



## WHPA Goal 2: CQM Standard 180 User Guide Working Group Thursday April 28, 2015 Meeting Notes

### Call to Order

The first planning meeting was called to order at 10:05 am PDT by Dale Rossi, Chair of this working group and a representative of Field Diagnostic Services Inc (FDSI).

### Roll Call

The Chair considered one member of each organization to be a voting member for this new working group, He intends to work toward consensus on all decisions. 8 of 18 initial members attended this meeting plus 1 non-voting members and 2 WHPA staff and guests for a total of 11 attendees.

P = Present at meeting A = Absent from meeting; if proxy has been assigned it will be noted below. Although Voting Members have been designated by Staff, this group acts primarily by consensus.				
<b>CQM Maintenance Task Working Group Voting Members</b>				
ACCA (Air Conditioning Contractors of America)	Donald	Prather	Contractor Association	P
AHRI	Warren	Lupson	HVAC Manufacturer Association	
Aire Rite AC & Refrigeration	Don	Langston	Contractor (Nonresidential)	
BELIMO	Darryl	DeAngelis	Controls (Manufacturer or Distributor)	
BMI (BuildingMetrics, Inc.)	Pete	Jacobs	Energy Efficiency Program Consultant	
CLEARresult (formerly PECD)	Michael	Blazey	Energy Efficiency Program Consultant	P
FDSI (Field Diagnostic Services Inc.)	Dale	Rossi	Third Party Quality Assurance Providers	P
GWP (Goodheart-Willcox Publisher)	Sandy	Clark	Educator, Trainer	
Honeywell ECC, Commercial Buildings, Trade	Michael	Lawing	Controls (Manufacturer or Distributor)	P
HSGS (Honeywell Smart Grid Solutions)	Shayne	Holderby	Energy Efficiency Program Consultant	P
Marina Mechanical	Denny	Mann	Contractor (Nonresidential)	
National Comfort Institute	Jeff	Sturgeon	Educator, Trainer	
Richard Danks Consulting - FacilityPro	Richard	Danks	Other Stakeholder	P
SCE (Southern California Edison)	Steve	Clinton	California IOU	P
Charles Segerstrom, Energy Efficiency Consulting	Charles	Segerstrom	Energy Efficiency Program Consultant	
Tre' Laine Associates	Pepper	Hunziker	Energy Efficiency Program Consultant	P
UC Davis EEC (Energy Efficiency Center)	Kristin	Heinemeier	Research Organization	
Western Allied Corporation	Mike	Gallagher	Contractor (Nonresidential)	
<b>CQM Maintenance Task Working Group Non-Voting Members</b>				
CLEARresult	Mike	Withers	Energy Efficiency Program Consultant	P
Honeywell ECC, Commercial Buildings	Adrienne	Thomle	Controls (Manufacturer or Distributor)	
HSGS (Honeywell Smart Grid Solutions)	Steve	Varnum	Energy Efficiency Program Consultant	
<b>CQM Maintenance Task Working Group Guests</b>				
California Public Utilities Commission (CPUC) - Energy Division	Lola	Odunlami	California PUC	P
<b>WHPA Staff (Non-Voting)</b>				
BBI (Better Buildings Inc.)	Mark	Lowry	WHPA Executive Advisor/BBI COO	
BNB Consulting/WHPA Staff	Bob	Sundberg	Energy Efficiency Program Consultant	P (scribe)
Empowered Solutions/WHPA Staff (WHPA Co-Director)	Shea	Dibble	Energy Efficiency Organization	

*\*\* Organization is Not a Member of the WHPA; + Individual is NOT Registered with the WHPA; <sup>(P)</sup> after last name = Member/Registrant is Pending Approval from the WHPA Executive Committee*

*To avoid repetition, the name of the member organization will not be repeated in the body of the minutes past the first identification with the name of the representative participant.*



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**Welcoming and Member Introductions**

None.

**New Business**

None.

**Approve Previous Meeting Draft Notes**

The April 14 meeting draft notes were distributed April 21. No revisions or corrections were offered by members. The finalized meeting notes would be posted to the WHPA website by Bob Sundberg.

**ACTION Items**

None.

