

**AMERICAN SOCIETY OF HEATING, REFRIGERATING AND
AIR CONDITIONING ENGINEERS, INC.**
1791 Tullie Circle, NE | Atlanta, GA 30329
(404) 636-8400

TC MINUTES COVER SHEET

T.C. NO. **7.9**

DATE OF MEETING: **June 26, 2005**

T.C. TITLE: **Commissioning**

LOCATION: **Denver, CO**

PRESENT				
VOTING	APPTD	NONVOTING	APPTD	NONMEMBERS
J. R. Anderson	05	Irv Bales	05	Costas Balaras
David Bevirt	05	Patrick Carpenter	04	Thomas Cappellin
David Bornside	05	Ben Crowley	05	Mike Eardley
Barry Bridges	03	Jay Enck	01	Bob Kroohs
Rick Cassault	05	Ken Fulk	00	Bob Linder
John Castelvechi	03	Carl Lawson	02	Tor Malmstrom
Timothy Corbett	02	Kristin Heinemeier	05	Henrik poulsen
Walter Grondzik	05	Charlie Culp	02	Mike Dolm
Gerald Kettler	04			Randy Casteel
Rodney Lewis	03			
William McCartney	05			
Andy Nolfo	04			
Ken Peet	04			
Richard Rose	05			
Elia Sterling	05			
Jeff Traylor	02			
Stephen Hanser	04			

ABSENT					
VOTING	APPTD	NONVOTING	APPTD	NONVOTING	APPTD
Charles Kieffer	05	Narenda Amarananai		Edward Iczkowski	
Michael King	04	Hollace Bailey		Eric Jensen	
		Thomas Bartlett		Ashok Kadakia	
		Alonzo Blalock		Christie Kjellman	
		David Butler		Micael Kuk	
		Natascha		Matt Nelson	
		Antoine Dammous		James Persaud	
		Wayne Dunn		John Reike	
		Daniel Frasier		Frederick Schroeder	
		Jeffry Gatlin		Christopher Smith	
		Jean Gibbons		Treasa Sweek	
		Ken Gillespie		Bob Towell	
		Raj Gupta		Cedric Trueman	
		James Harrison		Dennis Tuttle	
		Phil Haves		Henry Vance	
		Charles henck		Jean Visier	
		Daniel Henon		Paul Webb	

		Hugh Hinson		Chester Wisner	
		Eli Howard			

DISTRIBUTION

ALL VOTING MEMBERS (as of 5/04) AND LIAISONS (as of 1/05)

Anderson	Joseph	No e-mail provided in this listing	CTTC Liason
Brickman	Harvey		Handbook Liason
			Professional Development
De Bullet	Julian		Comm
			Special Pubs
Ferguson	Kimball		Liason
Hermans	Richard		Standards Liason
Hughes	Patrick		RAC Research Liason
Klock	William		Program Liason
Peterson	Janice		TAC Section Head
Ramspeck	Claire B.		Staff Liason (Standards)
Reeves	George		Standards Liason
Schambach	Frank		Program Liason
	Michael		
Vaughn	R.		Staff Liason/Resch/Tech Svcs

ASHRAE T.C. 7.9 ACTIVITIES SHEET

CHAIR: Gerald (Jerry) Kettler
 VICE CHAIR: Kristin Heinemeier
 SECRETARY: J. R. Anderson

TC MEETING SCHEDULE

<i>Location - Past 12 months</i>	<i>Date</i>	<i>Location - Next 12 months</i>	<i>Date</i>
Orlando	1/05	Chicago	1/06
Denver	6/05	Quebec City	6/06

TC SUBCOMMITTEES

<u>Function</u>	<u>Chairman</u>
Handbook	Charlie Culp
Program	Richard Rose
Membership	Elia Sterling
Research	Dave Shipley / Ken Peet
Long Range Planning	Jerry Kettler
Standards	Rodney Lewis
Commissioning Guideline(s)	Jeff Traylor
Web Master	Dave Shipley
Journal/Insights	Unassigned

RESEARCH PROJECTS – Current

<u>Number</u>	<u>Title</u>
1247-TRP	Field Performance Assessment of Package Equipment to Quantify the Need for Monitoring, FDD, and Continuous Commissioning The document for field testing has been completed. Field work is about to begin.

