

January 9, 2007

MEMORANDUM TO: Luis A. Reyes  
Executive Director for Operations

FROM: Stephen D. Dingbaum **/RA/**  
Assistant Inspector General for Audits

SUBJECT: AUDIT OF NRC'S TECHNICAL TRAINING CENTER  
(OIG-07-A-05)

This report presents the results of the subject audit. The formal comments provided by your office on November 22, 2006, are presented in their entirety as Appendices C and D to this report. Appendix D also contains OIG's response.

Please provide information on actions taken or planned on each of the recommendations within 30 days of the date of this memorandum. Actions taken or planned are subject to OIG follow-up, as stated in Management Directive 6.1.

If you have any questions, please call me at 415-5915 or Steven Zane at 415-5912.

Attachment: As stated

cc: M. Johnson, OEDO  
M. Malloy, OEDO  
P. Tressler, OEDO

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# AUDIT REPORT

Audit of NRC's Technical Training Center

OIG-07-A-05 January 9, 2007



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## **EXECUTIVE SUMMARY**

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### **BACKGROUND**

Following its establishment as an independent agency in 1974, NRC provided technical training at its Headquarters in Bethesda, Maryland. After the 1979 accident at the Three Mile Island nuclear power plant, various investigative bodies recommended that NRC improve technical training for its staff. Consequently, in 1980, NRC moved its technical training to Chattanooga, Tennessee, a location near the Tennessee Valley Authority (TVA).

Organizationally, the Technical Training Center (TTC) reports to the Associate Director for Training and Development in the Office of Human Resources (HR). TTC is divided into three groups: The Reactor Technology Training group, the Specialized Technical Training group, and the Technical Support Team.

### **PURPOSE**

The objective of this audit was to identify opportunities to improve the economy, efficiency, and effectiveness of the Technical Training Center's operations.

### **RESULTS IN BRIEF**

Collectively, TTC instructors are knowledgeable, experienced and enthusiastic. While Office Directors and former TTC students were generally pleased with the training provided by TTC, OIG identified opportunities for improvement in the following areas:

- Inventory practices,
- Policies and procedures,
- Maintenance of training materials,
- Scheduling course revisions,
- Instructor training and rotation, and
- Course evaluations.

### **RECOMMENDATIONS**

This report makes eleven recommendations to the Executive Director for Operations (EDO) to improve the efficiency and effectiveness of TTC's training program and better prepare NRC for the significant challenge that lies ahead.

## **OIG ANALYSIS OF AGENCY COMMENTS**

At a September 28, 2006, exit conference with agency senior executives, NRC officials generally agreed with most of the report's findings and recommendations. Subsequent to that meeting, NRC provided informal comments on the draft report. The EDO provided a formal response to this report on November 22, 2006. Appendix C contains the EDO's transmittal letter.

The agency's formal comments along with OIG's analysis and response to those comments are included as Appendix D. This final report incorporates revisions made, where appropriate, in response to the agency's comments.

## **ABBREVIATIONS AND ACRONYMS**

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NRC	U.S. Nuclear Regulatory Commission
OIG	Office of the Inspector General
FTE	Full Time Equivalent
GAO	Government Accountability Office <sup>1</sup>
HR	Office of Human Resources
MD	Management Directive
TVA	Tennessee Valley Authority
TTC	Technical Training Center

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<sup>1</sup> Effective July 7, 2004, GAO legally changed their name from the General Accounting Office to the Government Accountability Office, while keeping the same acronym.

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## **I. BACKGROUND**

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### **Formation and Location**

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Following its establishment as an independent agency in 1974, NRC provided technical training at its Headquarters in Bethesda, Maryland. After the 1979 accident at the Three Mile Island nuclear power plant, various investigative bodies recommended that NRC improve technical training for



TTC - Chattanooga, TN

its staff. Consequently, in 1980, NRC moved its technical training to Chattanooga, Tennessee, a location near the Tennessee Valley Authority (TVA). Initially, NRC contracted with TVA for the use of its control room simulators. Subsequently, NRC purchased four simulators of its own for use in providing training in each of the four nuclear reactor vendor designs.

### **Organizational Structure**

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Organizationally, the Technical Training Center (TTC) reports to the Associate Director for Training and Development in the Office of Human Resources (HR). TTC is divided into three groups: The Reactor Technology Training group, the Specialized Technical Training group, and the Technical Support Team.

#### **Reactor Technology Training Group**

The Reactor Technology Training group provides a spectrum of classroom and full scope simulator courses to meet the cumulative reactor technology and regulatory skills training needs of the NRC staff. The Reactor Technology Training group designs, develops, maintains, and implements a reactor technology curriculum in each of the General Electric, Westinghouse, Combustion Engineering, and Babcock and Wilcox reactor vendor designs. The Reactor Technology Training group also provides training to develop and maintain agency skills related to:

- Performance-based regulatory safety assessment of control room configuration,
- Integrated plant operation,
- Application of emergency operating procedures, and
- Severe accident guidelines.

TTC instructors<sup>2</sup> teach these courses.

### **Specialized Technical Training Group**

The Specialized Technical Training group provides specialized non-reactor technical training. This group also supports Agreement State staff training. The training includes:

- Probabilistic risk assessment,
- Engineering support,
- Radiation protection,
- Fuel cycle technology,
- Security and safeguards, and
- Regulatory skills.

TTC instructors teach some courses in these areas, but the Specialized Technical Training group establishes and manages interagency agreements and commercial contracts to satisfy the specialized technical training needs for most courses.

### **Technical Support Team**

The Technical Support Team manages the reactor simulation program and provides administrative support for the training programs. This team also manages administrative aspects of the TTC facilities including:

- Building security,
- Facility management,
- Administrative funds control,
- Property management and control, and
- Administration of the local area network and all associated information technology infrastructure.

In addition, the Technical Support Team is charged with developing and implementing the agency learning management system<sup>3</sup> and all related web pages.

