modalities or equipment types are used for image detection and how many installations are in use?
 - a. Image Intensifiers
 - b. Phosphor Plates
 - c. Digital Arrays
 - d. Other
- 2) What radiation sources are used?
 - a. Isotopes
 - b. X-ray
 - i. KV
 1. 0-50
 2. 0-160
 3. 0-320
 4. 0-420
 - ii. MEV
 1. 1
 2. 2
 3. 4
 4. Other
- 3) What display and image enhancement modes are in use?
- 4) What archive modes are in use?
- 5) What personnel certification program is used for inspectors?

As stated earlier, this information will help shape a program useful to all who use or approve NFRT installations, so any feed back is welcomed.

By the time this newsletter is published, the ad hoc group will have drafted a very basic white paper on the subject in order to have something to start with for the January Task Group meeting. It is intend to supplement that white paper with your input.

Thanks,

Ron Rodgers, RT Method Chair
ron.rodgers@sae.ae.ge.com



Supplier Voting Member Representatives of the NDT Task Group

Attached below is the list of NDT Supplier Voting Member Representatives that represent 'You' the supplier, when voting on official Nadcap Process Issues during the NDT Task Group Meetings. If you are concerned that your voice is not being heard in the Nadcap NDT Process nor have the opportunity to attend the Task Group meetings, now is your opportunity to contact the SVM's to feed your comments and / or concerns that you may have.

Suppliers	Representative	Status	E-mail contact
E. M. Inspection Leicester, United Kingdom	Andy Bakewell	Supplier Voting Member	andy.bakewell@emcol.co.uk
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AAA Plating & Inspection Inc. Compton, CA	Robert Custer	Supplier Voting Member	bob@aaaplating.com
NDT Inspection & Testing Ltd Worcester, United Kingdom	Paul Evans	Supplier Voting Member	paul.evans@ndt-inspection.co.uk
New Hampshire Ball Bearings, Inc. Peterborough, NH	Richard King	Supplier Voting Member	rking@nhbb.com
Mitchell Labs Pico Rivera, CA	David Mitchell	Supplier Voting Member	david.mitchell@mitchell-labs.com
West Penn Non-Destructive Testing Inc. New Kensington, PA	Mark Pompe	Alternate Supplier Voting Member	mpompe@westpenntesting.com
Team Cooperheat MQS Cincinnati, OH	Cindy Roth	Supplier Voting Member	croth@teamindustrialservices.com
Howmet Research Ctr Whitehall, MI	Ryan Soule	Supplier Voting Member	rsoule@howmet.com
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Alcoa Fastening Systems Portet sur Garonne France	David Yates	Supplier Voting Member	David.yates@alcoa.com

Baseline Update

Everyone has been hearing about these baseline standards for the past two years and many are starting to believe they are a myth. Well, although I cannot tell you that we have finished the effort and have something for you to see, I am happy to announce that we are moving forward. To date, the NDT Task Group has worked to achieve 100% agreement before adding a requirement to the baseline. And, although this worked well in the beginning, the process rapidly deteriorated until the baseline result was one that less than 20% of the participating primes could use. This would necessitate additional appendices for the rest of the primes, would require additional prime audits to fill in some of the gaps, and would, most certainly, add cost and time to the audit. These were two of the major tenets set forth by the Nadcap Management Council when this initiative was introduced; No significant impact on cost and No significant impact on the time of the audit.

As we move forward in developing the NDT baseline requirements, the NDT Task Group will follow its operating procedure and require a 2/3 majority vote on issues that cannot be resolved to the satisfaction of the entire group. Also, it must be stressed, in accordance with the operating procedure, supplier representation will be involved in all baseline discussions. So suppliers who cannot attend the Nadcap meetings to participate in person are encouraged to contact a staff engineer, a task group member or a supplier-voting member to relay your input.

Hopefully, baseline documents for NDT will be finalized at the January meeting in Redondo Beach and a ballot sent out shortly thereafter. If so, we should actually be able to eradicate the myth of the "NDT Baseline Requirements".

Phil Keown – Chairman NDT Task Group

The NDT Top Five Findings - AC7114/2/3/4

This is our final newsletter in which NDT staff will reveal the Top 5 findings (previously 10) of the accumulated NDT accreditation audits for 2004, aimed at helping suppliers in preparation for their initial or re-accreditation audit. These findings have been taken from eAuditNet and cover initial and re-accreditation audits from across the globe.

This newsletter will deal with the checklist AC7114/2/3/4 and the findings, (previous checklists are addressed in April & October 2005 newsletters).

Checklist AC7114/2

5, paragraph 7.3 (b) - If another device is used to verify the system effectiveness on a daily basis, describe method and specify results.

b. Are records of this test on file and do they provide acceptable results?

4, paragraph 4.1 - Is there a statement in the procedure or quality manual requiring that as a minimum MIL-STD-1949 and/or ASTM E 1444 is being met?

3, paragraph 8.1 (A) - Provide the following documentation for one of the parts being tested during the compliance portion of the audit:

A. Compliance:

2, paragraph 4.3 (s) - Does the written procedure, general, or specific, contain the following information as a minimum:

s. All required process controls called out in Section 5 of this checklist.

