Refrigerating Engineers & Technicians Association

Certification Information for:

Certified Refrigeration Energy Specialist (CRES)

Information Handbook and Application Form

RETA is fully committed to maintaining the fairness, impartiality, validity and integrity of all RETA certification programs. RETA policies and procedures are designed to assure that all decisions about certifying every candidate are based solely on the candidate's qualifications and performance on RETA examinations and other certification-related activities.

Valid for examinations offered January 1, 2016 through December 31, 2016

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The Refrigerating Engineers and Technicians Association does not discriminate on the basis of age, sex, race, creed, disabling condition, religion, national origin, or any other protected characteristic.

Introduction to the CRES Handbook

The Refrigerating Engineers and Technicians Association (RETA) was established in 1910. RETA's mission is to enhance the professional development of industrial refrigeration operators and technical engineers.

Certification is a process that recognizes an individual's qualifications and demonstrated knowledge. The RETA certification program was first offered in 1988. RETA supports four certification programs.

Certification is based on knowledge shown by meeting designated eligibility requirements and passing the certification examination. The certification process helps individuals improve their skills and provides employers with a benchmark for evaluating job applicants and employees. Certification provides third-party validation that an operator or assistant operator has met standard requirements for experience and knowledge.

Objectives

The objectives of the certification program are:

- To establish a nationally recognized standard of experience, education, and training for refrigeration plant operators and supervisors.
- To assist the refrigeration industry in developing and recognizing qualified refrigeration plant operators and supervisors.
- To encourage technical training and education, as well as practical experience, for refrigeration plant operators and supervisors.
- To promote safety in industrial refrigeration facilities.
- To increase public recognition of the skills needed in the industrial refrigeration field.

RETA Certification Programs

RETA Credential	**Certification Criteria**	**Initial Requirements**
Certified Assistant Refrigeration Operator (CARO)	Show entry-level knowledge needed to ***assist in refrigeration system operations under supervision***	Score 70 or higher on the CARO exam
Certified Industrial Refrigeration Operator (CIRO)	Show knowledge needed to ***supervise refrigeration system operations***	Two years' experience plus score 70 or higher on the CIRO exam
Certified Refrigeration Energy Specialist (CRES)	Show knowledge required to ***manage energy efficiency in refrigeration systems and facilities***	Score 70 or higher on the CRES exam plus Document five Energy Efficiency Activities
RETA-Authorized Instructor (RAI)	Show ability to ***teach industrial refrigeration*** operations	Show evidence of teaching industrial refrigeration plus Score 80 or higher on the RAI exam

How to prepare for these examinations

RETA publishes a series of books to help refrigeration operators gain the knowledge required to operate industrial refrigeration systems safely and efficiently. Other sources also are available to help candidates master these concepts and skills. Candidates may choose among many paths and resources to help them qualify for a RETA credential.

RETA provides study guides and other resources to help candidates prepare for to qualify for a RETA credentialing examination. The study guides can be downloaded free from the RETA website. A candidate may register and pay the required fee for Book Tests and Practice Tests with a credit card before or after he or she has applied for the CARO, CIRO, CRES or RAI credential.

Book Tests

These are offered as final exams to verify completion of a course. A passing score on these book tests can be used to earn Professional Development Hours (PDs) toward recertification.

- **IR-1 Book Test** This is the Final Exam for Industrial Refrigeration 1. The cost is $25 per attempt. You may purchase the test independently of the book at any time.
- **IR-2 Book Test**) This is the Final Exam for Industrial Refrigeration 2. The cost is $25 per attempt. You may purchase the test independently of the book at any time.

Study Guides

RETA created Study Guides to help candidates prepare to perform well on CARO, CIRO and CRES. Each Study Guide can be downloaded free from the RETA website. Study Guides include reference information that will be needed to answer questions during each test. These references will appear on-screen during each test. ***Candidates are not allowed to use these study guides during a RETA certification examination.*** Candidates should become familiar with these references for the RETA credential they are working toward before taking the test***.***

- The **CARO Study Guide** provides references candidates will need to be familiar with to answer questions on the CARO examination.
- The **CIRO Study Guide** provides references and screens that candidates will need to be familiar with to answer questions on CIRO exam. This Study Guide also illustrates how to use data in CIRO screens to evaluate and resolve problems in refrigeration system operations.
- The **CRES Study Guide** provides references and screens that candidates will need to be familiar with to answer questions on the CRES exam. This Study Guide also illustrates how to use data in CRES screens to evaluate and resolve problems in refrigeration system operations. It also provides source information that support for other questions on the CRES exam. CRES candidates need to review this information to be able to answer these questions, but they do not have access to the CRES Study Guide during the full examination.

Practice Tests

- The **CARO Practice Test** is available for $59 per attempt. It includes questions like those that will appear on the full CARO Examination. The CARO Practice Test also uses the same the onscreen references that will appear onscreen for the full CARO examination.
- The **CIRO Practice Test** is available for $59 per attempt. It includes questions like those that will appear on the full CIRO Examination. The CIRO Practice Test also uses the same the onscreen references that will appear onscreen for the full CIRO examination.

RETA Study Guides

You will improve your chances of earning your RETA credential by treating the Study Guide for your exam as you would the technical manuals in a refrigeration facility where you work. Just as your job requires that you know what is in operating manuals and when to refer to them to understand or resolve a problem, the test requires that you know what is in the References document and when to use it. ***You will not be told when to use the references for this test.***

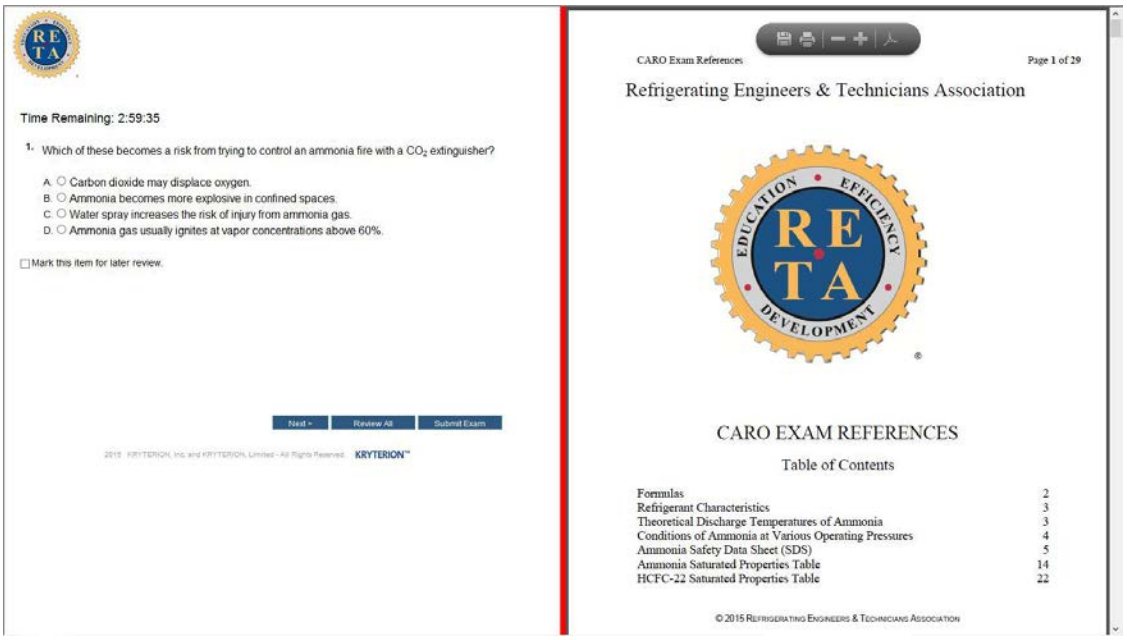
Using RETA References On-Screen

References for each RETA test are in a PDF that appears on the screen next to test questions. You will have the following tools for using the PDF.

- Move the red vertical line separating the two sections from side to side to assign more screen space to the References or to questions.
- Zoom in or out to make pages in the References PDF larger or smaller by clicking on the plus (+) or minus (-) symbols at the top of the screen. This tool bar disappears after a few seconds. The toolbar reappears when you move the mouse over the References document.
- Scroll from page to page to find the location in the References that has the table, formulas or other information you want to use.