**AGENDA**

Topic	Discussion Leader	Desired Outcome
Welcome, Roll Call, Member Introduction, Approve Past Meeting Notes, Review Action Items, New Business, Meeting Agenda	Chair, WHPA Staff	Record attendees, welcome any new members, approve previous meeting minutes, review status of any open Action items, planned agenda and bring up any new business items for the WG to consider addressing.
Hold initial discussions to begin determining working group goals	Dale Rossi	Gather member input on suggestion content areas/topics in order to begin establishing goals and scope of 2016 work product. .
Set next meeting date/time, assign actions and proposed agenda and adjourn.	Chair, WHPA Staff	Clear understanding of member responsibilities for the next meeting. Next meeting date/time established.

**User Guide Objectives, Scope and Target Audience – Dale Rossi**

Dale Rossi, Field Diagnostic Services Inc. (FDSI), began the meeting with a summary of the two very different audiences and purposes members had suggested for this user guide.

- One primary audience proposed was service technicians and that the user guide be developed to help them carry out Standard 180 based utility program requirements.
- Another primary audience was the contractor and the user guide would be developed to help them better communicate with a building owner or the responsible party. How to develop a maintenance program and develop its requirements and the means to document and communicate the value proposition.

Dale asked Lola Odunlami, CPUC, for her thoughts on the purpose for a user guide.

Lola Odunlami, CPUC, thought the two stated goals and audiences were directly connected. You had to be addressing both.

Pepper Hunziker, Tre’ Laine Associates, suggested they might consider having the user guide address both side by side. How the contractor would operationalize Standard 180 as well as how the technician would implement it in the field to successfully deliver a Standard 180 based maintenance program.

Steve Clinton, SCE, thought from his training perspective that it was the technician who was mostly delivering the program, doing the work face to face with the customer. He thought the main focus for the user guide should be on the technician.

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Pepper Hunziker proposed they gather feedback from the program implementers in order to determine what they thought would be a useful user guide.

Shayne Holderby, Honeywell Smart Grid Solutions (HSGS) and implementer for the PG&E program, had seen a couple of competing contractor models depending on the firm size and how they were organized. Some had a dedicated and separate sales staff who were the primary point of contact for customers and who did a lot of outreach. Other firms didn't have a sales force and had their technicians involved in proposals of work for service and repair sales. Those technicians tended to have quite a bit of direct customer contact in addition to delivering maintenance services. The term "customer" might not be the owner of the building but rather the key decision-maker for any service, repair or replacement. There were often multiple layers of decision-makers and that tended to create a long sales cycle. Their program had tried to drive all the way to the final owner which was often less than successful. Their program had been more successful reaching and convincing a decision-maker at the local level who would drive the decision up within their organization. That had proved to be more effective for them. He thought the user guide emphasis should be on the contractor and technician staff, not on program implementers. If the implementers didn't understand the standard, they shouldn't be in their capacity.

Dale Rossi tried to sum up that what he was hearing was that for all these participants. What was being focused on was communications, communicating the value of the service or about work that needed attention, NOT about working on the equipment.

Shayne Holderby disagreed and thought that the emphasis needed to be on the service being delivered first. He thought that it was the work on the equipment that took a higher priority in establishing the customer relationship. Once the relationship was established you could move into the value added benefits that would be demonstrated.

Richard Danks, Richard Danks Consulting, asked them to stop and think about how many technicians they thought would actually look through and implement Standard 180 Sections 1 through 4. He thought one of the reasons Dale Rossi and the group were struggling was that compliance with this standard was not well understood at the management and implementer level. He'd received a lot of the feedback from contractors that related to their confusion as to how they might implement a practical contractual relationship with their customer to both conduct their business and comply with the standard. Section 5 listed representative tasks which were considered the minimum but was not developed as a step-by-step work process. It didn't provide the detailed step-by-step procedures like a car shop manual would. There was no detail in the current standard which would help the technician perform their job better.

Richard added that he considered compliance with this standard meant developing a program that gives the guidance to the technician. The tech would certainly be involved in taking an inventory of the equipment to be maintained. But, someone had to develop the maintenance program which defined what that inventory would be. He asked attendees to rethink the assumptions their previous statements had been based on. He asked them to think through how the user guide could follow the intent of Standard 180.

Dale Rossi reminded members that Don Langston had formed this working group to develop a user guide around establishing performance objectives and condition indicators. Provide examples of how to develop a maintenance plan, how to implement that into a maintenance contract based on the standard. He asked Richard what he thought about that guidance.