LONG RANGE RESEARCH PLAN

Priority	Title	Author	Notes
1)	Application notes for the commissioning process in specific market sectors	Heinemeier	GPC-1/0
2)	Field based evaluation of testing of sequence of operations		TC 1.4;7.8
3)	Performance improvement in existing buildings. Primary opportunities, methods for identifying and implementing improvements, and methods for measuring savings	Heinemeier	Std 180 TC 7.6
	For more detail information on additional plans the research		
	Subcommittee has a more comprehensive report.		

STANDARDS ACTIVITIES

Guideline 1 under revision.

Two new guidelines have been approved for development by the Standards Committee, and are to be submitted for proper documentation. See the long range plan report

TECHNICAL PAPERS

From sponsored research - none

From other sources - unknown

PROGRAMS**TC SPONSORED SYMPOSIA** (Past 2 years, **present** and *planned*);

Cx Starts with Design Intent	Walter Grondzik	06/02
Cx Specialty Facilities	Carl Lawson	01/03
Hi-Tech Facility Cx	Richard Rose	06/05

TC SPONSORED SEMINARS (Past 2 years, **present** and *planned*)

Impact of Cx on Commercial Markets	Andy Nolfo	01/03
Cx Specialty Facilities	Carl Lawson	01/03
Cx Life Safety Systems	Carl Lawson	06/03
Impact of Total Building Cx	Carl Lawson	01/04
Cx is More than FPT	Rich Rose	01/04
Retrocommissioning	Andy Nolfo	06/04
Training of Commissioning Authorities	Gerald Kettler	02/05
How ASHRAE's Guideline on Commissioning is Changing	Walter Grondzik	02/05
How to Comply With ASHRAE 62.1-2004	Eli Howard	02/05
Factors in Commissioning DDC systems	Rodney Lewis	06/05
<i>Preventing Train Wrecks in Underfloor Distribution Systems</i>	<i>Karl Stum</i>	<i>01/06</i>
<i>Case Studies of Commissioning Large Buildings</i>	<i>Elia Sterling</i>	<i>01/06</i>
<i>Commissioning Sustainable Buildings</i>	<i>Jay Enck</i>	<i>01/06</i>

TC SPONSORED FORUMS (Past 2 years, **present** and *planned*)

Persistence of Savings for Central Systems	Ken Peet	06/03
The Commissioning Handbook Chapter: Last Chance for Input	Charles Culp	06/05

PROGRAM PLAN: (See Above and attached)

JOURNAL PUBLICATIONS (Past 3 years, present and planned) - unknown

MEETING MINUTES – Sunday, June 26, 2005

**ASHRAE T.C. 7.9 - Commissioning
Denver, CO**

1. The meeting was called to order at 3:01 pm by Chairman Kettler
2. Self introductions were conducted.
3. Attendance sheets were distributed, and roll was taken: 19 out of 21 Voting members in attendance.
4. Vice Chairman Comments: none.
5. Agenda was reviewed and no additions were made. (Peterson/Castelvecchi, 19/0/0)
6. **Motion** was made and seconded to approve minutes from Orlando. (Nolfo/Corbett, 19/0/0)
7. Administrative matters:
Jerry Kettler brought forth some comments from the TC breakfast meeting. There is a study going on to change the Programs from 2 hours to 1-1/2 hours. Reasoning is that more Programs can be scheduled and the Speakers might be easier to obtain.
A new procedure to use FAQ's for questions for each TC has been implemented to reduce the number of phone calls to the Atlanta office. This has reduced the number by half.
TC 7.1 has been assigned the task of participating in the development of a Whole Building Design Guide.
WEB master training is ongoing.
.A reuest was made to make use of the Hightower award for special members of a TC.
The email for the chair is tc0709@ashrae.org.

SUBCOMMITTEE REPORTS

8. **Membership committee:** Anyone interested in Corresponding Membership should contact Elia Sterling.
9. **Program Committee:** See attached report for more details.