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<sup>2</sup> TTC instructors are NRC employees who teach full-time at TTC.

<sup>3</sup> The learning management system, currently under development, is a web-based application that will provide database interfacing, records storage, student registration, student enrollment, course and session cataloging, tracking of employee training records and qualification programs, and management of employee competencies.

## FY 2005 TTC Statistics

In FY 2005, TTC's budget was approximately \$7.6 million. This included \$3.9 million for interagency agreements, commercial contracts, and various administrative expenses and \$3.7 million in salaries and benefits for 29 full-time equivalents. During that year, TTC offered 70 courses and held 160 course sessions with 2,220 students attending. The following chart provides details of the courses and student attendance. Approximately 15 percent of the students were non-NRC from Agreement States and other government and international agencies.

### Course Statistics

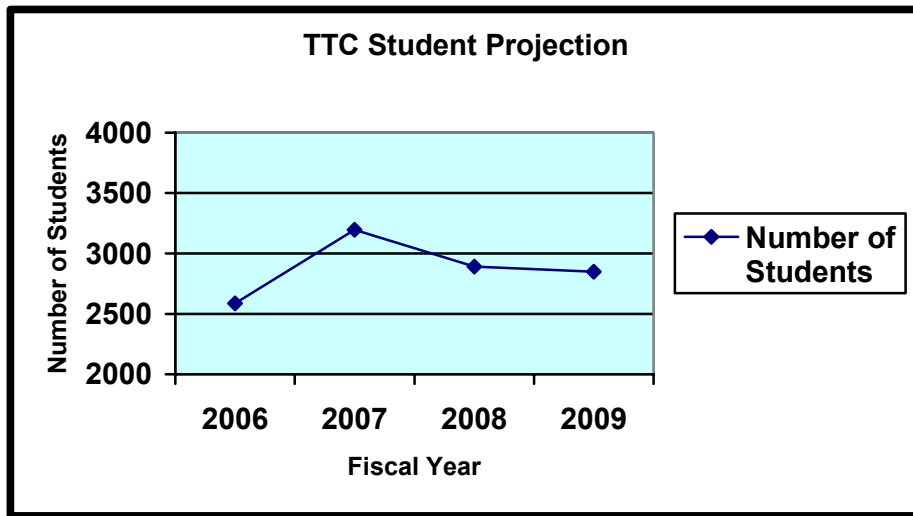
Course Category	Number of Sessions	Number of Students
<b>Reactor Technology</b>		
Reactor Concepts and Technology	18	392
Advanced Technology	6	100
Technology Review	13	94
Cross-Training	2	16
Simulator	16	86
Simulator Refresher	13	67
<b>Total Reactor Technology Training</b>	<b>68</b>	<b>755</b>
<b>Specialized Technical Training</b>		
Engineering Support Technology	4	50
Fuel Cycle Technology	1	30
Regulatory Skills	39	583
Radiation Protection Technology	28	499
Risk Assessment Technology	20	303
<b>Total Specialized Training</b>	<b>92</b>	<b>1465</b>
<b>Total TTC Training</b>	<b>160</b>	<b>2220</b>

Note: OIG created the categories in this table

## Training Challenge

In addition to its ongoing license renewal activities, recent developments have resulted in a marked increase in the workload associated with NRC's traditional regulatory responsibilities. As NRC enters this new era of reactor regulation, the agency faces many challenges. The Energy Policy Act of 2005 (Public Law 109-58) provides loan guarantees, production tax credits, and federal risk insurance for builders of new nuclear power plants. NRC estimates that it will receive 18 or more applications for new nuclear power plants in the coming years, with initial construction activities coming soon thereafter. Some applications may involve new reactor design technologies.

Coinciding with the increase in work related to new-plant licensing applications is the expected retirement of many senior staff. As a result, NRC increased its recruitment and hiring efforts for FY 2006 and the next several years. Appendix B shows the breakdown of the expected number of new hires and anticipated TTC students from FY 2006 through 2009. The anticipated training to be provided by TTC is reflected in the graph below. NRC's ability to effectively review and license the new generation of commercial nuclear reactors will depend significantly on how well employees new to the process are trained and developed into effective reviewers and regulators at the staff and senior management level.



NOTE: The data shown in the graph above and in Appendix B were provided by a TTC official.

TTC's challenge is to effectively and efficiently train the new and existing employees. NRC must have highly qualified employees to perform the new reactor licensing work while ensuring maintenance of the safe performance of the existing nuclear power plants. Current plans call for training on new reactor technology to be contracted-out until NRC develops in-house expertise.

To meet this challenge successfully, HR/TTC management should continue to develop and implement proactive strategies to ensure that TTC operates at optimal performance.

## II. PURPOSE

The objective of this audit was to identify opportunities to improve the economy, efficiency, and effectiveness of the Technical Training Center's operations.

### III. FINDINGS

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Collectively, TTC instructors are knowledgeable, experienced and enthusiastic. While Office Directors and former TTC students were generally pleased with the training provided by TTC, OIG identified opportunities for improvement in the following areas:

- Inventory practices,
- Policies and procedures,
- Maintenance of training materials,
- Scheduling course revisions,
- Instructor training and rotation, and
- Course evaluations.

Addressing these areas will improve the efficiency and effectiveness of TTC's training program and better prepare NRC for the significant challenge that lies ahead.

#### A. Inventory Practices

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Management Directive (MD) 13.1, "Property Management," requires that physical inventories of all NRC equipment be conducted every two years. Specifically regional offices, including TTC, are required to conduct self-inventories of NRC equipment every two years and report the results to the Office of Administration.

Control Activities, the third standard discussed in the Government Accountability Office's *Standards for Internal Control in the Federal Government*<sup>4</sup> (the GAO Standards) provides that key duties and responsibilities should be divided or segregated among different people. The methodology used by TTC in conducting an inventory did not include independent physical verification of the property by someone other than the property holder. A TTC representative explained that MD 13.1 does not require that regional inventories be conducted using the segregation of duties concept. Although compliant with MD 13.1, TTC's training mission could be negatively impacted if property cannot be located when required.