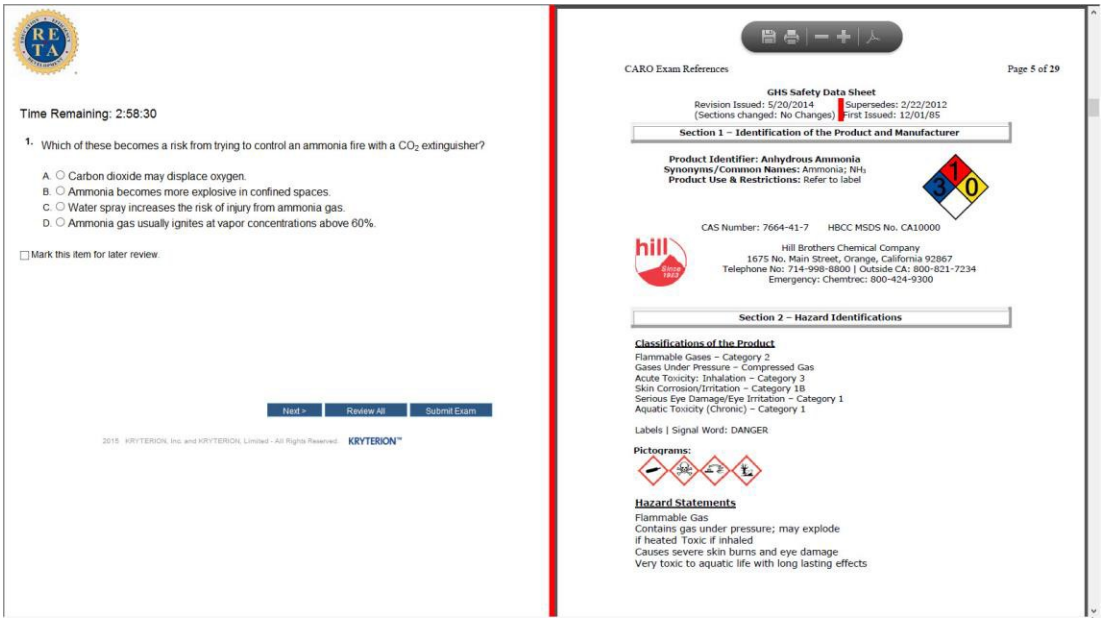
The following screens show how this will work during the test.

Screen 1 The sample question asks about controlling an ammonia fire. The References document title page appears on the right side of the screen.

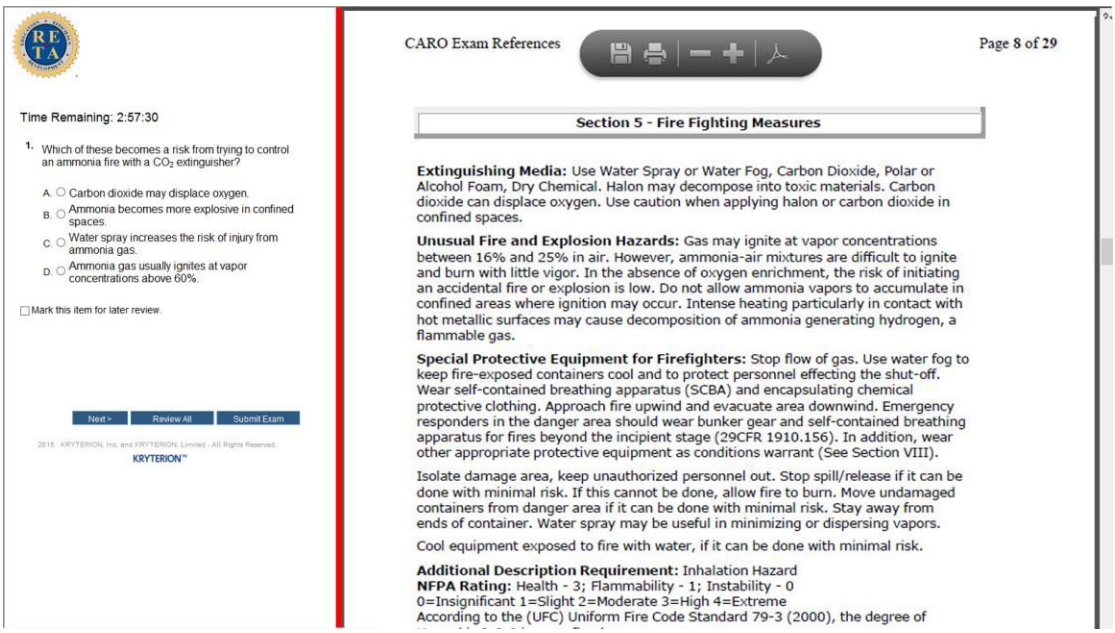


The toolbar at the top of the References document allows you to zoom in and zoom out by clicking the plus (+) or minus (-) symbols. The toolbar disappears after a few seconds. The toolbar reappears when you move the mouse over the References document. You cannot use the save or print functions in the toolbar during the test. If you click on those icons, you need to click “Cancel” in the menu that appears for either function to return to References.

Screen 2 Information to help answer the question appears in the Ammonia SDS. Scroll to the opening page of the SDS.



Screen 3 The answer to the question appears in the first paragraph of Section 5, Fire Fighting Measures, in the ammonia SDS. In this screen the vertical red line has been moved to the left to increase the screen space assigned to the References document.



Calculators

All the calculations required in this test can be completed with a simple calculator. A scientific calculator is ***NOT*** required to perform well on this examination. You are permitted to bring a simple non-printing calculator to the test, but you will be required to clear the calculator memory before you may take any calculator into the testing room.

Eligibility for RETA Certification

No individual is eligible for RETA certification unless he/she is in compliance with the RETA Code of Conduct that appears on page 8 of this Handbook. RETA may deny, revoke, suspend, or otherwise act upon certification or membership of any individual who is not in compliance with the RETA Code of Conduct.

1. The individual must truthfully complete and sign the RETA application for certification and shall provide additional information as requested. All documents and information provided to RETA as part of the certification process are the property of RETA and will not be returned.
2. All RETA members, certification candidates and certificate holders agree to waive all claims against and will hold harmless RETA, its staff, volunteers and agents which arise out of or relate to any RETA investigation and review of alleged violations of the RETA Code of Conduct.

Certified Refrigeration Energy Specialist (CRES) Purpose

The Certified Refrigeration Energy Specialist (CRES) is a technical-level examination designed to identify whether a person has the knowledge to function safely in an engine room and recognize energy reduction opportunities in and around the system.

Description of CRES Requirements

The Refrigerating Engineers and Technicians Association (RETA) launched a new credentialing program for Certified Refrigeration Energy Specialist (CRES). This is a knowledge based credential that includes documentation of **performance** (practical) energy saving project activities. Acquiring the credential requires four steps.

1. Apply to RETA documenting training, education and experience working with refrigeration systems and energy management.
2. Pass the CRES examination which measures knowledge of refrigeration systems and energy management techniques and strategies.
3. Document and submit five energy-saving activities to RETA to demonstrate energy-related efforts in refrigeration system operations and facilities.
4. Receive RETA approval of the results of the five energy management projects activities.

The CRES credential will remain valid for three years. Recertification is required every three years. ***A person is not CRES-certified until all CRES requirements have been approved by RETA.***

CRES Written Test Specifications

The Northwest Energy Efficiency Alliance (NEEA) has collaborated with RETA to create a training program that is designed to assist CRES candidates in preparing to meet these criteria. The course is not mandatory. Candidates may complete comparable training and experience as part of their qualifications for CRES certification.

CRES certification requires demonstrating mastery of the following topics.

- ***Refrigeration Systems***, including knowledge of system *safety,* components, functions, measurement, monitoring, and concepts required for effective *operation.*
- ***Knowledge and expertise in the requirements of*** Process Safety Management (PSM) and Risk Management Program (RMP) regulations *is included*.
- ***Energy Efficiency Basics,*** including energy measurement concepts, calculations and conversions, ***recognizing*** energy efficiency opportunities in refrigeration systems, measuring and tracking energy use, and energy mapping to document energy efficiency and savings in refrigeration systems and facilities.
- ***Refrigeration Best Practices,*** including instrumentation and calibration, automated controls and operations, monitoring and interpreting systems operations data, design and sizing system components, managing defrost cycles, and managing refrigeration loads.
- ***Other Systems,*** including opportunities to improve energy efficiency using non-refrigeration systems such as lighting, compressed air and pumps.
- ***Facility Energy Management,*** including elements and strategies for effective energy management, setting and monitoring performance indicators to measure improvements in energy efficiency, and creating incentives and opportunities to improve energy efficiency.