Priority for future programs:

- #1 Karl Stum will chair a new Seminar for Preventing Train Wrecks in Underfloor Distribution Systems. Chicago 2006 need abstracts by August 15
- #2 Elia Sterling to chair a Seminar: Case Studies of Commissioning Large Buildings. Chicago 2006 Need abstracts by August 15
- #3 Jay Enck to chair a Seminar: Commissioning Sustainable Buildings Chicago 2006 Need abstracts by August 15

Symposium for Quebec: Software Tools for Commissioning. He already has 6 abstracts. John House from Communications expressed an interest to have TC 9 co-sponsor

Seminar for Quebec: M & V for Commissioning

Seminar for Quebec: Commissioning Small Building Projects: Reik Casault to chair and has three other speakers: Jay Enck, Jeff Traylor, Janice Peterson

Vote to accept report: Andy Nolfo with Kristen 2nd 19/0/0

10. **Research Committee:** See attached report.
1274 project being followed by Ken Peet. Current reports are on the project website. A link will be provided from the TC website.
More details from the committee meeting minutes attached.
Vote to accept report: Jeff Traylor with Andy Nolfo 2nd 19/0/0
11. **Handbook Committee:** Charlie Culp handed out hard copy of the draft of the revised handbook chapter voted on by the sub-committee for the whole TC to approve as recommended. A questions was raised and Charlie agreed to provide an electronic copy to J. R. Anderson, Secretary, to send to members via e-mail and to provide means of a minor change based on this review by August 15
Vote to accept revision on this basis: Jeff Traylor with Richard rose 2nd 19/0/0
12. **Long Range Planning Committee:** See attached report by Jerry Kettler. Two new guidelines were approved for entering the system: Guideline 1.2 Technical Requirements for Commissioning Existing Building HVAC&R Systems has been submitted to Standards. Rick Casault to be Chair.
13. **Journal/Insights:** Larry Fisher had a conflict and has resigned from the committee. No replacement attending.

LIAISON REPORTS

14. *Handbook*: No comments

15. *Standards*

Rodney Lewis comments: Guideline 180 is new-no comments
Guideline 183 Load Calculations- no comments
Standard 62 the special committee 9.1 on member
petition may be out in the fall.
SSPC is scheduling 4 reviews per year to become more efficient.

GPC-4 has gone through the public review stage and is ready for publication.

SPC-111 Testing and Balancing for HVAC Kerry Kettler reported it is still in process.

GPC 11P MOT for Control components. Jerry Kettler reported it is out for public review, hopefully by August 1

TC 1.8 Owning and Operating costs No report

TC 7.7 Testing and Balancing Rodney Lewis reported. Back to Basics concept.

BCA: Kristin Heineimeier. The certification program is going well at this time. Region and Chapter structure is also going well. Committee structure is also going well. Work is going on to develop alliances with other organizations for training. The BCA will be active in an upcoming energy conference.

California Commissioning Collaborative: Kristin commented that there is a study going on Retro Commissioning of a 50,000 sq ft building

USBGC: Jay Enck commented that LEED NC 2.2 is out for review until the end of July 2005

Andy Nolfo reported that NEBB will have a new publication out within a month covering Design Phase Commissioning

BUSINESS

17. Old Business: None.

18. New Business: None

19. The next TC7.9 Committee meeting will Sunday Jan 22, 2006, at 3 PM in Chicago, IL.

20. **Motion** to adjourn was made at 5:01 pm and passed by acclamation.

—END OF REPORT—

ATTACHMENTS

Program Committee Report .
Research Committee Report .
Long Range Planning Committee Report
Handbook Committee Report

T.C.7.9 - COMMISSIONING

Long Range Planning Committee Report

June 25, 2005

The Commissioning Process, ASHRAE Guideline 0, has been published in coordination with the National Institute of Building Sciences (NIBS). This total building commissioning process will expand commissioning into new trades and areas. Guideline 1, The HVAC&R Commissioning Process is nearing completion. These efforts are targeted principally at new construction projects. The US Green Building Council LEED-NC program that requires commissioning is accelerating the growth of commissioning. The existing buildings that have not been commissioned and are not operating properly, present additional opportunities to apply the process but with modified procedures.

In spite of the growth of commissioning, there are several issues challenging the growth momentum and quality in the process. These issues are:

1. Lack of documented benefits and results of commissioning that have been adequately publicized.
2. A defined skill set for trained commissioning providers and training program requirements for these commissioning providers.
3. Coordination of other guidelines that are included in or support commissioning, such as: existing building commissioning, O&M data (Guideline 4), smoke control (Guideline 5), building operations training, LEED program commissioning and others.
4. Application tools and “boilerplate” for providers to uniformly apply the processes.
5. Interface and cooperation with other organizations in the above efforts.