#### **Noncompliance with GAO Standards for Internal Control**

TTC staff did not perform an independent physical inventory of its property, but rather relied on individual property holders to provide electronic confirmation of the property's existence and location. To conduct the inventory, the TTC property custodian sent property holders an e-mail listing the inventory items assigned to them. The property holders would self-identify the item's existence and location via e-mail to the TTC property

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<sup>4</sup> *Standards for Internal Control in the Federal Government*, GAO/AIMD-00-21.3.1, dated November 1999.

custodian who subsequently prepared the inventory report. Finally, the Director of TTC Operations would send a memo reporting those results to the Office of Administration.

TTC's method of conducting the inventory pursuant to MD 13.1 did not meet the intent of the GAO Standards, which provide that key duties and responsibilities should be divided or segregated among different people. As applied to the TTC inventory practice, this means that the property holder should not be the same person verifying the existence and location of the property. Further, GAO's executive guide, *Best Practices in Achieving Consistent, Accurate Physical Counts of Inventory and Related Property*,<sup>5</sup> provides that adequate segregation of duties for the inventory process includes using personnel who do not have overlapping responsibilities in custody or access to the inventory items.

MD 13.1 provides that regional offices should conduct self-inventories, but does not require independent verification of property by someone other than the property holder. Effective implementation of segregation of duties reduces the risk of error or fraud so that no single person can adversely impact the accuracy and integrity of the physical inventory count.

### **Recommendations**

OIG recommends that the Executive Director for Operations:

1. Revise Management Directive 13.1 to require that property inventories should include independent verification of the property by someone other than the property holder.
2. Issue interim guidance to accomplish the intent of Recommendation 1, pending revision of Management Directive 13.1.

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<sup>5</sup> GAO-02-447G, issued March 2002.

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**B. Policies and Procedures**

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All of TTC's policies and procedures are outdated and incomplete. They do not comply with Office of Management and Budget Circular A-123, *Management's Responsibility for Internal Control*<sup>6</sup> (OMB Circular A-123) or the GAO Standards. This condition exists because HR management has not made finalizing policies and procedures a priority. Without established policies and procedures to clearly communicate management's expectations regarding authorities and responsibilities, staff may use inconsistent and less than optimal methods in carrying out their duties.

**TTC Policies and Procedures Need to be Revised and Updated**

The policies and procedures in use at TTC address a variety of areas including, but not limited to:

- The general duties and responsibilities associated with TTC positions;
- How TTC meets the technical training needs of the NRC;
- Course scheduling;
- Course administration;
- The TTC staff qualification program;
- The training materials control program; and
- Simulator training.

These policies and procedures are outdated and incomplete. Seven of nine policies are in draft form; six have been in draft form for more than 10 years. Of the two policies that are in final form, one is signed, but undated, though an attachment is dated November 1995; the other policy is dated August 1993, but is unsigned.

According to both OMB Circular A-123 and the GAO Standards, policies, procedures, and mechanisms should be in place to help ensure that agency objectives are met. Further, information that is relevant, reliable, and timely should be communicated to appropriate personnel at all levels within an organization.

HR management, however, has not made finalizing TTC's policies and procedures a priority. When contacted by OIG, they indicated that they plan to issue consolidated training policies which would also include the Professional Development and Knowledge Management Branch at Headquarters.

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<sup>6</sup> The Office of Management and Budget issued the revised OMB Circular A-123 on December 21, 2004.



Without current policies and procedures new TTC staff could experience difficulty understanding their responsibilities and authorities and take longer to do what is expected of them. Additionally, existing TTC staff may be unsure of management's expectations for carrying out the day-to-day operations of TTC.

**Recommendation**

OIG recommends that the Executive Director for Operations:

3. Update and finalize the training policies and procedures.

## **C. Maintenance of Training Materials**

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In OIG's opinion, prudent business practices call for a systematic and well-communicated method of maintaining training materials to ensure currency, accuracy and completeness. At TTC, each course has a cognizant instructor<sup>7</sup> assigned to maintain training materials. OIG found that TTC cognizant instructors employ various methods of maintaining training materials and do not systematically communicate their methods to other instructors or management. Further, the procedures for maintaining training materials are ad hoc and inconsistent. TTC management does not review or approve the various maintenance methods. Accordingly, turnover of materials from one instructor to another can be difficult to execute. There is a risk that out-of-date or erroneous training materials will be used in courses.

### **Inconsistent Methods of Maintaining Training Materials**

Cognizant instructors are assigned to maintain the course materials for each TTC course. Cognizant instructors are responsible for (1) identifying needed changes to course materials (2) revising course materials, (3) tracking revisions to course materials, and (4) maintaining the controlled copy of course materials current. Cognizant instructors have chosen a variety of methods for collecting, recording, and tracking changes needed to their assigned course materials. The degree of rigor, formality and available documentation varies from cognizant instructor to cognizant instructor. There also is no systematic process for cognizant instructors to communicate to other instructors the methods used to maintain their course materials.

OIG found that written policies do not specifically address methods for updating and making available training materials for all courses. In addition, TTC management has not reviewed or approved the various means used to maintain training materials. As a result, there is a risk that an instructor substituting for a cognizant instructor may use outdated training materials. The outdated training materials may not include recent operating experience.

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<sup>7</sup> A cognizant instructor is the instructor who has responsibility for maintaining and updating course material for a particular course.

Further, if a cognizant instructor takes a new position or leaves the agency, that individual's responsibilities would be given to another agency employee. Since the maintenance processes are not systematic, the turnover of course materials can be difficult to execute and can result in an inefficient use of agency resources during the turnover process.

