Instructions

for Participating in
ASHRAE's

Commissioning Process Management Professional (CPMP)

Certification
Program

Effective date: 10/06/2009

Related Resources

Resources available to help prepare for the CPMP examination include, but are not limited to, the following:

- ASHRAE Guideline 0-2005 – The Commissioning Process
- ASHRAE Guideline 1.1-2007 – HVAC&R Technical Requirements for the Commissioning Process
- ASHRAE Learning Institute course: Commissioning Process in New and Existing Buildings
- ASHRAE Learning Institute course: Commissioning Process and ASHRAE's Guideline 0
- ACG Commissioning Guideline
- Building Commissioning Association Guidelines on New and Existing Buildings
- Canadian Standards Association Z318.0-05 – Commissioning of Health Care Facilities
- National Institute of Building Sciences Guideline 3-2006 – Exterior Envelope Technical Requirements for The Commissioning Process
- NEBB Procedural Standards for Whole Building Systems Commissioning of New Construction
- NEBB Procedural Standards for Retro-Commissioning of Existing Buildings
- SMACNA HVAC Systems Commissioning Manual
- ANSI/ASHRAE/IESNA Standard 90.1-2007 – Energy Efficient Design of New Buildings Except Low-Rise Residential Buildings
- ANSI/ASHRAE Standard 62.1-2007 – Ventilation for Acceptable Indoor Air Quality
- NFPA Standard 90A – Installation of Air-Conditioning and Ventilation Systems

ASHRAE does not warrant that participation in or use of any of the above resources will guarantee successful completion of the examination. Nor does ASHRAE warrant that all information presented in all of the above resources is non-contradictory. However, ASHRAE will do its best to avoid testing contradictory, out-of-date, or inaccurate information.

American Society of Heating, Refrigerating and Air-Conditioning Engineers

Commissioning Process Management Professional Examination
Detailed Content Outline

Open cells show an examination could include items from indicated cognitive levels.
Shaded cells prevent appearance of items on examinations.

	Items			
	Cognitive Level			
	Recall	Application	Analysis	Totals
I. THE COMMISSIONING PROCESS FOR NEW BUILDINGS	**23**	**24**	**13**	**60**
A. Pre-Design Phase	**6**	**8**	**6**	**20**
1. Identify the owner's project manager and commissioning authority (e.g., RFQ)				
2. Develop owner's project requirements document with the commissioning authority e.g. • lessons learned from previous projects • project definition • building performance and benchmarks • project budget • programming document • constructability report • definition of project success • maintainability of each system • maintenance and operations capabilities of staff • systems manuals • training and documentation requirements • review of lessons learned				
3. Recommend to the owner whether existing staff capabilities will have to be enhanced				
4. Assist development of the initial commissioning process plan				
5. Develop the scope of work for the commissioning process with the commissioning authority				
6. Prepare commissioning process milestones and schedule				
7. Verify that				
a. design checklists contain required information				
b. functional programming checklists contain required information				
c. the basis of design requirements are in the contract with the designer				
8. Identify commissioning activities that should be included in the scope of work for the design team				

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	Recall	Application	Analysis	Totals
B. Design Phase	**4**	**4**	**2**	**10**
1. Verify the completion of the basis of design and compliance with the owner's project requirements				
2. Supervise the design review process (e.g., comment incorporation, work changes, issue logs, progress reports, checklists, construction documents)				
3. Ensure the inclusion of the commissioning team and requirements in the design process (e.g., communications, meetings, team members, assigned responsibilities)				
4. Manage the commissioning team (e.g., identify specialists, document meeting content, communicate action items, resolve resistance from key members)				
5. Ensure that commissioning activities are included in the contract documents				
6. Ensure the commissioning plan is updated				
7. Analyze cost-benefit values				
8. Ensure the documentation of commissioning process activities				
a. update owner's project requirements				
b. ensure an updated basis of design document is received				
c. define what should be included in the systems manuals				
d. refine training requirements in the contract documents				
e. confirm maintenance and operations capabilities of facilities staff				
C. Construction Phase	**6**	**6**	**3**	**15**
1. Facilitate inclusion of commissioning activities during the pre-bid process				
2. Verify that commissioning activities have been integrated into construction schedules as needed				
3. Ensure the commissioning process and activities are presented during the construction kick-off meeting				
4. Validate execution of the commissioning plan				
5. Resolve commissioning exceptions of approved submittals				
6. Ensure construction checklists are developed and completed				