Do I Need to Study Anything to Take the Test?

CRES assesses your knowledge of energy usage in industrial refrigeration and other facilities. Refrigeration theory, process and safety in and around a system is tested in addition to energy management concepts. You may take CRES without purchasing or reviewing RETA references or other source materials, but your chances of meeting RETA certification standards may improve if you review appropriate information before taking the test. Completing a study course does not guarantee success of passing any RETA certification test.

CRES Examination Study Materials

The CRES examination is based on concepts presented in the following texts available from RETA:

- *Industrial Refrigeration I*
- *Industrial Refrigeration II*
- *Industrial Refrigeration III*
- *Industrial Refrigeration IV*
- *Basic Electricity 1*
- *Basic Electricity 2*
- *Industrial Refrigeration Best Practices Guideline* (Cascade Energy Engineering)
- *Industrial Refrigeration Consortium Energy Conservation Guideline* (University of Wisconsin – Industrial Refrigeration Consortium)

Other publications are available that introduce the content areas examined in the CRES test. RETA does not endorse or guarantee that all content areas in the CRES exam are covered in these materials. See the last page of this handbook for a list of alternative study references and training options.

CRES Exam References

The test consists of 135 multiple-choice items. You will have 3 hours to complete the test, which is given only in English. You must achieve a scaled score of 70 or higher to pass the examination.

All CRES Exam References will appear on-screen during the test. A CRES Study Guide provides copies of these references for your use in preparing to take this test. The CRES Exam Study Guide is available at www.reta.com, but you may not use the study guide during the test.

YOU ALSO MUST SURRENDER ANY NOTES YOU MAKE DURING THE TEST BEFORE YOU LEAVE THE TEST CENTER

The examination format includes independent questions and scenarios based on generic screens. The supplemental package will be collected by the proctor after you have finished testing.

You should bring a non-printing calculator to the test. ***The Proctor must observe you clearing the calculator memory before you will be permitted to use it during this test.***

CRES Examination Content

The following content areas are in the CRES examination.

Content Description	Share of test
• Refrigeration system concepts, components and functions in safe operations, including performance, measurement, Process Safety Management (PSM) and Risk Management (RM)	29 questions
• Energy Efficiency Basics: Concepts, calculations, conversions, efficiency opportunities, measuring and tracking energy use, energy mapping	20 questions
• Refrigeration Best Practices: Instrumentation, calibration, controls, design and sizing characteristics, defrost cycles, refrigeration loads	50 questions
• Managing non-refrigeration system energy use such as lighting, compressed air and pumps	14 questions
• Facility Energy Management: Set and monitor key performance Indicators, measurement to improve energy efficiency, creating incentives and opportunities to improve energy efficiency	22 questions

These topics are supported by refrigeration industry surveys and continuous reviews by the RETA Certification Committee.

CRES Application and Examination Fees

	RETA Member	Non-member
Application & Exam Fee	**$495**	**$695**
Retest Fee	**$260**	**$365**
Late Fee for Rescheduling less than 96 hours before exam	**$125**	**$125**

How Each Examination is Given

RETA offers the examinations through a computer based administration company. There are more than 400 centers in the United States. The Certification Page of the RETA website helps you find the test center closest to your area.

The test center uses computers on which you take the exam. Each question in the CRES exam is multiple choice. You answer each question by clicking the response you think is correct.

The application form is available on the RETA website (www.reta.com). You may download and print this application form to apply. After you fill out the application form, send it and the money to pay for the test to RETA Headquarters. RETA staff will review the form and contact you if there are any corrections or clarifications required.

After everything is completed and verified, RETA Headquarters will send you an email with instructions to schedule an exam.

Candidate Behavior during RETA Certification Examinations

You must bring TWO forms of identification with you when you appear to take your exam. Proctors must verify that you are the same person who applied for the CRES credential. You need a second signature that matches the one in your primary identification (usually a driver's license, passport or other government-issued photo ID). Be sure that you have signed the reverse side of your credit card if you plan to use that as a second form of ID.

Any use of unauthorized materials during administration of a RETA certification examination may result in immediate disqualification and an automatic failing score. RETA may withdraw eligibility for certification from any candidate who uses prohibited materials during an examination, has any unauthorized contact with anyone other than test center staff during an examination, or engages in other unethical, disruptive or unprofessional behavior at a test center.

In order to protect the validity and security of RETA testing and certification programs, misconduct or suspicious circumstances may render a test score invalid. If doubts are raised about a score because of these or other circumstances, RETA expects cooperation in any RETA investigation of possible violations of test validity and security. RETA reserves the right to cancel any exam score if, in the sole opinion of RETA, there is adequate reason to question its validity. RETA, in its discretion, may offer the individual an opportunity to take the examination again at no additional fee, offer the individual an opportunity to take the examination again including payment of all fees, or proceed with disciplinary action as described in these procedures. Following any administrative exam irregularities, the Executive Director, on advice from the Consulting Psychometrician, will review the matter and decide whether to cancel scores, and whether the candidate may be offered a retest at RETA expense or at his/her expense. Such actions may be subject to appeal as described in these procedures.

RETA Code of Conduct

The RETA Code of Conduct sets the professional standards required of all RETA members and certificate holders. RETA certification and membership affirms your agreement to abide by these standards to advance the integrity, honor and prestige of all persons and organizations in the refrigeration industry. By submitting the CRES application, you agree to follow the RETA Code of Conduct and to strive to meet the following professional standards of behavior:

1. I recognize the urgency of protecting the health and safety of all personnel in refrigeration facilities and the public and agree to safely handle and operate refrigeration equipment and supplies at my level of knowledge, skill and experience.
2. I accept responsibility for assuring that those persons for whom I am responsible will be qualified by training, education and experience to operate the specific equipment in the refrigeration facility at which I am employed.
3. I will promote training and education of those refrigeration personnel with whom I come in contact to assure that they are qualified to maintain and improve the safety and energy-efficient operation of refrigeration facilities for which they have any responsibility.
4. I accept responsibility for my own continued professional development as well as that of those I supervise and will participate in appropriate certification and training activities to acquire, demonstrate and maintain competence in the refrigeration industry.
5. I will comply with all laws, rules and regulations that apply to safe operation of refrigeration facilities.
6. I will act responsibly and with integrity in all refrigeration industry and RETA activities by adhering to high standards of professional conduct to protect the health and safety of employees, employers, the public and all others affected by refrigeration facilities and practices.
7. I will avoid conduct or practices that could discredit the refrigeration industry like deceiving or harming employees, employers or the public.
8. I will provide accurate and truthful information related to all aspects of my RETA membership, certification and refrigeration training and experience.
9. I will follow all requirements established by RETA regarding references to my RETA certification and membership when describing my qualifications, training and experience in the refrigeration industry.
10. I will cooperate with RETA in any investigation of test security, validity, conflicts of interest or possible violations of the RETA Code of Conduct that warrants my participation.
11. I will maintain open and constructive relationships with those governmental and regulatory authorities relevant to the refrigeration industry with the intent of fostering an atmosphere of mutual trust and respect on behalf of myself and those for whom I am professionally responsible.
12. I will refuse to engage in any behavior that could be perceived as a threat to the health and safety at refrigeration facilities, of other employees and the public. This includes but is not limited to problems with chemical dependency, substance abuse, verbal threats or physical violence that could adversely affect the safety of refrigeration facilities.
13. I will support RETA local chapters to advance local influence and adherence to the RETA Code of Conduct.
14. I agree to inform RETA without delay of any changes that restrict my capacity to perform competently, safely and effectively without endangering the welfare of myself or others if I can no longer fulfill my obligations as a RETA-credentialed professional

Adhering to the RETA Code of Conduct

All activities of the Refrigerating Engineers and Technicians Association (RETA) shall be conducted with policies and procedures consistent with RETA Bylaws and the RETA Code of Conduct. The RETA Code of Conduct shall apply to all RETA members, directors, officers, staff, task force members, certification candidates, certificate holders, employees and consultants. The RETA Code of Conduct is intended to maintain the confidence and respect of industry employers and their employees. It also is intended to protect the public's health and safety as well as every person in a position of responsibility in the refrigeration industry.