**Recommendation**

OIG recommends that the Executive Director for Operations:

4. Develop and implement a written policy that provides specific expectations for:
  - Revising course materials,
  - Tracking revisions to course materials,
  - Transferring cognizant instructor responsibilities, and
  - Organizing and storing course materials.

## **D. Scheduling Course Revisions**

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OIG found that TTC management does not obtain information needed to establish respective priorities and resource requirements relating to pending revisions of training materials. There is no specific written policy for:

- Prioritizing the aggregate of needed training material revisions,
- Identifying needed resources, and
- Scheduling revision work to meet course-scheduling needs.

Consequently, resources may not be available to ensure that needed course revisions are made in a timely manner. Additionally, there is a risk that training materials may not be completely updated for courses. Finally, excessive costs such as instructor overtime or contractor costs may be incurred to meet course deadlines.

### **Improvements Needed in Scheduling Course Revisions**

In addition to classroom related responsibilities, a cognizant instructor is responsible for revising course materials for the assigned course. TTC offers a number of courses, each of which may have several changes pending at a given time.

Cognizant instructors manage the workload for revising courses in isolation from the broader needs of the TTC organization. OIG identified several deficiencies related to this area. Specifically, there are no processes for:

- Identifying and reporting pending changes for all courses to TTC management;
- Prioritizing, allocating resources, and scheduling changes for the aggregate of all pending course changes; and
- Tracking past changes to determine whether certain changes have previously been addressed or found to be unnecessary.

These deficiencies have occurred because HR and TTC management have not established written policies to specifically address prioritizing the aggregate of needed training material revisions, identifying needed resources and scheduling revision work to meet course-scheduling needs. Available resources are not being assigned to match the priorities of all needed course revisions. As a result, resources may not be available to ensure that needed course revisions are made in a timely manner.

### **Recommendation**

OIG recommends that the Executive Director for Operations:

5. Develop and implement a written policy that provides specific expectations for the aggregate of pending changes for all course materials on an ongoing basis. The policy should address:
  - Prioritizing individual changes,
  - Identifying available resources, and
  - Scheduling the changes.

## **E. Instructor Training and Rotation**

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Opportunities exist to enhance training effectiveness at TTC. To optimize instructional methodology and keep courses technically fresh and up-to-date, instructor training and instructor rotation need improvement. In OIG's opinion, sound business practices and the GAO Standards call for such improvements. As a result of the identified improvements noted above, students may not be getting the most current or best quality training available.

### **Instructor Training**

Instructors need to continuously sharpen their skills and receive intellectual stimulation. The GAO Standards state that, "Only when the right personnel for the job are on board and are provided the right training, tools, structure, incentives, and responsibilities is operational success possible." Instructor training includes technical training and instructional methodology training.

#### **Technical Training**

Most TTC instructors stated that, to stay current in their technologies, they rely on the NRC Daily Reports and discussions with their students. In OIG's opinion, sound business practice dictates that instructors should be in a continuous learning mode – if they are not teaching or preparing/updating teaching materials, they could be learning by such means as:

- Participating as observers or members of an inspection team at a nuclear power plant,
- Obtaining qualification as an inspector, and/or
- Completing relevant technical training courses.

While some instructors are in the process of obtaining current field experience, many are not.

#### **Instructional Methodology Training**

TTC instructors have not had instructional methodology training for at least 10 years. One instructor has not had this training for over 25 years. Many new instructors employed by TTC for fewer than 5 years received instructor training provided by their previous employers. One new instructor stated that typical industry practice requires instructor training every two years. The GAO Standards address management's commitment to competence stating in part, "All personnel need to possess and maintain a level of competence that allows them to accomplish their assigned duties..." (Underlining added for emphasis.) For optimum effectiveness, instructors need periodic instruction in new and innovative methods of presenting course materials.

HR management has not established a policy implementing a formal mechanism to ensure that all TTC instructors keep technically current and stay up-to-date with innovative teaching techniques. Consequently, TTC students may not be getting the most current or best quality training available.

### **Instructor Rotation**

Instructor rotation encompasses rotation of instructors in and out of TTC as well as rotation of cognizant instructor responsibilities as discussed below.

#### **Rotational Instructor Positions**

The concept of creating rotational instructor positions in TTC would create an environment in which new ideas, fresh perspectives, and recent hands-on experience would be of great value and benefit to TTC, its students, and the NRC. Currently, TTC instructors do not rotate in and out of TTC and typically remain at TTC until retirement. When contacted by OIG, the Director of the Office of Human Resources seemed receptive to the concept of creating rotational instructor positions. He mentioned the possibility of creating such positions on a pilot basis. One federal agency contacted by OIG has a policy of rotating instructors on a five-year cycle.

#### **Rotation of Cognizant Instructor Responsibilities**

Cognizant instructors are responsible for maintaining and updating course curriculum. A TTC instructor assigned as a cognizant instructor for a particular course generally retains the responsibility for that course for a long time. In OIG's opinion, sound business practices call for keeping course materials fresh by obtaining new ideas and new views. Rotation of cognizant instructor responsibilities would provide an additional way to accomplish this objective, along with providing them intellectual stimulation and a heightened level of interest and engagement in the courses that they teach. A TTC official stated that rotation of cognizant instructor responsibilities is not a routine practice, but it is an idea worth considering.

### **Recommendations**

OIG recommends that the Executive Director for Operations:

6. Develop and implement a policy requiring TTC instructors to maintain technical currency.
7. Periodically provide instructional methodology training for all TTC instructors.

8. Develop and implement a pilot program for rotational instructor positions at TTC.
9. Periodically rotate cognizant instructor responsibilities.