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	Items			
	Cognitive Level			
	Recall	Application	Analysis	Totals
7. Facilitate the assessment of whether checklists and tests are specific to the project within the commissioning scope e.g., • testing protocols • construction checklists • start-up review • reports validation • resolution of testing issues				
8. Facilitate updating of commissioning documents e.g., • the owner's project requirements • the commissioning plan • logs and reports of issues • the basis of design • record documentation • systems manual • training requirements				
9. Produce progress reports				
D. Occupancy and Operations Phase	**7**	**6**	**2**	**15**
1. Ensure delivery of training for operations and maintenance staff				
2. Assess the effectiveness of training for facilities operations and maintenance staff				
3. Ensure seasonal testing of the facility as required				
4. Evaluate effectiveness of the systems manual				
5. Direct updates to the system manual				
6. Resolve system deficiencies				
7. Convene a lessons learned workshop				
8. Ensure development of an ongoing commissioning program for the facility				
9. Ensure the commissioning authority participates in the evaluation of systems and assemblies performance before the one-year contractor warranty expiration				
10. Ensure the final commissioning report is delivered				

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	Items			
	Cognitive Level			
	Recall	Application	Analysis	Totals
II. THE COMMISSIONING PROCESS FOR EXISTING BUILDINGS	**7**	**10**	**8**	**25**
A. Discovery Phase	**3**	**3**	**2**	**8**
1. Develop the scope of work for the commissioning process for the commissioning authority				
2. Identify the owner's project manager and commissioning authority (e.g., RFQ)				
3. Develop owner's current facility requirements document with the commissioning authority, e.g. • lessons learned from previous projects and existing facility use • project definition • building performance and benchmarks • project budget • definition of project success • maintainability of each system • maintenance and operations capabilities of staff • systems manuals • training and documentation requirements • review of lessons learned				
4. Update the scope of work for the commissioning team				
5. Determine the skill sets required for commissioning team members				
6. Assist development of the initial commissioning process plan				
7. Prepare commissioning process milestones and schedule				
8. Verify investigation checklists contain required information				
B. Investigation Phase	**2**	**2**	**3**	**7**
1. Evaluate recommendations from initial investigation results to determine actions				
2. Determine what service contractors must be engaged to conduct the investigation				
3. Approve performance of a detailed investigation of systems and assemblies that were identified in the commissioning plan				
4. Recommend actions based on documentation of detailed investigation results				

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	Items			
	Cognitive Level			
	Recall	Application	Analysis	Totals
C. Implementation Phase	**2**	**3**	**1**	**6**
1. Coordinate commissioning team				
2. Determine whether a designer's services will be required for the project				
3. Verify that the basis of design requirements are in the contract with the designer				
4. Contribute to the implementation budgeting process				
5. Identify commissioning activities that should be included in the scope of work for the design team				
6. Verify the completion of the basis of design and compliance with the owner's current facility requirements				
7. Supervise the design review process (e.g., comment incorporation, work changes, issue logs, progress reports, checklists, construction documents)				
8. Ensure the inclusion of the commissioning team and requirements in the design process (e.g., communications, meetings, team members, assigned responsibilities)				
9. Manage the commissioning team (e.g., identify specialists, document meeting content, communicate action items, resolve resistance from key members)				
10. Ensure that commissioning activities are included in the contract documents				
11. Ensure the commissioning plan is updated				
12. Analyze cost-benefit values				
13. Ensure the documentation of commissioning process activities				
a. update owner's current facility requirements				
b. ensure an updated basis of design document is received				
c. define what should be included in the systems manuals				
d. refine training requirements in the contract documents				
e. confirm maintenance and operations capabilities of facilities staff				
14. Recommend whether existing staff capabilities will have to be enhanced				