Disciplinary Action

RETA may reject or suspend the eligibility of any certification candidate, suspend or revoke the certification of any certificate holder, or refuse to recertify any person who is found to have engaged in any of the following violations or any part of the RETA Code of Conduct:

1. Obtaining or seeking to obtain RETA certification through submission of fraudulent, misleading or untruthful statements or documentation of qualifications, training and experience.
2. Unauthorized possession or use of RETA examination materials in any form, including but not limited to recreating from memory, copying, posting on any website, reproducing or disclosing to others any examination question or test-related materials or content not released by RETA to all certification candidates.
3. Any conviction for criminal acts in connection with activities for which the individual is certified by RETA, including but not limited to drug- or alcohol-related offenses which could make the RETA-certified individual a possible threat to the health and safety of refrigeration facilities, other employees and the public.
4. Unauthorized or illegal use of any registered certification mark or logo owned by RETA.

RETA Disciplinary Policy and Procedures (available on the RETA website) provide detailed information for bringing charges and for hearings and appeals related to disciplinary charges.

Completing the CRES Application

Your RETA membership must be current at the time of application in order to qualify for the member rate. If your company is a corporate member, you (the certification applicant) must be one of the company's designated members to qualify for the member rate.

1. Complete all sections of the application
2. Print or type all information except your signature.
3. If you are an RETA member, attach a photocopy of your current membership card to the application. This photocopy assists staff to ensure the correct processing of your application.
4. Include the appropriate application fee in the form of personal or company check, money order, or credit card information. Make your check payable to Refrigerating Engineers & Technicians Association. Purchase orders are accepted, but a test cannot be scheduled until the purchase order has been paid by the company.
5. Mail the application form with attachments and your payment to:

   RETA Certification
   1035 Second Avenue SE
   Albany, OR 97321
6. **ALL RETA CERTIFICATION APPLICATIONS EXPIRE AFTER ONE YEAR UNLESS YOU REQUEST A 90-DAY EXTENSION BEFORE THE END OF YOUR ELIGIBILITY PERIOD. YOU FORFEIT YOUR EXAM FEES IF YOU DO NOT MEET THIS REQUIREMENT.**
7. Your application is incomplete until all information is provided and your fees are paid. You will be informed of any steps needed to take to complete your application. No test can be scheduled until these steps are completed. RETA reserves the right to verify the eligibility of any applicant.

Returned Check Fee

Any applicant whose personal check is returned for insufficient funds is required to pay a $35 penalty. Remittance of fees thereafter must be by money order or certified check.

Test Authorization Code

When your application is approved and all required fees are paid, you may schedule your exam. After you select a test location and date, you will receive an email from RETA that includes your examination authorization code. You will choose the location and will make an appointment with the test center. You will not be admitted to the examination without your test authorization code and photo identification.

Scheduling an Examination

Test center appointments are scheduled through RETA. Contact RETA on business days between 8:00 am and 4:30 pm, Pacific Time. Be prepared to commit to securing a location, date and time before you call RETA. Most Kryterion® test centers have from 2 to 4 test stations available at a time. Staff will do their best to find a site and time that suits your needs.

Rescheduling an Examination

Candidates who need to reschedule a test must do so no less than four business days (96 hours) before the scheduled date of their test. **Tests that are rescheduled after the 96 hour deadline will require a processing fee of $125 to cover the charges that RETA will be charged by the testing company.**

Taking the Test and Receiving Your Scores

Each question will appear on the test center screen one at a time. You can record your answer to each question, skip the question, or mark it for review. You can review questions you have skipped or marked for review at any time. After you indicate that you have finished answering and reviewing questions, you may end the test. The test will end automatically if your time expires.

After you finish the test a short survey will follow to gather information about your RETA testing experience. **This is the best place to inform RETA about any concerns you might have** about the exam content or problems that might occur while taking the exam. RETA uses this input to improve the exam. You are encouraged to participate.

You will be notified of your examination results immediately after the examination. A preliminary score report will be given to you at the testing center after you have taken the exam. Some but not all testing centers are capable of giving you a printed results report.

Your score report will tell you whether you passed or failed the examination, the percent of questions answered correctly and section subscores. This report is e-mailed to you directly after you take the exam (this is one reason that it is essential that you have a valid e-mail address). A follow up report and your certificate will be mailed to you by Headquarters.

Absence or Late Withdrawal

You will forfeit all fees if you fail to show at the test center at the appointed time without rescheduling at least four business days before your scheduled test date. If you withdraw your application for RETA certification at least five business days before your scheduled test date, **you may request a refund of up to half the RETA application fee.** If you are not able to test, you may not transfer your registration to another candidate.

Re-Examination

If you do not pass the examination, you may take the examination again within one year following your initial test for $260 for members and $365 for non-members. To do so, you must submit a new application and fee. Minimum time between testing sessions is two weeks to allow for arrival of a new CRES Supplement by US Postal Service delivery service. **YOU WILL HAVE 90 DAYS AFTER APPROVAL AND PAYMENT OF FEES TO SCHEDULE AND COMPLETE A NEW TEST.**

Confidentiality and Public Information

To ensure the security of the examination, the test materials are confidential and individual results will not be released to any person or agency except the candidate and RETA. A candidate's individual test results will be released to others only upon the candidate's written request. **To avoid the possibility of a release of your test results to others it is necessary that you provide RETA an email address that you control.** The instructions and communications, including test results, are emailed to the address you provide. If you use some other person's email address as the contact address for you, they may have access to your results information.

When an operator has achieved RETA certification, that fact is considered public information. It is RETA's policy to verify certification upon request. RETA does not provide information about certification status other than whether an individual is certified.

Comments about Your Test Experience

All candidates have the opportunity to comment about their RETA testing experience, the test center, and the test in a short survey at the end of each examination. All candidate comments are reviewed by the RETA psychometrician and the RETA Certification Committee.

Comments about Test Questions

Any candidate may request a review of the validity of a question on a RETA examination in their comments at the end of each examination period by listing the question number and describing why he/she thinks the question warrants further review. All questions on each RETA certification exam have been validated by the RETA Certification Committee and RETA's psychometrician (testing consultant). Candidate comments about any RETA exam question result in further review and revalidation of the question.

RETA also conducts periodic statistical reviews of candidate performance on each question. Even if no candidate(s) comment about a question, this performance data may trigger review and revalidation of a question. If changes in a question are justified during these reviews, all scoring adjustments are applied automatically to all candidate scores. Revised score reports are issued to any candidate whose status changes from fail to pass as a result of these procedures.

Appealing Scores

An appeal procedure is available to individuals who wish to contest an adverse decision made by RETA.

Candidates do not have the right of appeal of actions: (1) resulting from failure to meet published procedure(s), or (2) based on RETA's actions in setting a passing score which resulted in the individual's failure to pass the certification examination.

Candidates may appeal the results of an examination in writing via U.S. Mail, facsimile or E-mail to RETA headquarters within 14 calendar days after their examination date. RETA will respond in writing to all appeals after review of the candidate's results by the RETA Certification Committee.

Improper Use of RETA Identification and Certification

RETA examinations and their content are the property of RETA. These examinations are available only to those persons who desire in good faith to become certified by meeting RETA certification requirements. By applying for RETA certification, each candidate agrees to the following provisions.

1. All RETA examinations, certificates, cards, logos, patches and emblems and the names Certified Assistant Refrigeration Operator (CARO), Certified Industrial Refrigeration Operator (CIRO), Certified Refrigeration Energy Specialist (CRES) and RETA Authorized Instructor (RAI) are property of RETA and may not be used in any way without the express written consent of RETA. Individuals who pass current RETA examinations must comply with RETA rules in all references to RETA certification.
2. Refrigeration professionals may use the CARO, CIRO, CRES or RAI designations when they meet all requirements established by RETA. A RETA certificate holder has demonstrated expertise gained from study, training and experience in the safe handling of materials and safe operation of refrigeration equipment and facilities.
3. Any individual RETA suspends, reprimands, limits or revokes from RETA certification or authorization due to failure to meet RETA requirements shall immediately relinquish, refrain from using and correct at their own expense any outdated, inaccurate or otherwise inappropriate use of any RETA certificate, card, logo, patch, emblem, and references to CARO, CIRO, CRES and any other RETA certification programs or credentials.
4. If the individual refuses to relinquish immediately, refrain from using and correct at his or her expense any misuse or misleading use of such items when requested, the individual agrees that RETA shall be entitled to obtain injunctive relief, damages costs and attorney's fees incurred in obtaining any such or other relief

Requests for Special Accommodations

Candidates who are unable to complete a RETA certification examination under standard conditions must submit documentation to support their request for special accommodations. This request must specify the modifications of the examination procedure that they believe are appropriate and must be submitted with the initial application for RETA certification or recertification. RETA will evaluate each request to determine that it does not interfere with the candidate's ability to perform the work of certified refrigeration professional.