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**F. Course Evaluations**

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When used effectively, course evaluations are a valuable tool to assure management that the training program fulfills the needs of students, as well as to identify opportunities for improvement. While TTC instructors obtain immediate feedback from students at the end of each training session, course evaluations are not compiled in an official database. Such action would allow TTC management to analyze results and identify areas needing improvement. Furthermore, the evaluations used to evaluate courses taught by TTC instructors do not include specific questions related to instructor performance. In OIG's opinion, both of these conditions are at variance with prudent business practices and other relevant criteria. As a result, negative trends could go unnoticed and uncorrected. Uncorrected problems in course content and/or instructor performance could adversely affect the quality of training received.

**Official Database**

While some managers and instructors at TTC maintain individual databases containing information related to course evaluations, TTC management has not established a central, official database to compile and analyze course evaluation results. The GAO Standards provide that "Internal control should generally be designed to assure that ongoing monitoring occurs in the course of normal operations." Accordingly, in OIG's opinion, prudent business practice requires that TTC management should compile course evaluation results in an official database. In addition, an appropriate methodology should be established to facilitate data analysis. Such action would provide TTC management and instructors the necessary tool to identify and correct problem areas. In light of the fact that TTC managers do not routinely observe instructors in the classroom, course evaluation analysis is critical to successful operations.

**Evaluating Instructor Performance**

Course evaluations used for contracted courses include questions specifically related to instructor performance; however, evaluations for courses taught by TTC instructors do not. The Performance Elements and Standards for Reactor Technology Training instructors provide that the instructor "Seeks feedback for both course and self-improvement from students, peers, management, and clients and acts on recommendations as appropriate." By not including questions related to instructor performance on all course evaluations, TTC management has not fully implemented the elements and standards referred to above. As previously stated, TTC managers do not routinely observe instructors in the classroom. Therefore, it is important that managers, as well as instructors, obtain feedback from students on TTC instructor performance.

In summary, without an official database to compile and analyze course evaluations, negative trends could go unnoticed and uncorrected. Additionally, failure to obtain student feedback on TTC instructor performance could negatively affect training quality.

### **Recommendations**

OIG recommends that the Executive Director for Operations:

10. Establish a more formal method to track and trend TTC course evaluations and periodically analyze trends for appropriate action.
11. Include questions specific to instructor performance on all course evaluations.

## **IV. CONSOLIDATED LIST OF RECOMMENDATIONS**

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OIG recommends that the Executive Director for Operations:

1. Revise Management Directive 13.1 to require that property inventories should include independent verification of the property by someone other than the property holder.
2. Issue interim guidance to accomplish the intent of Recommendation 1, pending revision of Management Directive 13.1.
3. Update and finalize the training policies and procedures.
4. Develop and implement a written policy that provides specific expectations for:
  - Revising course materials,
  - Tracking revisions to course materials,
  - Transferring cognizant instructor responsibilities, and
  - Organizing and storing course materials.
5. Develop and implement a written policy that provides specific expectations for the aggregate of pending changes for all course materials on an ongoing basis. The policy should address:
  - Prioritizing individual changes,
  - Identifying available resources, and
  - Scheduling the changes.
6. Develop and implement a policy requiring TTC instructors to maintain technical currency.
7. Periodically provide instructional methodology training for all TTC instructors.
8. Develop and implement a pilot program for rotational instructor positions at TTC.
9. Periodically rotate cognizant instructor responsibilities.
10. Establish a more formal method to track and trend TTC course evaluations and periodically analyze trends for appropriate action.
11. Include questions specific to instructor performance on all course evaluations.

## V. SURVEY OF FORMER STUDENTS

OIG surveyed 183 former TTC students<sup>8</sup> via email to determine the degree of satisfaction with their learning experience. Using a scale of 1 to 10, with 1 being the lowest and 10 the highest, sixty-eight former students responded, yielding a 37 percent response rate. Based on the response rate, OIG did not make any projections. Despite the level of response, the feedback received was generally favorable, as shown in the table below:

					Sample Mgmt Measure	Sample Mgmt Measure
No.	Question Description	Mean of Rating	Median of Rating	Mode of Ratings	Favorable Rating > or = 7 *	Percentage ratings < 7 *
1	Training Applicability	7.8	8	8	79%	21%
2	Training Used in Current Job	6.5	7	8	62%	38%
3	Appropriate Technical Level	7.7	8	8	77%	23%
4	Course Materials Current	8.0	8.5	9	87%	13%
5	Instructors Knowledgeable and Current	8.8	9	9	94%	6%
6	Instructor Clarity	8.5	9	9	94%	6%
7	Overall Course Rating	7.8	9	9	81%	19%