To address these problems ASHRAE has the opportunity to provide needed guidance with the following Management by Objective points:

1. Continue the development of the revision of Guideline One-1996 and supporting user information.
2. Provide promotional support to Guideline 0 and 1 with technical articles, Journal articles, seminars and symposia, and interface with other organizations.
3. Support the research being conducted by several organizations outside of ASHRAE on cost/ benefit relationship and specific results of commissioning. The result of these efforts should be reviewed and analyzed to provide a simple explanation of the need for and results of commissioning. This information should be promoted to the trade media.
4. Conduct research to develop application programs for industry/facility specific commissioning programs and project implementation plans. Seek outside funding where possible. This could be in a similar format as the new energy design guide.
5. Develop an interface with the USGBC LEED program to support their commissioning requirements.
6. Develop or assist in the development of educational programs and commissioning support documentation for commissioning providers, owners, architects, consultants, and contractors to facilitate their participation in the process. The Building Commissioning Association, PECE, NEBB and AABC Commissioning Group have several committees working in this subject area.
4. Develop a series of commissioning related Guidelines and User Manuals. Since buildings are becoming more complicated, better tools are need for the users of the commissioning process. Evaluation tools for the operation of high performance buildings is also needed.

A. The following existing guidelines should be completed or revised to complement Guideline 0:

Guideline 1. HVAC&R Technical Requirements for The Commissioning Process

Guideline 4 (1.4) Preparation of Building Systems Manuals for HVAC&R Building Systems Commissioning (Revision of present guideline 4)

Guideline 5 (1.5) Technical Requirements for Commissioning Smoke Exhaust Systems (Revision of present guideline 5) Technical Committee 5.6 has agreed to facilitate this upgrade.

B. The following new guidelines should be developed:

Guideline 1.2 Commissioning Process for Existing HVAC&R Systems

Guideline 1.3 Building Operation and Maintenance Training for the HVAC&R

Commissioning Process

C. A user manual for Guideline 1 should be requested immediately after that guideline's publication. These user manuals should contain boilerplate documents and plans, data base tools and model sequences of operations. A user manual system should be discussed with NIBS for Guideline 0.

D. Commissioning publications (guidelines or application manuals) should be developed for: Commissioning Building HVAC&R Controls Systems, Commissioning of Medical and Laboratory Facility HVAC&R Systems, Commissioning for the USGBC LEED Program, Commissioning of Kitchen and Laboratory Exhaust Systems. Commissioning of Prison Facilities.

5. Develop a composite basic skill set needed to provide the commissioning process, and develop a related set of training requirements to facilitate the training of commissioning process providers. Many organizations including; The Building Commissioning Association, The Associated Air Balance Council Commissioning Group, The National Environmental Balance Bureau, The Association of Energy Engineers and the University of Wisconsin offer commissioning training and certification. These programs should be analyzed and supplemented. This should also include quality and integrity issues and interrelationships with other professionals.
6. Assist in the development of college level training in commissioning for architectural, engineering and technician programs.
7. Work with the engineering and architectural licensing boards to include commissioning knowledge in the license exam.

TC 7.9 Handbook Subcommittee Report

2005 Annual Meeting

Saturday, June 25, 2005, 8:00-10:00 AM

Adam's Mark Hotel – Tower – Biltmore (T)

1. Call to Order (Charlie Culp) Present:

Gerald Kettler, Ken Peet, John Castelvecci, Dieter Bartel, Kristen Heinemeier, Bill McCartney, Ken Gillespie and Charles Culp.

2. Handbook Schedule

The close-to-final version of the TC 7.9's Handbook was completed at this meeting.

The forum added some excellent ideas and brought out interesting points of which are listed below:

Please consider for 2006 Chapter 42.

1. Consider a separate section for abbreviations to enhance clarity.
 - Please comment on appropriateness of this (list included at the bottom of this report).
2. Expand the paragraph on automated commissioning to include how costs are being reduced.
 - Need to include references to this, otherwise we're just making open statements. If anyone has good references, we can include.
3. Need to add the cost / benefit of RCx.
 - Is included in RCx section.
4. Need to stress education for the operators and maintenance personnel.
 - Education was included, see if this is at the right level.

Delayed for next Chapter 42 – could be done in the electronic version.