Any special accommodations must meet the criteria defined by the Americans with Disabilities Act (ADA). Candidates who qualify for such arrangements should be able to document similar steps that were part of their prior training and testing experiences. ADA also requires that RETA determine that a candidate who receives such accommodations must still demonstrate the ability to safely and effectively perform the duties required to qualify for the credential being awarded. ADA does ***NOT*** allow special accommodations that would substantially alter the skills required to perform a job or could limit a candidate's ability to protect the health and safety of employees and the public.

Test centers may accommodate candidates with disabilities that interfere with test taking. Confirm with the testing center that they have the necessary fixtures and facilities to address your specific needs.

Changes in Certification Criteria

RETA may approve changes in these certification requirements at its discretion. The current version of this Handbook constitutes notice of these changes to applicants, candidates and certified persons. RETA policies at the time a candidate is initially certified remain in effect for the three-year term of certification. Any new or amended requirements must be met at the time a candidate applies for recertification.

Renewal of Certification

The RETA Code of Conduct requires all RETA certificate holders to participate in appropriate certification and training activities to acquire, demonstrate and maintain their competence in the refrigeration industry. Each RETA certificate expires three years after it is issued. Recertification candidates may establish that their knowledge and skills are still current for their level of RETA certification either by taking the then current examination for that classification or by providing RETA with the required documentation of his/her qualifications for recertification.

Continuing education credits can be earned by documenting participation in professional training related to RETA certification at RETA chapter meetings, the RETA Annual Meeting, employer-sponsored training and refrigeration training seminars.

Your RETA membership must be current at the time of application in order to qualify for the member rate. If your company is a corporate member, the certification applicant must be one of the company's designated members to qualify for the member rate.

The RETA Code of Conduct requires all RETA certificate holders to participate in appropriate certification and training activities to acquire, demonstrate and maintain their competence in the refrigeration industry. Each RETA certificate expires three years after it is issued. Recertification candidates may establish that their knowledge and skills are still current for their level of RETA certification either by taking the then current examination for that classification or by providing RETA with the required documentation of his/her qualifications for recertification.

Continuing education credits can be earned by documenting participation in professional training related to RETA certification at RETA chapter meetings, the RETA Annual Meeting, employer-sponsored training and refrigeration training seminars.

Your RETA membership must be current at the time of application in order to qualify for the member rate. If your company is a corporate member, the certification applicant must be one of the company's designated members to qualify for the member rate.

The CRES credential expires three years after the date it is awarded by RETA.
Renewal of a CRES credential for another three years requires:

- Completion and documentation of six additional energy efficiency activities
- At least three of the six new energy efficiency activities must document direct energy savings in one or more refrigeration facilities.
- Documentation of 24 Professional Development Hours (PDHs) related to energy use in refrigeration systems

PDH Requirements

Continuing education credits can be earned by documenting participation in professional training related to RETA certification at RETA chapter meetings, the RETA Annual Meeting, employer-sponsored training and refrigeration training seminars.

Training is measured in Professional Development Hours (PDHs) as determined by RETA. CARO and CIRO recertification requires 24 PDHs relevant to the practice of refrigeration operation / service / repair / maintenance / engineering. One PDH can be earned for 50 minutes of instruction or participation. If a program awards continuing education units (CEU) rather than professional development hours, one CEU equals 10 professional development hours of class in an approved continuing education course. Documentation of PDHs for recertification may be submitted in the RETA Recertification Database or with a completed recertification application.

Professional development activities may include:

- Successful completion of a college or university course in the area of refrigeration operating / servicing / installation, related sciences*, and engineering ethics. RETA will award PDHs based on a transcript documenting successful completion of any such course(s).
- Successful completion of professional engineering courses or programs in which professional development hours are earned.
- Successful completion of refrigeration operating programs, seminars, tutorials, workshops, short courses, on-line or in-house courses.
- Completing classes using RETA course books can earn 20 PDHs after the candidate passes a RETA examination on the content of the course.
- Attending program presentations at related technical or professional meetings, including the RETA Annual Conference.
- Teaching or instructing. Teaching credit is valid for teaching a course or seminar for the first time only. Two PDHs may be earned for every hour of teaching.
- Authoring papers or articles that appear in nationally circulated journals or trade magazines or presented to a professional society or organization. A maximum 10 PDHs per paper or presentation per renewal are allowed for this activity;
- Active participation on a RETA committee or holding an office in a Chapter as an elected officer. Two PDHs will be awarded per committee membership or office held. A maximum of 8 PDHs may be accepted per renewal period.

PDH programs, activities and course requirements

- Each approved course, program or activity must contribute to the advancement of professional skills and/or scientific knowledge of the recertification candidate in the practice of refrigeration system operations, services, design, installation and/or maintenance.
- Each approved course, program or activity must foster the enhancement of general or specialized practice and values of refrigeration operations, related sciences and/or engineering ethics.
- Each approved course, program or activity must be developed and presented by persons with education and/or experience in the subject matter of the program.

Acceptable providers for PDHs shall include, but not be limited to the following.

- Coursework provided by RETA Authorized Instructors (RAIs) using RETA educational materials.
- Chapter meetings with an educational presentation by a guest speaker (name/date/topic needs to be recorded on a roster certified by a Chapter Officer and filed with RETA HQ).
- RETA Annual Conference workshop courses.
- Regional RETA conference workshop courses.
- Colleges, universities or other educational institutions presenting courses related to industrial refrigeration.
- Other technical or professional societies or organizations including manufacturers (factory training either site-specific or in factory – procedures for documenting this training will be made available from RETA HQ).

RETA shall evaluate whether to award PDHs for training requested in an application for recertification or in the RETA Certification Database based on documentation provided by the candidate.

Candidate Notification and Appeals

- RETA will inform the candidate in writing whenever PDHs requested as part of a recertification application cannot be applied toward renewing a RETA credential. The candidate must respond in writing within 30 days with any new evidence in support of the candidate's recertification before a decision to deny credit toward recertification will be reconsidered by RETA. Unsupported claims will be denied.
- RETA may require additional evidence demonstrating compliance with these requirements from any candidate. Each recertification applicant must provide evidence that training meets these recertification requirements before PDHs will be applied toward recertification.
- Candidate appeals of decisions regarding recertification are subject to the policies documented in Section 1800, Membership, of the RETA Policy and Procedures Manual

Refrigerating Engineers & Technicians Association
CERTIFIED REFRIGERATION ENERGY SPECIALIST (CRES) APPLICATION

Please print or type all information. Completed applications may be submitted:

- **By mail to RETA Certification, 1035 Second Avenue SE, Albany, OR 97321**
- **By fax to 541-497-2966**
- **By Email as an attachment in a PDF to dan@reta.com**.

Call RETA at 541-497-2955 or toll-free at 844-801-3711 between 8 am and 5 pm Pacific Time if you have questions regarding your application or membership status. Please be sure to return all required pages of the application. **Penmanship counts – please write or print clearly. Applications that cannot be read clearly may delay processing or result in errors in your RETA records.**

You will receive your initial instructions, scheduling confirmation, and your test results via email. It is very important that you provide a valid e-mail address that you control when applying for certification. **Your signature below acknowledges that you waive any Privacy Act issues if the email address provided by you is not one that is yours**. Please contact RETA Headquarters if you do not have an e-mail address through which we may communicate with you.