Richard Danks answered by reviewing the three goals of the standard: thermal comfort; energy efficiency; indoor air quality. As he understood the WHPA working group's effort, the focus would be predominantly on energy efficiency. This user guide would provide guidance to this community of stakeholders on how they could achieve compliance with the standard.

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Dale Rossi asked Lola Odunlami whether she thought that the CPUC and CEC would agree with Richards statement that the primary goal of focus regarding Standard 180 would be energy efficiency.

Lola Odunlami responded that she thought they were all important and related. Although an IOU program might need to be evaluated on energy efficiency and savings for customers, all of the standard's goals were important. It needed to be a combination of working toward achieving all three in her opinion.

Dale Rossi offered that in his experience the goals were related but often competed with each other. Gaining better energy efficiency could result in an indoor air quality penalty. Likewise, improving indoor air quality or thermal comfort could result in less lower energy efficiency and increased energy consumption.

Donald Prather, ACCA, suggested that if an HVAC system was being maintained the way it should be, to code, it would deliver reasonable energy efficiency. He described an neglected rooftop unit with a broken economizer system and dampers locked wide open vs. a maintained system where the economizer was set to operate per code.

Shayne Holderby, HSGS, asked the group if they could name any federal, state or local code that was enforceable under existing building maintenance operation, beyond the initial installation compliance code. He was not aware of any code compliance requirements for maintenance. Title 24 indoor air requirements didn't apply, in his opinion, for building maintenance circumstances. He thought that trying to enforce a code like Standard 180 which wasn't in effect within a utility program, it could be a very difficult situation.

Dale Rossi didn't think the enforceability of a code was really the right question. It wasn't developed to enforce local regulations. Standard 180 was about a negotiation, a discussion between a customer and a service provider. The customer needed to set goals for their building according to the three outlined in the standard, how they intended for it to operate. The standard existed to foster communication between the owner/responsible party and their service provider about whether they were meeting those goals. If not, why not and what they should do to revise the maintenance program in an attempt to meet the goals, or to change the goals themselves.

Richard Danks added that the charter for ASHRAE was to craft the standard in code worthy language. So that a municipality or other entity could adopt the standard into their code. The authors tried to determine the minimal best practices, not optimal ones, what would be the ingredients necessary to achieve those goals.

Dale Rossi agreed but added the case was quite different when the standard was being used in a utility program. In that case, the utility program defined many of the service provider requirements for the maintenance program, not just the owner or responsible party. They utilized program incentives to offset the imposed requirements and encourage building owners to improve their approach for HVAC maintenance and better understand the benefits of the program approach. To convince them to want to continue with the approach after the program ended.

Richard Danks saw those utility program requirements as a means for correction of the "bad actors" in their marketplace or others who neglected their HVAC systems, to convince them of a way to avoid wasteful overconsumption of their resource.

Mike Withers, CLEAResult, reminded the group that the utility program which offered the incentives for the standards based program always had the prerogative to require more than the standard's minimum.

Dale Rossi responded that the standard stated it was providing a minimum but didn't really go about describing in detail just what that minimum was. According to the standard itself, the maintenance program was really based on what the owner set as their performance objectives. There was a list of not well defined or described maintenance tasks which were required to meet that minimum. Utility programs were based on efforts to save energy with energy savings claims being provided to the regulator, CPUC. The part he saw which was missing in all of the programs was that there was no provision or requirement in the maintenance program for documenting or reporting what amount of

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energy savings was actually being achieved. Within the program, there were no energy savings goal requirements being set or quantification of energy use before and after participation began to prove the savings. The customer in these programs would be completely unaware of any actual energy or other savings. One of the goals for this group suggested by Don Langston was to provide ways, when implementing the standard and designing a maintenance program, in which the customer could be informed about their energy savings under the program. That the customer was receiving an actual dollar benefit that more than offset their additional maintenance investment. That the user guide help point out ways to document benefits of the program so that owners would continue the practice after the program incentives expired. It was this feedback loop of communication which he and Don thought was missing from all of the current programs.

Dale indicated that he thought benefits like equipment reliability were nonnegotiable. All people wanted their equipment to work. He considered that this goal might fit in as part of the larger “thermal comfort” goal. He then asked the group about this sort of communication loop regarding energy savings and to communicate what the benefits were for this sort of maintenance program. Whether they should be included in their user guide and as goals for this group. They’d had working groups focused on technical maintenance details and procedures for more than two years but there hadn’t been any group effort focused on how to communicate the benefits a customer was receiving from a Standard 180 approach to maintenance. He knew that Don Langston had intended to group to focus on communications, benefits and the customer’s value proposition. He asked attendees for their comments.