At the top spot (# 1) we have paragraph 7.2 - Is the magnetic particle system Effectiveness checked by testing the Ketos ring (or equivalent) showing the required holes per maximum allowable amperage setting for the particular type of particles being used?

Checklist AC7114/3

5, paragraph 4.6.1 - If verification is performed in-house, do procedures exist defining verification requirements, and are they available for review?

4, paragraph 4.7.1 - If verification is performed in-house, do procedures exist defining verification requirements, and are they available for review? (4.7 Is the manipulating equipment verified to show measurable angular control of the search units within 1_ in two mutually perpendicular directions?)

3, paragraph 7.1 - Is there a statement in the procedure or quality manual stating that, as a minimum, MIL-STD-2154 is being met?

2, paragraph 4.5.2 - If verification is performed in-house, do procedures exist defining verification requirements, and are they available for review?

At the top spot (# 1) we have paragraph 5.3 - Is a procedure available that describes how transducers are evaluated, listing the acceptance/rejection criteria for the various types of transducers in use?

Checklist AC7114/4

5, paragraph 3.3 - Are procedures and/or technique cards prepared for each part number that contain all the information required to X-ray the part or assembly?

4, paragraph 8.1 - Provide the following documentation for one of the parts being tested during the compliance portion of the audit:

3, paragraph 4.3.1 (refer to title of question below) - Describe method and frequency:

2, paragraph 4.3 - Is exposed film of step wedge or equivalent processed at least weekly?

At the top spot (# 1) we have paragraph 7.7.1 (a) - Is the film viewer checked with a calibrated light meter?

a. Specify method and frequency:

The NDT Top Five Findings – AC7114/2/3/4
continued from page 4.

Summary

The main areas of concern are similar in nature to all methods. The procedural control of equipment, techniques, control checks, and the procedure not addressing all the requirements of the customer's specifications are the common subjects. The list below give typical reasons for the NCR's being raised.

- Procedure specifies compliance to industry and / or customer requirements. Fundamental aspects associated with the required standard are overlooked when creating or modifying the company NDT procedures.
- Documentation control of travellers, route cards, techniques, etc, reference inconsistent specification references and revision status, affecting overall traceability.
- System performance checks do not meet customer or pre-defined requirements. Typically, incorrect test pieces used, incorrect recording of values and not following customer unique requirements.
- The technique does not define all the required parameters and / or approvals, e.g. a sketch or photograph, areas of inspection, location of quality indicators / penetrameters, level 3 or customer approvals, etc.
- Film viewer intensity check not performed per customer / industry standard.

Conclusion

Spend sufficient time to adequately review your customer procedures on a regular basis as part of an ongoing review process against your own procedures. Do not wait for the problem to 'raise its head', items of clarification, call the custodian of the specification to get an interpretation. Review paperwork packages similarly to the paper compliance audit packages that are reviewed by the Nadcap Auditor. Verify the traceability, specifications, revisions, approvals, etc, still apply to current customer requirements. Just because it has never been an issue before does not mean it may not be an issue in the future. Requirements change, keep in touch with interpretations, expectations. Use published documents, newsletters and other means of communication to do this. It is appreciated that business does not always allow you the luxury of time to trawl through the various websites, reading publications / documents / specifications, contacting numerous people, etc, however consider the time and effort spent on addressing NCR's and not mention the potential affect on Supplier Merit.....

Phil Ford – NDT Staff Engineer

NDT Supplier Symposium, Bust or a Must....

Based upon feedback from supplier participants the October NDT Supplier Symposium, held in Pittsburgh, PA, was a success. The purpose of the symposium was to provide suppliers who have not had much experience with the Nadcap process (initial and first re-accreditation audits) an opportunity to get information first-hand. Many positive comments were received regarding review of the top ten non-conformances for each method, the overview of program requirements, the expectations when submitting corrective action responses and suggestions for preparing for the Nadcap audit.

The NDT Group were given opportunities for improvement for which we have taken on board and plan to implement for the upcoming 2006 symposiums being held globally in conjunction with the NDT Task Group Meetings. One of the major changes in the symposium is that it will be specific to the sector (America's, Europe & Asia) we are addressing. For example, the symposium held in the America's sector will focus on issues more germane to the more mature Nadcap supplier, while the symposium held in Asia will focus on issues more germane to the new supplier intending or in progress of achieving Nadcap Accreditation for NDT.

You should by now have received notification via e-mail of our next supplier symposium scheduled to coincide with the January 2006 Nadcap meeting in Redondo Beach, CA. Visit the PRI website at the following address <http://www.pri-network.com/Nadcap/Nadcap-NDT-Supplier-Symposium.id.491.htm> for details of the upcoming symposium or contact any PRI NDT Staff member for more information.

P Michael Gutridge – NDT / Weld Senior Staff Engineer

Auditor Training – October 2005

Beautiful weather, complete with sunny skies welcomed some thirty six NDT Auditors to Pittsburgh, Pennsylvania, USA for the 2005 NDT auditor training session held in October.