5. Include a separate section for the commissioning process for smaller facilities and how they can perform commissioning without burdensome costs. Consider putting the top 5 items in the chapter to provide guidance on small building commissioning.

Note that the committee felt that Retro-Commissioning has become a much more important aspect of commissioning and that this section should be expanded even more in the next version. Research is required to bring the method of reporting the successes of Retro-Commissioning to a consistent level.

3. Plan

1. Culp to get the HB Chapter out to JR Anderson by the end of this meeting for distribution to the TC for review.
2. All voting members, corresponding members and other interested contributors will have until 7/15/05 to get comments back.
3. Culp to change the HB chapter by 8/1/05 and send to HB committee to get consensus on changes.
4. HB Committee approve / modify by 8/15/05.

5. Culp to get the HB Chapter to JR Anderson for a letter vote to TC 7.9 voting members by 9/1/05.
6. TC to vote by 9/20/05.

4. Contributors

Numerous individuals from this committee and even a few outside contributed to current version. Many thanks go to all who helped with comments. Extraordinary thanks go to a few who really took extra-extra time and provided great critiques in a timely way. The individuals are Cedric Trueman, Bill McCartney, Karl Stumm, John Castelvecci and Gerald Kettler. The HB is a better document because of everyone's effort.

5. Discussion

The HB Subcommittee all agreed that the current document follows Guideline 0, especially in how the predesign and the design phases are separated. At the subcommittee meeting, we added the inputs from Karl and John.

The HB chapter has been written to follow Guideline 0. If anyone can find an area that we have missed, please forward this to me as soon as possible, since this will need to be fixed on a high priority basis. There was some confusion at the full TC on whether or not the submitted chapter followed Guideline 0. The following is a list of the areas that were discussed.

1. Concern raised that the HB required 100% testing of all new installed systems.
 - A. Page 4, "**Utilizing quality-based sampling techniques to detect systemic problems; and**" provides the intent to use sampling follows Guideline 0. Do note that sampling technology should detect if the contractor / installers or system design installation does not function correctly but does add risk to the building not working correctly in specific areas that may be installed incorrectly.
 - Page 16, "**Some CA practitioners statistically sample items on checklists to verify proper completion (typically random or targeted sampling 2 to 20%). If an inordinate fraction of the sampled items that are deficient (typically more than 10%), the contractor is required to check and document all remaining items. The contractual documents need to contain the details of the sampling and actions based on the results of the sampling.**" provides the intent to use sampling follows Guideline 0. Sampling technology should detect if the contractor / installers or system design installation does not function correctly.
2. Concern raised that the HB does not follow Guideline 0.
 - Page 8, "**Owner's Project Requirements (OPR). The OPR forms the basis from which all design, construction, acceptance, and operational decisions are made. It describes the functional requirements of the facility and expectations of how it will be used and operated. It includes project and design goals, budgets,**

limitations, schedules, owner directives, and supporting information, as well as necessary information for all disciplines to properly plan, design, construct, operate, and maintain systems and assemblies (ASHRAE – Guideline 0). ”

Sample of the most likely abbreviations to be included, worthwhile?

Abbreviations

**ARI – Air-Conditioning and Refrigeration Institute
BAS – Building Automation System
BOD - Basis of Design
CA - Commissioning Authority
CP - Commissioning Plan
O&M – Operations and Maintenance
OPR – Owner’s Project Requirements
QA/QC – Quality Assurance / Quality Control**

TC 7.9 Research Subcommittee Meeting Agenda
2005 Winter Meeting
Saturday, June 25, 2005, 10:00 am-12:00 noon
Adam's Mark Denver, Biltmore Room (Tower)

1. Call to Order (Ken Peet)
Present:

2. Funded Projects

<i>Priority</i>	<i>Title</i>	<i>Status</i>	<i>Contractor</i>	<i>Notes</i>
	RP 1137 – Field Performance Assessment of VAV Control systems Before and After Commissioning	Complete	Patrick Fleming/ Stantech Consulting	Project is complete. Larry Fisher presented final report at full TC meeting. (June 2004)
	1274-TRP: Field Performance Assessment of Packaged Equipment to Quantify the Benefits of Proper Service and Assessing the Long Term Need for Monitoring, FDD, and Continuous Commissioning Technology	In progress	ADM Associates, Inc.	Sponsored by 7.5 (formerly 4.11); Prioritized RTAR. This project went out to bid and three bids were received. Project has been awarded to ADM Associates, Sacramento, CA. Ken Peet is TC 7.9 rep on the PMS. First meeting was in Nashville. (June 2004) <i>Feb report: Having meeting tomorrow night 6 to 7:30, will report on what's happened since. Contractor has set up a website. Will add that to the report. Two documents: field diagnostic on-site test procedure for RTU (still getting ready to do the field work). 20% level of document review document is on the site. Mainly deals with lit review.</i>

