

Program Guidelines – Assessments and Assessment Reports

The following guidelines are designed to assist IAC directors and staff in the performance, creation and delivery of the primary products of the IAC program; the industrial assessment and the industrial assessment report. IAC directors and staff are encouraged to become familiar with the other program guidelines covering related topics such as client eligibility criteria, faculty and staff requirements, and student involvement and responsibilities. These guidelines can be found in the internal site of the IAC website, www.iac.rutgers.edu This document will also cover related reporting which is web-based via the Activity Log (ActLog) which is also on the website.

1. Scope of Industrial Assessments

- 1.1. IAC Assessments and the resultant Assessment Report are expected to reflect the IAC program goals to help eligible manufacturers identify ways to save energy, reduce waste, and improve productivity while providing engineering students with hands-on training in manufacturing plants.
- 1.2. Energy savings should be given top priority and significance in the assessment visit and report consistent with the fact that the program is funded by the United States Department of Energy. (DOE)
- 1.3. All interactions between an IAC and a client including: the recruitment activities; the collection of pre-assessment data; the performance of the assessment visit, the timely delivery of the assessment report; and follow-up activities should be conducted with the highest professionalism toward encouraging client confidence in the IAC program and eventual implementation of assessment recommendations.

2. Annual Number of Assessments and Assessment Days per Center

- 2.1. The typical IAC industrial assessment is expected to be conducted in one day. As soon as an assessment report is scheduled, it should be logged on the ActLog, and logged again when the assessment is completed. A report from that visit is expected to be delivered to the client within sixty days. At this same time, a pdf version and a data shell should be uploaded to the ActLog.
- 2.2. Centers propose the number of assessment days they will complete, the total number of assessments that will be performed, and provide justification for their ability to complete the proposed number of assessment days per assessment in their Annual Work plan.
- 2.3. In an IAC's Annual Work plan, a difference between the number of assessments and the number of assessment days is used to reflect any IAC plans to perform multiple day assessments or follow-up visits.
- 2.4. The number and justification for each type of day, i.e., multiple day assessments and follow-up visits, are to be included in an IAC's work plan. The criteria and method for approving multiple day assessments is defined in the "Program Guidelines for Clients" on the IAC website.
- 2.5. At least three (3) assessment days are to be conducted per quarter, reflecting the requirement that Centers are to operate year-round
- 2.6. Deviations from the annual workplan should be coordinated with the Technical Field Manager and the DOE.

3. Geographic Coverage of IAC Assessment Services

- 3.1. A goal of the most recent IAC program solicitation was to increase program coverage of the United States by expanding distance parameters.
 - The preferred strategy for accommodating travel to assessments beyond the 150 mile range is to schedule multiple assessments within that location.
- 3.2. Neighboring Centers with overlapping geographic boundaries should coordinate recruitment activities with the Technical Field Manager and DOE.

4. Performance of an IAC Assessment

- 4.1. A complete familiarity with the eligibility requirements, defined in “Program Guidelines for Clients”, is recommended for all IAC team members, especially those responsible for recruiting clients.
- 4.2. A minimum level of familiarity with each client should be obtained by IAC team members prior to the performance of an assessment visit. One strategy for assessment preparation uses facility data collected via a pre-assessment questionnaire and a year’s worth of utility bills shared and analyzed in advance of the assessment.
- 4.3. The composition of IAC assessment teams including the minimum number of assessments for faculty, and the participation qualifications for students, is defined by “Program Guidelines for Faculty and Staff”, and “Program Guidelines for Students”.
- 4.4. The typical IAC assessment visit typically begins with an introductory meeting between client facility representatives and the full IAC assessment team. The scope of the IAC services, the characteristics of the facility including potential safety hazards, the processes and resource use concerns should be discussed early. Full compliance with the minimum safety standards established by the host facility is mandatory.
- 4.5. IACs have found that a discussion of the plant production process with facility personnel is useful at this point. A review of the relevant safety issues should be conducted prior to sending IAC team members to conduct measurements or observe processes.
- 4.6. The next stage of a typical IAC assessment visit is a plant tour lead by the most knowledgeable plant representative available. The most effective tours have been found to follow the plant production process from the location where raw materials are received through the production process to the point finished goods are shipped.
- 4.7. It is highly recommended that IAC team members work in groups when conducting measurements and observing plant processes within a client’s facility. IAC team members should not venture into a plant individually without assistance from another team member or plant representative.
- 4.8. IACs have found it effective to conduct a final meeting with the client facility representatives to clarify processes, discuss findings, get input on potential recommendations, and inform the client about next steps prior to leaving the facility.