Your Name Exactly as You Want it on Your Certificate

Your RETA Membership Number and Expiration Date:

Company

Business Address | City | State | Zip

Home Address | City | State | Zip

Home Phone | Work Phone

E-mail address IMPORTANT: **A VALID E-MAIL ADDRESS IS MANDATORY – SEE THE CONFIDENTIALITY AND PUBLIC INFORMATION STATEMENT ON PAGE 7 OF THIS APPLICATION.**

☐ Check here if you qualify for a special accommodation as defined by the Americans with Disabilities Act (ADA). .

Describe the accommodation(s) you have received in past education and/or professional testing that you think may be appropriate for RETA examinations.

Related Experience

Current employer (company name) | City | State | Years

Your current job title | Refrigeration-related responsibilities | Years

Refrigeration-related responsibilities and experience | Years

Energy management responsibilities and experience | Years

Education and Training

☐ High School Graduate	Year	Name of School	City	State
☐ College Degree(s)?	Year	Name of School	City	State
	Year	Name of School	City	State
☐ Other Professional Training)?	Year	Training Provider	City	State
	Year	Training Provider	City	State

Where I Plan to Take the Test

RETA examinations are administered in eight RETA Network Test Centers and in about 400 Kryterion Testing Network (KTN) locations in the U.S. Please check where you plan to take your RETA exam. A current list of about 400 KTN centers in the US is available on the RETA website.

RETA Network Test Centers (Check if you are planning to test in one of these locations)

- ☐ 2016 RETA Annual Conference, Las Vegas, NV
- ☐ Industrial Consultants, Owasso, OK
- ☐ Lanier Tech, Oakwood, GA
- ☐ Polk College, Lakeland, FL
- ☐ Wagner-Meinert, Fort Wayne, IN
- ☐ Garden City Community College (GCCC)
- ☐ IRTC, Lyndhurst, VA
- ☐ Modesto Tech, Modesto, CA
- ☐ RETA HQ, Albany, OR

☐ A Kryterion Testing Network (KTN) Center near _____
CITY **STATE**

CRES Application and Examination Fees

The fee must be in the form of personal or company check, money order, credit card or purchase order.

All applications submitted without the required fee are incomplete until the fee is paid. You will not be permitted to schedule or take a test until the fee is paid. Be sure to include your membership number (if applicable) and expiration date. For corporate memberships, the applicant must be one of the designated members to qualify for the member rate.

ALL RETA CERTIFICATION APPLICATIONS EXPIRE AFTER ONE YEAR UNLESS YOU REQUEST A 90-DAY EXTENSION BEFORE THE END OF YOUR ELIGIBILITY PERIOD. YOU FORFEIT YOUR EXAM FEES IF YOU DO NOT MEET THIS REQUIREMENT.

Certified Refrigeration Energy Specialist
❒ $495 RETA member
❒ $695 Non-member
❒ Retesting Fee $260 / $365 non-member
Previous test date: _____

Payment method:
❒ Check payable to Refrigerating Engineers & Technician Association
❒ Credit card (VISA, MasterCard, American Express, Discover)
❒ Purchase order from a corporation or business followed by a check to RETA

Credit card number | Expiration date | Security Code #

Print Name as it Appears on Card | Signature

Billing Address

Billing Phone Number

Send a receipt to: ❒ Email_____ ❒ Fax _____

What material did you study to prepare for taking this examination? (check all that apply)

☐ RETA IR-1 ©2010 or later	☐ *Modern Refrigeration & Air Conditioning*
☐ RETA IR-2 ©2012	☐ *Refrigeration and Air Conditioning Technology – 5th Edition*
☐ RETA IR-3	☐ *Refrigeration Equipment* - A.C. Bryant
☐ RETA IR-4	☐ *Refrigeration Principles, Practice & Performance* - C. Langley
☐ RETA BE-1	☐ *Industrial Refrigeration Handbook* - Wilbert Stoecker
☐ RETA BE-2	☐ *TPC Training Series* - SchoolCraft
☐ RETA IR-1 – Spanish	☐ *Industrial Refrigeration Energy Efficiency Guidebook* - IRC
	☐ *Industrial Refrigeration Best Practices Guide* – Cascade Energy
	☐ Other (Please identify)
☐ Check here if you took an 8~40 hour course to prepare for this exam. IF YES – Where did you receive this instruction? _____	

STATEMENT OF UNDERSTANDING

(This section must be completed by all candidates)

I hereby apply for RETA certification and verify that all information provided is accurate. I understand that any misrepresentation on this application will result in failure to become certified, and my application and examination fee will be forfeited. I understand that if I provide RETA an email address for my results transmittal that is not my own, I waive all rights that are associated with the Privacy Act. I authorize the evaluation and validation of my credentials by RETA. In furtherance of my application, I authorize any individual or organization who may have information concerning my credentials to provide such information to RETA. I hereby waive any claim for damages against RETA and any individual or organization that supplies such information by reason of any act or omission by any of them taken in good faith in connection with this application. I understand that the decision as to whether I qualify for certification rests solely and exclusively in RETA and that its decision is final. By signing and submitting this application, I also agree to adhere to the RETA Code of Conduct.

I recognize that as a CRES candidate, I will be proposing and conducting energy conservation projects that will require approval from the plant manager or other management personnel. Adjustments intended to improve energy efficiency as part of any CRES project must occur only under the direct supervision and with the approval of operators and supervisors who are fully qualified to assure the safe operation of those facilities.

As a RETA Certified Professional I will:

- Comply with the relevant provisions of the RETA Certification program.
- Make no claims of being certified outside of the certification credential(s) I hold.
- Not use my RETA Certification status in any manner that brings disrepute to RETA or misrepresents RETA Certification with false or misleading statements.
- Not use my RETA Certification in a misleading manner.
- Discontinue my claim to RETA Certification if my certificate is revoked or if I fail to maintain my certificate through evidence of on-going training and the accrual of recognized Professional Development Hours and Continuing Education Units.
- Inform RETA without delay of any changes that restrict my capacity to perform competently, safely and effectively without endangering the welfare of myself or others if I can no longer fulfill my obligations as a RETA-credentialed professional.

Signature Date

Print Name

Application checklist

Be sure to:

- ❒ Obtain a valid e-mail address.
- ❒ Fill out the application form completely.
- ❒ Include your payment.
- ❒ [redacted]

  or FAX to: 541-497-2966

  or Email as an attachment in a PDF to: dan@reta.com

- ❒ Download CRES Study Guide from the RETA website to help you prepare to take the exam. The Study Guide includes information that you need to review before the test. You cannot use the Study Guide during the test, but references that are permitted will appear on-screen.
- ❒ Follow the instructions that accompany the RETA Certification Exam permit that is sent to you from headquarters.
- ❒ Review available Kryterion Testing Network (KTN) Test Center and RETA NETWORK TEST CENTER locations in the list on the RETA website.
- ❒ [redacted]
- ❒ Bring your RETA provided test authorization code to the test center on the day you test.
- ❒ Bring at least one government-issued form of photo identification such as a driver's license or passport to the test center **PLUS** a second form of identification (this is a security and validity measure).
- ❒ Report to the test center 15-20 minutes before your appointment. Bring your RETA provided permit and supplemental packet to the test center.

References and Training Options to Prepare for RETA's CRES Examination

Several pathways exist to enable RETA certification candidates to acquire the knowledge and skills required to pass the CARO, CIRO or CRES examinations. While RETA neither endorses nor guarantees that these study materials include all of the content areas in these RETA examinations, candidates who cannot or do not wish to use RETA course books can prepare for RETA certification using other materials such as these. Successful completion of a study course or review of materials such as these does not guarantee a passing score on any RETA certification examination.

Alternate References and Training

1. *Refrigeration Principles, Practice and Performance* (2007). Chris Langley. Thomson Delmar Learning.
2. *Modern Refrigeration and Air Conditioning*, 2004 Edition (2004). Andrew Althouse, et. al. Thomson Delmar Learning.
3. *Electricity for Refrigeration, Heating and Air Conditioning* (2006). Gene Smith. Thomson Delmar Learning.
4. *Refrigeration Equipment* (1998). A.C. Bryant. Elsevier Science & Technology.
5. *Industrial Refrigeration Handbook* (1998). Wilbert Stoecker. McGraw-Hill.

6.* *Practical Problems in Mathematics for Heating and Cooling Technicians, 3rd Edition* (1998). Russell DeVore. Thomson Delmar Learning.