3. Projects in the Pipeline

<i>Priority</i>	<i>Title</i>	<i>Status</i>	<i>Author</i>	<i>Notes</i>
1	Impact of Commissioning HVAC Systems on Life Cycle Costs	WS-1241	Kristin Heinemeier	<p>To the best of our knowledge, this WS has been approved. It will remain the #1 priority due to its importance for promoting commissioning. We are still trying to determine its status. (June 2004) As of Jan. 2005, this WS had been removed from the ASHRAE plan because of lack of action by the TC. We can have it restored if we respond to the earlier comments from RAC. The author is working on that. (Jan. 2005)</p> <p><i>Feb report: So much has gone on in the topic area that the work statement is now outdated. Emphasis is not quite right any more. It is encouraging that RAC is now more interested in the topic area. Not ready to resubmit as is, but may completely revise based on other things going on. PECCI put together a case study protocol for Cx information for California Commissioning Collaborative (about 10 bldgs in there – maybe 40 altogether at less complete point). Evan Mills of LBL has done a good study, taking advantage of some of that work. Nationwide, but most data are from TAMU and PECCI. 300 bldgs, with good analysis and a report. Expecting more to happen in near future. Need to take some time to digest this other work before we redraft our work statement. Dave will e-mail Mike Vaughn to let him know we don't need it to be prioritized. Ken Gillespie reports that TC 7.5 is interested in this topic. We would be interested in working together with 7.5 on a major rewrite of it, and then would co-sponsor what they come up with.</i></p>
2	RTAR 2005-56: The Impact of Commissioning on Comfort	RTAR	Dave Shipley	<p>RTAR drafted, submitted, and returned with comments. The author revised the RTAR and submitted the new version with the TC's research plan after Nashville. Work has not yet begun on a work statement. (Jan. 2005)</p>

<i>Priority</i>	<i>Title</i>	<i>Status</i>	<i>Author</i>	<i>Notes</i>
				<i>Feb report: Ideally, URP-1329 will go forward and will provide a control group for this proposed research. This RTAR would then change to be a second phase of URP-1329, focusing on commissioned buildings. It might not be limited to cx and comfort, but might add the IEQ elements as well.</i>
3	RTAR 2005-57: Utilization of Random Sampling Technology in Performing Building Commissioning	RTAR	J. R. Anderson	RTAR received extensive comments. J.R. Anderson has pledged to work with those on both sides of the issue to rewrite the RTAR for submittal in August. (June 2004) <i>Feb report: ASHRAE considers this an existing technology, and no research is required. No plans to do anything. Forum was sparsely attended and negative. Few are using sampling. Idea of weighted random sampling might be interesting to pursue.</i>
4	Field-Based Evaluation of Methods for Commissioning DDC Systems	Title	Larry Fisher	Larry Fisher has agreed to write the RTAR and seek TC 1.4 Control Theory and Application as a co-sponsor. (June 2004)
5	Methods of Improving Persistence of Commissioning Savings in Control Systems	Title	Ken Peet, David Underwood	Ken Peet submitted a Forum that seems to have been approved but didn't fit into the Anaheim schedule. He will try again. (Jan. 2004) <i>Feb report: Two times has submitted a forum and two times it has not fit.</i>
6	One Time vs Short-Term vs Seasonal Testing of Air-Handling Units	Title	Mingsheng Liu	Awaiting outcome of WS-1092. (June 2003)
7	M&V for Cx	Title	Kristin	New idea generated here.

4. Other Items

As they arise.

Notes:

- We are tasked with devising a prioritized list of research projects at this meeting, for approval by the TC, because ASHRAE's deadline for that is usually in August.
- From the above list of ideas, it looks like several of our RTARs are waiting on results of other activities before they can really come to life. Do we want to push them down the priority list and focus on other things?
- All the current RTARs and work statements are readily available on the TC website. Please go and download anything you need.