A great turn out of prime representatives were on hand to conduct the many training sessions offered at this years event. Among them were reviews of each of the new baseline checklists and standards; specific prime issues of concern; audit issues and criteria surrounding the completion of NDT compliance jobs at the audit. In addition to these issues directly involving NDT, the Chemical Processing Task Group provided a representative who presented a two hour session in pre-penetrant etching.

PRI staff also had some one-on-one time with each auditor to discuss individual performance and to outline opportunities for progress and improvement. Yes, the auditors also had an opportunity to voice concerns and indicate areas where staff can strive for improvements, especially in regards to consistency.

All told, I believe that this years training was an excellent exercise that everyone gained something from. Starting with the prime representatives, to the auditors and back to staff, there was something for everyone.

Mark D Aubele – NDT Senior Staff Engineer

Auditor Perspective – Preparing for your Audit

Many suppliers ask me before or during the audit “What are the Nadcap requirements?” or “How am I supposed to comply with the Nadcap requirements for.....?”

The answer to these questions is that there are, in fact currently, no Nadcap requirements. The Nadcap audit is against industry and customer requirements. The auditor is using the Nadcap checklist to answer all questions with respect to the actual customer requirements applying to the particular supplier.

There are many things which a supplier can do to smooth the progress of their audit and reduce potential non-conformances. Most of them have to do with good preparation. Here are some general suggestions.

1. Do go through ALL the checklists before the audit (i.e. quality systems as well as NDT). Don't just check you have a procedure – go and have a look to see if the actual practice is the same as the procedure.
2. Make sure that the right people will be available and able to concentrate on the audit when asked. The auditor will need to see the people who do the jobs, not just check that you have a procedure.
3. Make sure that the calibration records, personnel records and other documents are properly filed, easily accessible and complete. Check that there are no silly mistakes such as incorrect dates, issue numbers, or equipment descriptions.
4. Make sure that your production department is aware and prepared for the fact that the audit is bound to slow processing to some extent. This is because the auditor will need to watch specific jobs being processed and also to witness a range of control checks. They will also need to ask the operators various questions.
5. Make sure that there is production work available for the compliance tests for each NDT method.
 - If you work for one Nadcap Prime the auditor will need to witness three jobs for this one prime, per NDT method.
 - If you work for e.g. three Nadcap Primes the auditor will need to witness one job for each prime, per NDT method, i.e. three in total.
 - If you work for six or more Nadcap Primes the auditor will need to witness one compliance job for each of three of these primes and collect the paperwork associated with previous tests for three of the other Nadcap Primes. Note: exceptions to the above must be discussed and agreed with the Staff Engineer.
6. Make sure that NDT operators are available to carry out processing. If you have an operator who works in NDT sometimes and somewhere else the rest of the time they still need to be available for the audit if requested by the auditor.

At its best, a Nadcap NDT audit (although it may be uncomfortable at the time) gives you a real boost in terms of your continuous improvement process. In order to make the best use of the opportunity you need to allow the auditor to have a good look at the processes within your company. Not being organised hinders this process and wastes your money!

Good Luck!

Karen Reader – Nadcap NDT Lead Auditor & Trainer

Prime Representatives of the NDT Task Group

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NDT Newsletter Archives

Want to review previous NDT Newsletters? Use the following address to direct you to the NDT Commodity web page:

<http://www.pri-network.org/Nadcap/supplier/commodities/NDTesting.htm>

Jim Bennett – NDT Staff Engineer

2006 Calendar

Have you seen the 2006 Nadcap calendar yet? Looks somewhat different to last year. From the Nadcap Management Council to the individual Task Groups, from the Supplier Support committee to the auditors, the calendar contains some of the many faces of Nadcap and the Organizations that embrace the Nadcap Process.

In dedication to the illustrious NDT Task Group is a photograph taken during the October 2005 training session in Pittsburgh for this calendar (February 2006). These are some of the people you will meet if you get the opportunity to attend one of the NDT Task Group Meetings.

Front Row from left - **Phil Ford** (PRI), **Jim Bennett** (PRI), **Phil Keown** (NDT Task Group Chairperson - GE Transportation Aircraft Engines), **Andy Statham** (NDT Task Group Vice Chairperson - Rolls-Royce plc), **Mark D Aubele** (PRI), **P Michael Guttridge** (PRI).

Middle Row from left – **Stephen Bauer** (Northrop Grumman Corp), **Peter Torelli** (The Boeing Company), **Chuck Alvarez** (Goodrich), **Yves Esquerre** (Airbus), **Tyler Ribera** (Bell Helicopter).

Back Row from left – **Dave N Royce** (Pratt & Whitney), **Thierry Jacques** (Eurocopter), **Bobby Scott** (Bombardier, Inc), **Andrea M Steen** (Rolls-Royce Corporation), **Manfred Podlech** (MTU Aero Engines GmbH), **Steven Garner** (Eaton Aerospace), **Greg Hall** (Cessna Aircraft Company).



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