7.* *Industrial Refrigeration Best Practice Guideline – 3rd Edition* (2010) - Cascade Energy Engineering

8. TPC Training Series – SchoolCraft
   - 102* Reading Schematics and Blueprints
   - 109* Industrial Safety and Health
   - 110* Troubleshooting
   - 210* Electrical Troubleshooting
   - 301* Basic Mechanics
   - 461 Ammonia Refrigeration Basics
   - 462 Positive-Displacement Compressors
   - 463 Evaporators, Condensers and Controls
   - 464 Purging, Piping and Safety

9.* *Industrial Refrigeration Energy Efficiency Guidebook – 2nd Edition* - Industrial Refrigeration Consortium University of Wisconsin-Madison

10.* IIAR Andy Ammonia Series

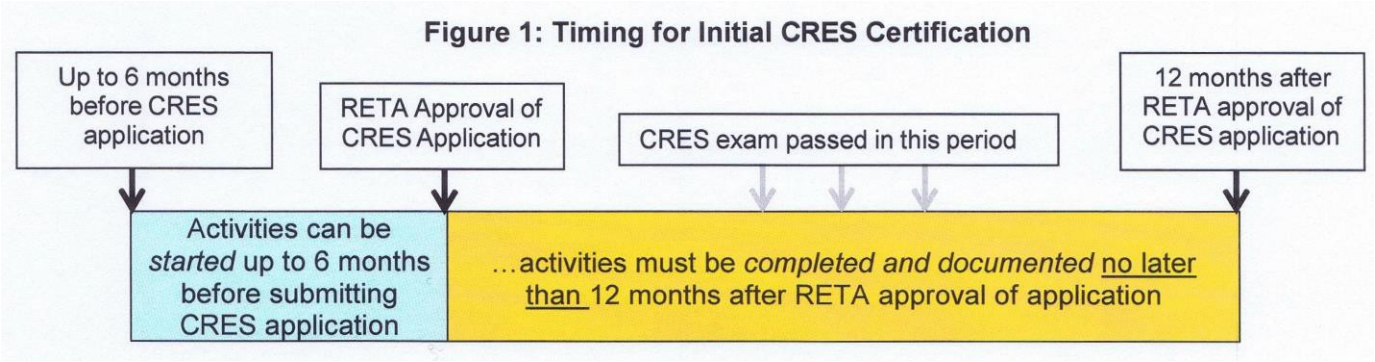
* Materials available for purchase from RETA

Documenting CRES Energy Efficiency Activities

Requirements

Earning a CRES credential requires the following steps. Figure 1 below illustrates these requirements.

- Pass the CRES examination within one year after RETA approves the candidate's CRES application.
- A CRES candidate's energy efficiency activities may begin up to six months before submitting a CRES application to RETA.
- Documentation of five CRES energy efficiency activities must be submitted within one year after RETA approves a candidate's CRES application.



Examples of CRES Energy Efficiency Activities

CRES emphasizes low- and no-cost energy efficiency "activities" rather than "capital projects." CRES activities typically include the following characteristics. While "capital projects" may qualify as CRES activities, they are not required to earn the CRES credential. **At least three of five CRES energy efficiency activities must demonstrate direct energy savings.** Up to two activities may include indirect support for achievement of energy savings.

A. Low- or no-cost procedural or operational activities that directly achieve energy savings.[1]

Example 1 Changing a key system operating parameter such as condensing or suction pressure and making the revised set point as a Standard Operating Procedure to ensure persistence.

Example 2 Systematically optimizing defrost operation for a freezer or cooler on a regular basis. This could include:

- Recording the initial conditions and set points
- Observing a defrost for each coil
- Diagnosing valve issues
- Testing new set points for hot gas pressure, frequency and duration
- Recording achieved set points as Standard Operating Procedure

[1] An energy-saving CRES activity should have significant energy savings (kWh) such as 0.1 percent of total plant energy use. For example, if a plant uses $1 million in energy per year, an energy-saving CRES activity should reduce energy costs by at least $1,000 per year. CRES activities might also reduce demand (kW), but this does not change electricity generated and thus is not a contributor to sustainability or reduction of environmental impact.

B. Low- or no-cost procedural or operational activities that <u>indirectly</u> support energy savings.

Example 3 Establish and implement a plan to track and report plant energy intensity through Key Performance Indicators (KPIs) such as:

- Production volume and weather variables
- Comparing KPIs to other similar company facilities
- Reporting performance to management and plant operations

Example 4 Regular measurement and documentation in a maintenance management system with reporting to management and plant operations such as:

- Instrumentation recalibration
- Monitoring levels of non-condensable gasses
- Scheduled maintenance of condensers
- Documenting procedures for seasonal resetting of defrost, including scheduling for individual evaporators

C. Changes in equipment that <u>directly</u> achieve energy savings.

Example 5 Installing VFD or condenser fans with associates control upgrades and operating procedures documented as Standard Operating Procedures to ensure persistence.

Example 6 Installing VFD for multiple evaporator fans with associated control upgrades, with operating parameters documented as Standard Operating Procedures to ensure persistence.

Level of Effort, Collaboration and Documentation

Each CRES activity should be expected to require a minimum of two to eight hours of effort plus time for documentation and reporting. Activities that are complex or require construction, modification or bidding may take more time to implement. CRES documentation should be similar for both simple and complex energy efficiency activities. It is not intended that an activity like calibration procedures would be broken down by compressor, evaporator or zone to create multiple activity reports.

CRES candidates who work in a single facility may collaborate on activities. Group activities can be shared by up to five CRES candidates in a single facility as long as each CRES candidate documents work he or she has performed in addition to findings and results from the collaborative activity.

CRES candidates who work in more than one refrigeration facility may collaborate on up to five group activities. Each activity may involve up to five CRES candidates. Collaborators may include managers or more than one plant, outside contractors, engineers, vendors or service providers. These candidates may use activities completed in the refrigeration plants of others. For example, a contractor who has installed VFD for condenser fans for a refrigeration facility may decide to apply to become a CRES candidate and use this activity as one of his/her energy efficiency activities.

Documentation of CRES Activities

An electrical database is available for CRS candidates to document activities and submit them for RETA's Certification Committee to review. A paper version of the documentation in this database appears in the next section of this Handbook.

Documentation of each CRES energy efficiency activity may include the following types of information.

- Original or baseline conditions with existing equipment description and current operating parameters
- Changed, new or retrofit conditions with new equipment descriptions and revised operating parameters
- Date of implementation or completion
- List(s) of involved parties, vendors, utility, contractors and any others
- The magnitude, quantity or other measure of the activity such as the number of evaporators with new defrost parameters
- Estimates of energy savings and the methods for calculating savings may include simple calculations, simulation modeling, engineering calculations, one-time metered measurements of conditions before and after an activity, and short-term measures of conditions before and after with control system trending or data logging of before and after conditions.
- Descriptions of other observed benefits such as reduced maintenance, improved work environment, product quality and improved safety.

CRES Recertification

The CRES credential expires three years after the date it is awarded by RETA. Renewal of a CRES credential for another three years requires:

- Completion and documentation of six additional energy efficiency activities
- At least three of the six new energy efficiency activities must document direct energy savings in one or more refrigeration facilities.
- Documentation of 24 Professional Development Hours (PDHs) related to energy use in refrigeration systems

CRES ACTIVITY DOCUMENTATION FORMS (Complete one form per activity. Email to RETA Certification at Dan@RETA.com)

Information on CRES Applicant Claiming This Activity for Certification (Up to five persons can claim same activity):				
Your Name	First Name:	Last Name:	Are you a RETA Member? ☐ Yes ☐ No	
Your Job Title	Job Title:			
Job Category	☐Executive	☐Plant manager	☐Maintenance Manager	☐ Production manager
	☐Refrigeration Operator	☐Refrigeration Technician	☐Vendor/ service provider	☐ Other _____
	Office Phone:	Cell Phone:		
	Email:	Backup Email:		
Can Peers Contact You?	Can peers at other facilities or companies contact you to ask you about this activity? ☐ Yes ☐ No			
Information on where CRES applicant is employed (may be different from where CRES activity was completed)				
Employer Name	Employer Name:			
Employer Address	Street Address:	City:	State:	Zip Code:
Business Type of CRES Applicant's Employer	☐Controlled atmosphere fruit storage	☐Refrigerated food storage	☐ Grocery distribution storage	☐ Cold storage warehouse
	☐Food processing	☐Dairy	☐Vendor/ service provider	☐ Other _____
IF APPLICABLE: Information on other CRES Applicant Claiming This Activity for Certification (Up to five persons can claim same activity):				