Mean: Arithmetic Average

Median: Half Values Above and Half of the Values Below

Mode: Most Common Result

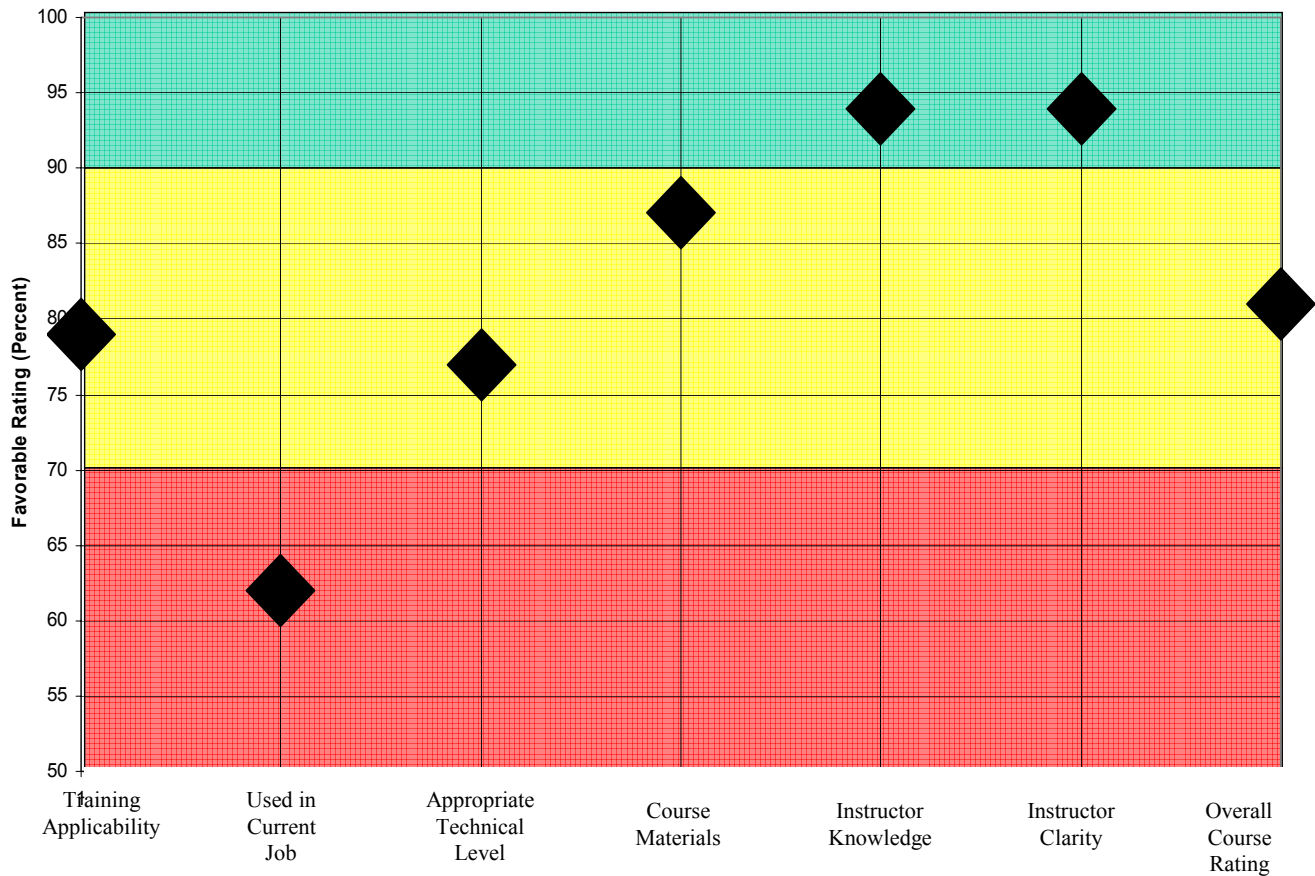
\* In the above table, a rating of "7" was used as a favorable rating for demonstration purposes only

Using 7 as the minimum favorable rating, OIG depicted the results of the survey further as follows:

The graph on the following page is for illustrative purposes only. The purpose of the graph is to show that valuable information can be learned by analyzing and presenting data from class evaluations.

<sup>8</sup> OIG identified the 183 students for survey by choosing all students who attended Reactor Technology Training and/or Specialized Technical Training during a selected month.

### Sample Management Measure



In this illustration, the green section in the graph represents areas that met student expectations. The yellow section represents areas that could possibly be in need of review by TTC management, and the red section typically represents areas where management action is necessary. Question 2 in red above relates to the degree that the students' training is used in their current job. In this instance, management action may not be necessary because several respondents may not yet have had the opportunity to put what they learned into practice.

As stated previously, the purpose of this analysis is to show that valuable information can be learned by analyzing evaluation data. The division between green and yellow at 90 percent and yellow and red at 70 percent is subjective and was chosen here for demonstrative purposes. This graph demonstrates the value of this type of illustration in identifying areas for further management review or action.

TTC management could readily perform this type of analysis on course evaluation data to identify opportunities for improvement.

## **VI. BEST PRACTICES**

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OIG auditors visited three federal government-training facilities to gain insights on practices other agencies use in the training arena. Identified best practices that could improve TTC's training program relate to the use of pre-requisite on-line courses, maintenance of course curricula in one central location and the use of post-course evaluations.

### **Pre-requisite On-line Courses**

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Pre-requisite on-line courses provide students the same basic knowledge of the subject area being taught. This could be especially helpful to TTC instructors who have noted significant differences in the knowledge and experience levels of students. While some students are recent college graduates, others have many years of experience in the nuclear industry. The disparate technical knowledge and experience of such students poses a challenge to TTC instructors who strive to keep all students engaged in the learning process.

### **Maintenance of Course Curricula**

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The maintenance of course curricula in one central location represents another best practice. For example, hard copies of all current course manuals could be maintained in a central file room, or electronic versions of the manuals could be stored on a common computer drive. This ensures that someone other than the cognizant instructor could easily locate the curriculum. This is especially helpful when unforeseen circumstances prevent the cognizant instructor from communicating to others where or how the curriculum is located. Finding C of this report addresses this key area.

### **Post-Course Evaluations**

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Post-course evaluations sent to students and their supervisors six-months to one-year after course completion can be used to determine how well the training prepared students for their work. This practice could be beneficial in determining the need for any curriculum revisions. The post-course evaluation observed was short and concise, with one or two questions and space for comments.

## **SCOPE AND METHODOLOGY**

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To accomplish the audit objectives, OIG reviewed and analyzed pertinent regulations, authoritative guidance, policies and procedures, and prior relevant OIG, GAO, and State Department reports. In addition, OIG visited three other federal agencies and called a fourth agency to obtain training best practices information; surveyed former TTC students; reviewed TTC's metrics; and tested TTC's property management system, purchase card transactions, travel expenses, and contracts.

OIG conducted interviews with selected Headquarters, TTC, and Regional officials to:

1. Gain an understanding of TTC's operations,
2. Determine current issues, problems, known deficiencies, and
3. Assess management controls.

OIG conducted this audit in accordance with Generally Accepted Government Auditing Standards from September 2005 through July 2006.

The major contributors to this report were Steven Zane, Team Leader; Kathleen Stetson, Audit Manager; Terri Cooper, Senior Auditor; and Michael Cash, Senior Technical Advisor.