Richard Danks directed the group to look at Standard 180 Section 4.2.1 together. This was an example of what must be done to comply with the standard. He presumed that the authors intended, but did not detail, that it would include the unit name plate date, manufacturer, date of manufacture, capacity data and maybe a list of spares and available replacement parts. Not details about what maintenance was recommended for the unit. The standard also didn’t detail how you would record the inventory or exactly who would complete the task. No requirement for hard copy files in a secure file cabinet or electronic file or some other means like a full blown building automation system capable of cranking out detailed work orders. He thought Don Langston recognized that the standard did identify what needed to be done, what was required. The Standard didn’t point out how. He thought Don expected this user guide to help a service provider discuss with an owner just how they proposed to accomplish this objective to comply with this standard.

**4.2.1 Inventory of Items to be Inspected and Maintained.** Components of HVAC systems that impact the building’s *performance* shall be inventoried. This detailed list shall be used to establish unacceptable system condition indicators, *inspection frequencies*, and *maintenance tasks*.

Dale Rossi thought the “what needed to be done for an inventory” was a good example. He added that it didn’t include a mechanical evaluation of the unit condition as some people had earlier thought. He thought Richard had nailed a basic concept which Don had related to him. The standard outlined “what” needed to be done but not how, as Richard had pointed out. Don had told him that the user guide should focus on providing user a step-by-step approach on “how” to implement each part of the standard. To provide examples and templates on how to develop a maintenance plan.

Mike Withers, CLEAResult, agreed with Dale. They’d taken technician and maintenance task details about as far as they could. This would be the time to focus on the client and service provider guidance.

After some further discussion about the technician and WE&T concerns, Dale Rossi suggested that they might consider the role the technician had in the feedback loop to the customer. When normal maintenance objectives could not be reached or new condition indicators popped up, how the technician would contribute to communicating the need to owners and the benefits of taking the recommended action. It was that sort of feedback and communication which wasn’t being addressed by current IOU programs and it should be.

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Dale thought that the programs had been pretty good at providing very detailed technical tasking for technicians. The tasks had been detailed but in many cases there was no real “plan” developed. The plan would contain statements about what they were trying to achieve through this approach, some way to quantify and report on how well they were doing to determine whether or not they were achieving their goals. It would also include procedures established for communications whenever delivery of maintenance tasks ran into barriers.

Pepper Hunziker thought that they should check with the program implementers like Michael Blazey and Shayne Holderby who were running the CQM programs in the field to see whether they could leverage the earlier work on Section 5 and see if this work could be tied in.

Michael Blazey agreed with Dale’s comments that the Section 5 working group efforts had provided more detailed checklists of maintenance tasks which the technicians seemed to be able to work through fairly well. That, for him, was the core of the standard and accounted for about 98% of what the standard required.

Dale asked Michael Blazey whether he thought that by just doing the work outlined in Section 5, this was sufficient to comply with the entire standard? Completing that maintenance checklist did amount to complying with the program requirements, but did it also mean they had complied with the standard? Dale vehemently disagreed with Michael’s last statement. Dale believed that the program did not have or require an actual “maintenance plan,” goals the customer had agreed to or co-developed or means to determine whether or how they were being reached.

Michael Blazey indicated that the contractor’s office and sales staff had such a plan developed for each customer. They’d divided responsibilities into the sales side and the technician side. Techs had access to the maintenance plans and contract which he’d referenced in their training. But, techs were more focused on the building and HVAC system requirements. He offered to share copies of contracts to show examples of maintenance plans. He worked on technician training and wasn’t as familiar with what training the office and sales staff received regarding compliance with Standard 180. We go over the general goals for the standard but most of the time we don’t ask technicians to enter data related to the indoor air quality or comfort because they don’t know what those standards or goals are for the building.

**ACTION:** Michael Blazey committed to providing copies of several CQM program contracts which would provide examples of how maintenance plans were detailed, including goals to meet and comply with Standard 180 requirements.

Dale Rossi indicated that he’d reviewed many, many program contracts which seemed to consist mostly in agreements on which forms needed to be completed and the list of maintenance tasks which needed to be performed. He’d never seen any contracts where there were statements about what the customer wanted to achieve (goals) and methods for how to measure and report on whether those goals were being achieved. And, he’d been on hundreds of weekly meetings with program implementers and their contractors and not once had plan goals been discussed. Those weekly meetings were all about tasks which had been completed, work documentation being filled out and qualifying for incentives.