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	Items			
	Cognitive Level			
	Recall	Application	Analysis	Totals
D. Construction Phase	**0**	**1**	**1**	**2**
1. Facilitate inclusion of commissioning activities during the pre-bid process				
2. Verify that commissioning activities have been integrated into construction schedules as needed				
3. Ensure the commissioning process and activities are presented during the construction kick-off meeting				
4. Validate execution of the commissioning plan				
5. Resolve commissioning exceptions of approved submittals				
6. Ensure construction checklists are developed and completed				
7. Facilitate the assessment of whether checklists and tests are specific to the project within the commissioning scope e.g., • testing protocols • construction checklists • start-up review • reports validation • resolution of testing issues				
8. Facilitate updating of commissioning documents e.g., • the owner's current facility requirements • the commissioning plan • logs and reports of issues • the basis of design • record documentation • systems manual • training requirements				
9. Produce progress reports				
E. Occupancy and Operations Phase	**0**	**1**	**1**	**2**
1. Ensure delivery of training for operations and maintenance staff				
2. Assess the effectiveness of training for facilities operations and maintenance staff				
3. Ensure seasonal testing of the facility as required				
4. Evaluate effectiveness of the systems manual				
5. Direct updates to the system manual				
6. Resolve system deficiencies				
7. Convene a lessons learned workshop				
8. Ensure development of an ongoing commissioning program for the facility				

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	Items			
	Cognitive Level			
	Recall	Application	Analysis	Totals
9. Ensure the commissioning authority participates in the evaluation of systems and assemblies performance before the one-year contractor warranty expiration				
10. Ensure the final commissioning report is delivered				
III. THE ONGOING COMMISSIONING PROCESS	**3**	**6**	**6**	**15**
A. Discovery Phase	**1**	**2**	**1**	**4**
1. Develop the scope of work for the commissioning process for the commissioning authority				
2. Identify the owner's project manager and commissioning authority (e.g., RFQ)				
3. Update owner's current facility requirements document with the commissioning authority e.g. • lessons learned from previous projects and existing facility use • project definition • building performance and benchmarks • project budget • definition of project success • maintainability of each system • maintenance and operations capabilities of staff • systems manuals • training and documentation requirements • review of lessons learned				
4. Update the scope of work for the commissioning team				
5. Determine the skill sets required for commissioning team members				
6. Assist development of the initial commissioning process plan				
7. Prepare commissioning process milestones and schedule				
8. Verify investigation checklists contain required information				
B. Investigation Phase	**1**	**1**	**2**	**4**
1. Evaluate recommendations from initial investigation results to determine actions				
2. Determine what service contractors must be engaged to conduct the investigation				
3. Approve performance of a detailed investigation of systems and assemblies that were identified in the commissioning plan				

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	Items			
	Cognitive Level			
	Recall	Application	Analysis	Totals
4. Recommend actions based on documentation of detailed investigation results				
C. Implementation Phase	**1**	**1**	**1**	**3**
1. Coordinate commissioning team members				
2. Determine whether a designer's services will be required for the project				
3. Verify that the basis of design requirements are in the contract with the designer				
4. Contribute to the implementation budgeting process				
5. Identify commissioning activities that should be included in the scope of work for the design team				
6. Verify the completion of the basis of design and compliance with the owner's current facility requirements				
7. Supervise the design review process (e.g., comment incorporation, work changes, issue logs, progress reports, checklists, construction documents)				
8. Ensure the inclusion of the commissioning team and requirements in the design process (e.g., communications, meetings, team members, assigned responsibilities)				
9. Manage the commissioning team (e.g., identify specialists, document meeting content, communicate action items, resolve resistance from key members)				
10. Ensure that commissioning activities are included in the contract documents				
11. Ensure the commissioning plan is updated				
12. Analyze cost-benefit values				
13. Ensure the documentation of commissioning process activities				
a. update owner's current facility requirements				
b. ensure an updated basis of design document is received				
c. define what should be included in the systems manuals				
d. refine training requirements in the contract documents				
e. confirm maintenance and operations capabilities of facilities staff				
14. Recommend whether existing staff capabilities will have to be enhanced				