5. Contents of an IAC Assessment Report

IAC assessment reports accomplish multiple purposes and provide a reflection of the authoring institution, the IAC program, and the United States Department of Energy.

- 5.1. Foremost, the assessment report should be a tool to assist the client facility personnel in implementing the energy, waste, and productivity recommendations from the IAC team.
- 5.2. Successful assessment reports provide an accurate, comprehensive record of the IAC assessment visit and reflect an understanding of the production process acquired by the IAC team.
- 5.3. Useful industrial assessment reports of acceptable quality are expected to include the following information in an easy to read format:
 - An Executive Summary section should include an overall summary of the assessment and relevant descriptive data, i.e., the client's NAICS code, principle product, facility zipcode, number of employees, operating hours, annual sales, and a summary of annual resource use by type, cost, and common units. In addition, a summary of the Assessment Recommendations should be included; with the title and value of each in dollars and resources saved, and a brief description of the conservation potential found.
 - A Plant Description section contains the plant size, a general plant layout, what the building(s) is constructed of (if possible), where the offices are located, and process equipment location.
 - A Process Description section explains the plant process from beginning to end. It should be apparent to reader of this section that the author has a solid understanding of the facility operations. A process flow chart that maps the production process from raw materials to finished goods is normally an asset to delineate the flow of all resource inputs, waste streams, by-products and finished goods.
 - Resource Charts and Tables should include electrical usage, natural gas usage, fuel oil, and, if applicable, water or sewer data.. Other types of energy, i.e. propane, should also be included if they are deemed significant.. The energy data should be presented in an easy to read, graphical format, i.e., tables, bar and/or pie charts.
 - A list of all the Major Energy Consuming Equipment should include compressors, HVAC (Heating, Ventilation and Air Conditioning Systems), motors, lighting, etc. This list should include the sizes of the major pieces of equipment and their energy requirements.
 - A Best Practices section should be briefly describe specific resource conservation practices observed during the visit that the IAC team praises and encourages the client to continue.
 - Other components facilitating report comprehension, describing the IAC program and providing an accurate record of the assessment visit expected with each report include: a report title page with the IAC name and contact information, report number, report date, assessment date, names of IAC staff participating in the assessment visit, report preface or acknowledgement page referencing both the United States Department of Energy, as well as the Office of Energy Efficiency and Renewable Energy's (EERE) Industrial Technology Program, table of contents, and footers which contains the report number, i.e., RU0001.

6. Post Assessment Report Requirements

- The Technical Field Manager will critique a percentage of assessment reports.
- The critiques will be emailed to the center with a link for responding. The critiques will be a combination of comments and suggestions. Some will request that changes be made and the client notified, or the upload revised.
- Review and response to critiques is expected within 30 days.
- Implementation reports should be sent to the Technical Field Manager via the ActLog within 6- 9 months of the plant visit. Centers should inquire from clients about potential Case Studies at this point and obtain quotes from plant personnel, and other pertinent Case Study information. Special attention should be given to acquiring replication and spin-off information
- Starting in the 10th month following the plant visit, the Technical Field Manager will follow up with the client with a customer satisfaction survey, including expanded implementation information. Centers should indicate in the assessment report that the Technical Field Manager will be contacting the client regarding this survey.
- If a client cannot be contacted within the 10 months to obtain implementation status information, an N21 code may be entered into the Field Manager's website. The center must maintain and forward a record of at least 5 contact attempts to the client. If the data is later obtained, the values in the database will be changed. It is unusual to have more than one client in a year that cannot be contacted. The record of the calls and reason for using the N21 code should be emailed to Fred Glaeser at glaeser@caes.rutgers.edu.