Michael’s last statement was right to his main point. He’d never heard or read that contracts had discussed or established goals for thermal comfort, indoor air quality or energy efficiency. It was establishing maintenance plan goals which seemed to be missing from all of the programs and maintenance agreements.

Michael Blazey stated that no building could be worked on until the Standard 180 objectives had been established and entered into their system.

Dale Rossi didn’t dispute that point. He’d helped many contractors enter goal statements into their contracts. His point was that there didn’t seem to be any method or effort to actually determine whether those goals were being achieved. He’d entered statements like the number of incidents of indoor air temperature over a stated setpoint and

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indoor air quality CO2 readings were not to exceed a ppm setpoint more than X times per year. Customers normally didn't suggest these goals but would agree to them. But, he didn't know of any efforts to determine whether such goals were being achieved or not. Putting in goals statements seemed to be there just to meet a requirement for filling out the forms. They didn't seem to be real objectives of the maintenance programs being delivered. The standard indicated that you had to define metrics for measuring whether program goals were being achieved or not. There didn't seem to be any methods in place to ensure that the goal evaluations were taking place or reported on to the customer.

Donald Prather, ACCA, noted that goals statements were being developed but that there was no feedback effort.

Pepper Hunziker suggested they get feedback from program implementers on how each of their programs actually worked rather than guessing about what they did. Maybe what Dale thought was missing was really there already and just needed to be revealed. She knew there was sales training which occurred which would have included what the contractor was supposed to cover with their prospective customers. That should be including discussion about goals and how to communicate the value proposition to their customers.

Dale Rossi's question to the program implementers was, after you'd filled out the goals and other statements in the contract, what then? What was required to happen during program implementation. He thought he already knew the answer. Nothing happened except that the contract included goal statements. No feedback loop was being established or implemented. Don Langston had goal statements in his contracts related to improvements in energy efficiency and energy savings. He'd been requesting meter records for a long time and hadn't yet been able to get any.

Dale thought the purpose for this user guide was to prepare a vision of what you would need to close that loop, to show the customer that goals were being achieved, to prove that this approach had value. Pepper asked whether this was about case studies? Dale explained that you'd have to have the performance objective goal and metrics for measurements before you could build or develop a case study. Right in the standard it says, subsequently monitor goal results. Those would be the measurements from which you could develop a case study. Collecting goal status measurements to create those metrics is what he saw was not happening. What was missing was collection of the data necessary to determine whether any energy was being saved, related to the energy efficiency goal. Most contractors didn't have the capability to normalize the energy use data or disaggregate HVAC use for total building use. They looked to the IOU program for help in determining what the energy use was prior to the program and after the program was being implemented.

Bob Sundberg, WHPA staff, thought that Don Langston had already stated his vision, what he thought the user guide could provide. Setting those sorts of goals, like reducing energy consumption, developing examples of how contractors could measure those goals and then how they could report achieving goals in ways building owners could easily understand. The user guide would explain the role for each key stakeholder in this communications process. The owner, the contractor/sales/office staff and the technician. Here was a goal, here's how it was agreed to be measured and intervals established for reporting goal status, here's what it would take to know if it's been accomplished or not. Establishing what value the customer had received. Then, the user guide could go into detail by providing examples for what each stakeholder's responsibilities were in that communication process.

Dale Rossi agreed. Establishing goals and implementation plans like energy savings was very do-able. Just not being done. There were energy use release forms which customers could agree to which would allow access to past and current building energy consumption. That data could be normalized for weather and you could even develop macros to project current use for annual use trending.

Richard Danks agreed that those sorts of goals could be established and tracked. It depended on what was important to each customer. They all got utility bills which detailed cost, electrical consumption and demand.

- They could also set annual goals and even divide by the gross square footage of the facility which was a common measurement metric in facility management.

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- Energy Star also had reams of data to benchmark each type of commercial property against national averages. Goals could be set like the wanted their energy use benchmark to decline by X% annually.
- You could also measure the actual maintenance program. What was the % uptime against a goal. What were the \$s spent over and above the basic maintenance service against an annual goal. Planned maintenance vs. unplanned maintenance costs per year.
- Meantime between HVAC equipment failures.
- Measure building occupant complaints received as a measure of a comfort goal.