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	Cognitive Level			
	Recall	Application	Analysis	Totals
D. Construction Phase	**0**	**1**	**1**	**2**
1. Facilitate inclusion of commissioning activities during the pre-bid process				
2. Verify that commissioning activities have been integrated into construction schedules as needed				
3. Ensure the commissioning process and activities are presented during the construction kick-off meeting				
4. Validate execution of the commissioning plan				
5. Resolve commissioning exceptions of approved submittals				
6. Ensure construction checklists are developed and completed				
7. Facilitate the assessment of whether checklists and tests are specific to the project within the commissioning scope e.g., • testing protocols • construction checklists • start-up review • reports validation • resolution of testing issues				
8. Facilitate updating of commissioning documents e.g., • the owner's current facility requirements • the commissioning plan • logs and reports of issues • the basis of design • record documentation • systems manual • training requirements				
9. Produce progress reports				
E. Occupancy and Operations Phase	**0**	**1**	**1**	**2**
1. Ensure delivery of training for operations and maintenance staff				
2. Assess the effectiveness of training for facilities operations and maintenance staff				
3. Ensure seasonal testing of the facility as required				
4. Evaluate effectiveness of the systems manual				
5. Direct updates to the system manual				
6. Resolve system deficiencies				
7. Convene a lessons learned workshop				
8. Ensure development of an ongoing commissioning program for the facility				

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	Items			
	Cognitive Level			
	Recall	Application	Analysis	Totals
9. Ensure the commissioning authority participates in the evaluation of systems and assemblies performance before the one-year contractor warranty expiration				
10. Ensure the final commissioning report is delivered				
Totals	**33**	**40**	**27**	**100**

Renewal Requirements for ASHRAE Certification Programs

Each Certificant is required to renew his/her certification every three years. The renewal process includes submittal of a renewal fee ($125 for members, $195 for non-members) and evidence of earning 45 ASHRAE Continuing Education (ACE) units during each three-year renewal period.*

The three-year renewal period starts on December 31 of the year in which the Certificant earns the certification. For example, a Certificant who earns the certification anytime in 2008 will have a renewal deadline of December 31, 2011.

Individuals who fail to submit renewal fees and evidence of the required ACEs by the December 31 deadline will be considered as "non-renewing," notified accordingly, and advised to cease using the specific certification designation after their names. The names of non-renewing Certificants will be removed from the list of Certificants on ASHRAE's website.

To be reinstated, non-renewing Certificants must submit the renewal fee, a reinstatement fee ($60), and evidence of the required ACEs by December 31 of the year following their active status. After that date, non-renewing Certificants must follow the same process as that for the initial application. Extenuating circumstances will be reviewed on a case-by-case basis by the Committee.

Acceptable Methods of Obtaining ACE credits

Type	Credits
Successful completion of a course in a related field from an accredited institution of higher learning Note: To qualify for this credit, a course must be offered regularly and must conclude with a test that sets a passing grade.	15 ACEs per credit hour (semester system) OR 10 ACEs (quarter system)
Patent Note: Credit can be claimed after a patent is issued and the inventor submits details to the board. The invention must be related to engineering.	10 ACEs
Publication of article/paper/book in recognized peer reviewed journal in relevant field (max. 3 per year). Note: A "news" article in a technical or professional bulletin is not considered a published paper.	10 ACEs per published item
Active participation in a professional or technical society relevant to the field Note: The certificant must serve as an officer and/or must actively participate in a committee of the organization. PDH credits are earned at the end of each year of service.	2 ACEs per year per organization
Writing ASHRAE certification exam items in relevant field	5 ACEs per exam
Accreditation Visit Evaluator (or ASHRAE approved equivalent)	3 ACEs per year
Professional awards	2 ACEs per award
Teaching of approved courses and workshops in relevant field Note: Teaching credit is valid for teaching a course or seminar for the first time only. It does not apply to faculty performing regular duties.	ACEs are determined by multiplying by two (2) the total number of course hours (for preparation time).
Attendance at meetings and conferences (e.g. National, Annual, Regional) or special conferences relevant to the field	Qualifying seminars and workshops will be based on one ACE unit for each hour of attendance.
Attendance and completion of approved short courses and other continued education activities in relevant field	Qualifying seminars and workshops will be based on one ACE unit for each hour of attendance.

*Certificants are not required to submit a report of Professional Development activities as part of certification renewal. A percentage of Certificants are randomly chosen for audit each year. If audited, a report of continuing professional development with documentation must be submitted to the Certification Coordinator for review.

Activities that qualify for ASHRAE's Continuing Education units **might** also qualify for continuing education credits (e.g., PDHs, CEUs, or LUs) from other credentialing bodies or organizations. The individual is responsible for contacting the relevant governing body to determine whether an activity qualifies for that body's continuing education credit.

For questions about any of the information about ASHRAE's certification renewal requirements, including clarification of acceptable and reportable qualifying activities, please contact ASHRAE's Certification Coordinator at certification@ASHRAE.org.