IF APPLICABLE: Information on other CRES Applicant Claiming This Activity for Certification (Up to five persons can claim same activity):				
Your Name	Fist Name:	Last Name:	Are you a RETA Member: ☐ Yes ☐ No	
Your Job Title	Job Title:			
Job Category	☐Executive	☐Plant manager	☐Maintenance Manager	☐ Production manager
	☐ Refrigeration Operator	☐ Refrigeration Technician	☐ Vendor/ service provider	☐ Other _____
	Office Phone:	Cell Phone:		
	Email:	Backup Email:		
Can Peers Contact You?	Can peers at other facilities or companies contact you to ask you about this activity? ☐ Yes ☐ No			
IF DIFFERENT: Information on where second CRES applicant claiming activity is employed (may be different from where CRES activity was completed)				
Employer Name	Employer Name:			
Employer Address	Street Address:	City:	State:	Zip Code:
Business Type of CRES Applicant's Employer	☐Controlled atmosphere fruit storage	☐Refrigerated food storage	☐ Grocery distribution storage	☐ Cold storage warehouse
	☐Food processing	☐Dairy	☐Vendor/ service provider	☐ Other _____
IF APPLICABLE: Information on other CRES Applicant Claiming This Activity for Certification (Up to five persons can claim same activity):				

Your Name	First Name:	Last Name:	Are you a RETA Member? ☐ Yes ☐ No	
Your Job Title	Job Title:			
	☐Executive	☐Plant manager	☐Maintenance Manager	☐ Production manager
	☐Refrigeration Operator	☐Refrigeration Technician	☐Vendor/ service provider	☐ Other _____
Phone/ Email	Office Phone:	Cell Phone:		
	Email:	Backup Email:		
Can Peers Contact You?	Can peers at other facilities or companies contact you to ask you about this activity? ☐ Yes ☐ No			
IF DIFFERENT: Information on employer of third CRES applicant claiming activity (may be different from where CRES activity was completed)				
Employer Name	Employer Name:			
Employer Address	Street Address:	City:	State:	Zip Code:
Business Type of CRES Applicant's Employer	☐Controlled atmosphere fruit storage	☐Refrigerated food storage	☐ Grocery distribution storage	☐ Cold storage warehouse
	☐Food processing	☐Dairy	☐Vendor/ service provider	☐ Other _____

Your Name	Fist Name:	Last Name:	Are you a RETA Member: ☐ Yes ☐ No	
Your Job Title	Job Title:			
	☐Executive	☐Plant manager	☐Maintenance Manager	☐ Production manager
	☐ Refrigeration Operator	☐ Refrigeration Technician	☐ Vendor/ service provider	☐ Other _____
Phone/ Email	Office Phone:	Cell Phone:		
	Email:	Backup Email:		
Can Peers Contact You?	Can peers at other facilities or companies contact you to ask you about this activity? ☐ Yes ☐ No			
IF DIFFERENT: Information on employer of fourth CRES applicant claiming activity is employed (may be different from where CRES activity was completed)				
Employer Name	Employer Name:			
Employer Address	Street Address:	City:	State:	Zip Code:
	☐Controlled atmosphere fruit storage	☐Refrigerated food storage	☐ Grocery distribution storage	☐ Cold storage warehouse
	☐Food processing	☐Dairy	☐Vendor/ service provider	☐ Other _____

COPY THIS PAGE IF THERE ARE ANY FURTHER APPLICANTS CLAIMING THIS ACTIVITY

Information for Facility in Which CRES Activity Was Done (one activity per form)

Facility Name and Location	Company and Facility Name	Street Address:	City:	State:	Zip Code:
Serving Utilities	Electric Utility:	Gas Utility:			
	☐Controlled atmosphere fruit storage	☐Refrigerated food storage	☐ Grocery distribution storage	☐ Cold storage warehouse	
	☐Food processing	☐Dairy	☐Vendor/service provider	☐ Other _____	

Energy Efficiency Activity Description (one activity per form)

Brief Title of Activity:				**Activity Completion Date (mm/dd/yyyy):**		
Activity Type	☐Operations & maint.	☐Establishing a procedure	☐Calibrating equipment	☐ Adjusting a set point	☐Capital project	☐ Other
Subsystem Impacted	☐ Compressors	☐ Evaporators	☐Condensers	☐ Defrost	☐ Lighting	☐ Compressed air
	☐Pumps	☐HVAC	☐ Fans/blowers	☐ Hydraulics	☐Other subsystem _____	
Summary of activity performed	(Provide brief description. Details can be provided in Attachment 1)					
	(Use detailed, quantitative descriptions wherever possible: e.g., quantities, set points, measurements, operating hours, etc.)					
	(Use detailed, and when possible, quantitative descriptions: e.g. quantities, set points, measurements, operating hours, etc.)					
	☐ Directly saved energy	☐ Supported energy savings				
	Describe how:					
Other Benefits (non-energy)	☐ Reduced maintenance ☐ Improved work environment ☐ Improved safety ☐ Improved product quality ☐ Improved productivity ☐ Other (please describe)_____					

Facility Energy Use and Activity Savings Information (one activity per form)

Brief Title of Activity:			**Activity Completion Date (mm/dd/yyyy):**
Facility Wide Energy Use	Electricity kWh/year		Natural Gas Therms/year
	Electricity base year		Natural Gas base year
Baseline Energy Use of Subsystem Impacted	kWh/year		Therms/year
Activity Energy Savings	kWh/year savings	Expected peak kW reduction	Therms/year savings
Activity Savings as a % of Subsystem Energy Use	kWh savings as % of subsystem baseline kWh/year use		Therm savings as % of subsystem baseline therm/year use
Dollar Savings	$/kWh x kWh savings =		$/therm x therm savings =
Measure Life	How many years would you estimate that savings will last for this activity? ☐ 1 year ☐ 3 years ☐ 5 years ☐ 10 years		
What method was used to estimate savings	☐ Rule of Thumb ☐ Calculations ☐ Simulation ☐ Data logging ☐ Other (Include details in Attachment 2.)		

Vendors/Contractors Involved in Activity

Vendors or contractors involved in activity	Vendor 1 Name:	City:	State:	Did Vendor 1 provide a discount because of your CRES involvement? ☐ Yes ☐ No ☐ Don't know
Vendors or contractors involved in activity	Vendor 1 Name:	City:	State:	Did Vendor 1 provide a discount because of your CRES involvement? ☐ Yes ☐ No ☐ Don't know

Attachment 1. ☐ **Activity Detail**

An Activity Detail must be provided for each activity as it is expected that PSM, Management of Change, and/or internal company policies would require that any changes to equipment, facility or operations be documented. It is also intended that all CRES Activities be a permanent and positive change for the organization and documentation is necessary for sustaining any activity.

If the activity involves **an equipment change**, describe in detail what was done:

- *What was the baseline or existing equipment*
- *What the equipment was changed to*
- *When the changes were made*

If the activity involves a **set point or operational change**, attach documentation of procedure for change:

- *What will be changed*
- *How will the changes were made and when*
- *Verify that the equipment can be safely operated under the proposed conditions*

If the activity involves a **procedure** such as calibration or diagnostic performance check:

- *Attach the written procedure documentation*
- *If the procedure should be repeated on an ongoing basis, how frequently will it be performed?*
- *How has the procedure been incorporated into the facility scheduled maintenance system?*

Documentation to upload can include:

- *Written Standard Operating Procedures*
- *Sequence of Operations*
- *Management of Change documents*
- *Process Safety Management documents*
- *Maintenance Management System activity page*
- *Calibration forms and lists*

Attachment 2. ☐ **Energy Savings Estimate Documentation**

If energy savings are claimed, attach the step-by-step calculations, data logging summary, or simulation summary. Please include energy savings estimates for both electricity and/or natural gas, if savings are claimed for either energy source.
Calculations should be consistent with that described in Section 5, as Rule of Thumb, hand or spreadsheet calculations, energy simulation modeling, or data logging. If calculations are supported by a third-party utility, consultant or contractor, cite them as the source.