These were common means across the country to measure the beneficial impact of any maintenance approach. This wasn't rocket science.

Dale Rossi thanked Richard for all the suggestions but added that while this wasn't rocket science, it did feel like rocket science to many contractors. He thought that what Don had asked them to do was to take those concepts and examples and reduce them into step-by-step instructions, templates and examples, how specifically to establish those goals and a means to measure and report on their status. For contractors with three or five trucks who hadn't ever gone to college as well as for the larger firms.

Richard Danks agreed and stated that he was onboard to help this group do just that.

Pepper Hunziker liked the idea of the group developing that sort of user guide but thought it should be run past the program implementers, some who had already dropped off the call. She suggested Bob have this brought up at the full CQM Committee meeting where the program implementers might be able to comment. She thought they should run it by the committee before they started. She thought it was important to determine support from program implementers who would be responsible for developing training based on the user guide suggestions.

Steve Clinton, SCE, said he just dealt with the contractor training and couldn't comment on the program side. He agreed to looking into getting SCE staff from the program side to participate on this working group.

**ACTION:** Steve Clinton, SCE program training, agreed to seek out working group participants from the program side of their staff.

Dale Rossi asked for confirmation on a general state of their working group goal. Was their goal to develop a user guide on how to communicate the benefits received by the customer for participation in a Standard 180 based utility program? He thought that Don Langston had wanted this group to create a tool for a contractor to better communicate with their customer to prove that participating in this program was beneficial for them.

Donald Prather agreed. That this would allow a customer to compare what their current contractor was delivering to other contractors

Dale Rossi agreed that he wanted to get consensus on their objectives before they began their work. He'd put together a summary of what he'd understood the group had generally agreed on.

- They were NOT talking about technical training for technicians.
- They were talking about a user guide which would focus on customer communication primarily between the customer and contractor staff who would be developing a maintenance plan with the owner.
- Also, the user guide would focus on development of a maintenance plan. How to write up a maintenance plan with templates and examples.
  - How to state performance objectives, how to collect data as a means to measure progress or status against those goals.
  - How to create means to report and communicate with their customer tracking progress of those metrics.



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- Possible, to suggest how to create a case study or presentation to communicate benefits received in the maintenance program to their customers. Communications which would not require a lot of advanced training.
- How to define, measure and communicate IOU program and maintenance benefits in a variety of ways.

Dale Rossi agreed to write up a draft document that laid out those general objectives. Three, four or five specific goals for the working group that they'd like to achieve. He offered to run a first draft by Pepper Hunziker first. Then, circulate it to the working group and then onto program implementers. He also thought it would be useful to get feedback from contractors and end users. He set as a goal having a pretty mature document together, including Pepper's feedback, by May 12 or so.

Donald Prather, ACCA, volunteered to provide feedback to formulate a first draft.

**ACTION:** Dale Rossi agreed to write up a draft of working group objectives. He'd first get feedback from Pepper Hunziker and then forward the revised draft out to the entire working group for their input. They then intended to get specific feedback from program managers and implementers and, ideally, contractors and end users.

Pepper Hunziker suggested that the three previous work products of the Maintenance Task Working Group be provided to members of this working group. That way, all current working group members would be aware of the substantial effort already devoted to the Section 5 technical portion of Standard 180. At Dale Rossi's request, Bob Sundberg agreed.

**ACTION:** Bob Sundberg would send all working group members the three previous work products of the previous Maintenance Task Working Group.

**Closing Comments/Adjournment**

Dale Rossi suggested they not schedule working group meetings until they'd established their objectives.

The Chair adjourned the meeting at 11:40 am PDT.

\* \* \* \* \*

**ACTION** Items listed on following page.

**Action Items and Key Decisions (not referenced above)**

April 28 **ACTION:** Michael Blazey would provide copies of several CQM program contracts which would provide examples of how maintenance plans were detailed to comply with Standard 180 requirements.

April 28 **ACTION:** Steve Clinton, SCE program training, agreed to seek out working group participants from the program side of their staff.

April 28 **ACTION:** Dale Rossi agreed to write up a draft of working group objectives. He'd first get feedback from Pepper Hunziker and then forward the revised draft out to the entire working group for their input. They then intended to get specific feedback from program implementers and, ideally, contractors and end users.

April 28 **ACTION:** Bob Sundberg would send all working group members the three previous work products of the previous Maintenance Task Working Group.