**ANTICIPATED TRAINING NEEDS** <sup>(1)</sup>

Fiscal Year	Expected Number of New Hires				Total Based on Repeat Attendance <sup>(4)</sup>	Anticipated TTC Students Other Than New Hires <sup>(5)</sup>	New Reactor Training <sup>(6)</sup>	Total TTC Students <sup>(7)</sup>
	Attrition <sup>(2)</sup>	Agency Growth		Requiring TTC Training <sup>(3)</sup>				
		Total						
2006	169	231	400					2588 <sup>(7)</sup>
2007	177	323	500	400	2000	392	803	3195
2008	178	222	400	320	1600	416	875	2891
2009	199	201	400	320	1600	437	812	2849

- Notes:
- (1) A TTC representative supplied the numbers shown in the preceding table.
  - (2) From 2001 through 2005, the attrition average rate was 5.38 percent.
  - (3) Technical hires average around 80 percent of total hires.
  - (4) On average, a technical new hire will attend four classes the first year of employment. This does not take into account the number of training weeks associated with each class (one to three weeks per class).
  - (5) Other than new hires include: refresher training, Agreement State personnel, other government and state agencies, ad hoc NRC training, specialized courses, and international regulatory agencies. Annual increase based on percentage increase of FTE ceiling.
  - (6) New Reactor Training consists of new courses being developed for the Office of Nuclear Reactor Regulation and construction training needed for Region II. This number could increase based on the numbers and types of new plant applications requiring the development of additional courses.
  - 7) Number based on actual attendance figures



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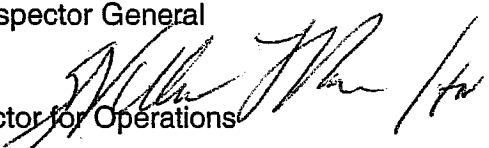


Appendix C

UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

November 22, 2006

MEMORANDUM TO: Stephen D. Dingbaum  
Assistant Inspector General for Audits  
Office of the Inspector General

FROM: Luis A. Reyes   
Executive Director for Operations

SUBJECT: COMMENTS ON DRAFT AUDIT REPORT - AUDIT OF NRC'S  
TECHNICAL TRAINING CENTER

I appreciate the insights provided by OIG discussed in the report and generally agree in principle with the recommendations in the draft audit report.

I am, however, concerned with the contrast between the negative tone of portions of the audit report and the generally favorable responses to the OIG survey of former Technical Training Center (TTC) students to determine the degree of satisfaction with their training experience. The OIG survey results are consistent with our own course feedback and training metrics, as well as other surveys such as the safety culture and climate survey and the best places to work survey. Although there is room for improvement, the audit report lacks empirical evidence that the training program is missing the target.

While I agree that the policy documents should be updated, the report implies that they are incomplete and unusable. We believe that the measure of the acceptability of a policy document should not be based on the date it was last revised, but rather on whether the contents of the policy are still applicable to how business is currently accomplished. The Office of Human Resources assessed the risk of continuing to use the policies in their current condition and determined that there was little to no impact on the operations of the TTC.

I also agree that although more detail could be added to the policy document for continuing training for instructors, the report implies that the instructors are not provided continuing training opportunities. Every instructor has completed at least one technical and one instructional methodology training activity in the past year, and most have completed many more. We have found that sending instructors out to participate in other agency activities is effective in keeping their skills current.

CONTACT: Len Reidinger, HR/HRTD  
423-855-6523

S. Dingbaum

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The OIG recommended additional, specific actions, including:

- developing and implementing a pilot program for rotational instructor positions requiring periodic rotation of cognizant instructor duties;
- establishing single official database to compile all TTC course evaluations and;
- including questions specific to instructor performance on all TTC course evaluations.

While I agree in principle that improvements can be made in trending course evaluations and instructor oversight, these solutions may not be the most efficient nor cost-effective methods to address the findings. I suggest that OIG revise these recommendations to allow the staff flexibility in determining the solutions to address the findings.

The enclosed table provides specific comments on the draft report for your consideration, including recommendations. Please contact Kathy Halvey Gibson, 415-7516, to arrange for further interactions that you believe may be warranted before you issue a final report.

Enclosure:

As stated

cc: M. Johnson, OEDO  
M. Malloy, OEDO  
P. Tressler, OEDO

### Agency Response and OIG Analysis and Response

Pg. # Note	OIG (Draft) Report	Comment	Suggested Report Language to Resolve Comment	OIG Analysis and Response																		
3	In FY 2005, TTC’s budget was approximately \$7.6 million. This included \$3.9 million for interagency agreements, commercial contracts, and various administrative expenses and \$3.7 million in salaries and benefits for 29 full-time equivalents.	We were unable to confirm the budgetary resources contained on page 3 under <u>FY 2005 TTC Statistics</u> . It appears they may have been drawn from the NRC's FY 2005 Enacted budget. We recommend that the report should be modified to reflect FY 2005 Current Budget figures to more accurately display this information. See attached for the data contained in OCFO's official records.	<table><tr><td colspan="3">TTC Budget FY 2005</td></tr><tr><td>Enacted</td><td>Current</td><td>Per IG Report</td></tr><tr><td>\$3.5M CST</td><td>\$3.1M CST</td><td>\$3.9 M IAG's/CST</td></tr><tr><td>29 FTE</td><td>30 FTE</td><td>29 FTE</td></tr><tr><td>\$3.7M S&amp;B</td><td>\$3.8 S&amp;B</td><td>\$3.7 S&amp;B</td></tr><tr><td>Total \$7.2M</td><td>Total \$6.9M</td><td>Total \$7.5M</td></tr></table>	TTC Budget FY 2005			Enacted	Current	Per IG Report	\$3.5M CST	\$3.1M CST	\$3.9 M IAG's/CST	29 FTE	30 FTE	29 FTE	\$3.7M S&B	\$3.8 S&B	\$3.7 S&B	Total \$7.2M	Total \$6.9M	Total \$7.5M	NRC’s comment states in part, “See attached for the data contained in OCFO’s official records.” However the attachment was not provided. OIG contacted the OCFO official identified as the point of contact for the revised budgetary data. OCFO was unable to support the revised data identified in the agency comment, therefore, the report remains unchanged.
TTC Budget FY 2005																						
Enacted	Current	Per IG Report																				
\$3.5M CST	\$3.1M CST	\$3.9 M IAG's/CST																				
29 FTE	30 FTE	29 FTE																				
\$3.7M S&B	\$3.8 S&B	\$3.7 S&B																				
Total \$7.2M	Total \$6.9M	Total \$7.5M																				
	For the most part, current employees will receive training in the technology of the new reactors; new employees will learn the technology of the existing reactors.	The sentence is not correct, it is an oversimplification.	Suggest deleting the sentence	Sentence deleted.																		

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Pg. # Note	OIG (Draft) Report	Comment	Suggested Report Language to Resolve Comment	OIG Analysis and Response
5	<p>III. FINDINGS</p> <p>Collectively, TTC instructors are knowledgeable, experienced and enthusiastic. While Office Directors and former TTC students were generally pleased with the training provided by TTC, OIG identified opportunities for improvement in the following areas:</p> <ul style="list-style-type: none"> <li>• Inventory practices,</li> <li>• Policies and procedures,</li> <li>• Maintenance of training materials,</li> <li>• Scheduling course revisions,</li> <li>• Training effectiveness, and</li> <li>• Course evaluations.</li> </ul>	<p>The report does not mention any concerns with the effectiveness of the training that TTC provides.</p>	<p>Change "Training effectiveness" to "Continuing training for instructors"</p>	<p>Changed finding title to "Instructor Training and Rotation"</p>

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Pg. # Note	OIG (Draft) Report	Comment	Suggested Report Language to Resolve Comment	OIG Analysis and Response
5	As a result, TTC's training mission could be negatively impacted if property cannot be located when required.	The report does not give any examples of TTC property that was lost or misplaced to substantiate this opinion. In fact, in all cases, all TTC property was located for each annual property inventory and for the property inventory that was performed for OIG during their audit.	Although there have been no cases where TTC property could not be located, TTC's training mission could be negatively impacted if property cannot be located when required.	The report says "could be negatively impacted." OIG raised the potential risk to the agency if property cannot be located.

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Pg. # Note	OIG (Draft) Report	Comment	Suggested Report Language to Resolve Comment	OIG Analysis and Response
5	<p><u>Noncompliance with GAO Standards for Internal Control</u></p> <p>TTC staff did not perform an independent physical inventory of its property, but rather relied on individual property holders to provide electronic confirmation of the property's existence and location. To conduct inventory, the TTC property custodian sent property holders an e-mail listing the inventory items assigned to them. The property holders would reportedly inventory the property assigned to them and confirm the item's existence and location via e-mail to the TTC property custodian who subsequently prepared the inventory report. Finally, the Director of TTC Operations would send a memo reporting those results to the Office of Administration.</p>	<p>TTC was in compliance with these documents. The description of the TTC inventory process was not completely and accurately reflected in the report. Additionally, the sentence "The property holders would <i>reportedly</i> inventory the property assigned to them..." (emphasis added) seems to question the integrity of the TTC property holders. There is no evidence or discussion in the report to substantiate this opinion.</p>	<p><u>TTC Practice for Conducting Property Inventories</u></p> <p>TTC staff did not perform an independent verification of its property, but rather relied on individual property holders to provide electronic confirmation of the property's existence and location. To conduct this inventory, the TTC property custodian sent property holders an e-mail with an attachment listing the inventory items assigned to them. The property holders would physically inventory the property assigned to them and confirm the item's existence and location via e-mail to the TTC property custodian. The property custodian then resolved any discrepancies and prepared the inventory report. Finally, the Director of TTC Operations would review the results of the inventory and send a memo reporting the inventory results to the Office of Administration at Headquarters.</p>	No change.

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Pg. # Note	OIG (Draft) Report	Comment	Suggested Report Language to Resolve Comment	OIG Analysis and Response
6	<p>MD 13.1 provides that regional offices should conduct self-inventories, but does not require independent verification of property by someone other than the property holder. Effective implementation of segregation of duties reduces the risk of error or fraud so that no single person can adversely impact the accuracy and integrity of the physical inventory count.</p> <p><u>Recommendation</u> OIG recommends that the Executive Director for Operations:</p> <p>1. Revise Management Directive 13.1 to clarify that self-inventories performed by the regions should include independent verification of the property by someone other than the property holder.</p>	<p>Regional offices may not be the only offices that perform property inventories using methodology similar to TTC. If independent verification is required, MD 13.1 should reflect this requirement for all offices.</p>	<p>MD 13.1 requires conducting physical inventories of all NRC equipment every 2 years, but does not require independent verification of property by someone other than the property holder. Effective implementation of segregation of duties reduces the risk of error or fraud so that no single person can adversely impact the accuracy and integrity of the physical inventory count.</p> <p><u>Recommendation</u> OIG recommends that the Executive Director for Operations:</p> <p>1. Revise Management Directive 13.1 to require that property inventories should include independent verification of the property by someone other than the property holder.</p>	<p>MD 13.1 states the following: "At headquarters, DCPM staff will conduct physical inventories jointly with the responsible property custodian." This provides independent verification of property by someone other than the property holder.</p> <p>Changed wording of recommendation to the language suggested by HR. See report, pg. 6.</p>

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Pg. # Note	OIG (Draft) Report	Comment	Suggested Report Language to Resolve Comment	OIG Analysis and Response
7	<p><u>B. Policies and Procedures</u></p> <p>All of TTC's policies and procedures are outdated and incomplete. They do not comply with Office of Management and Budget Circular A-123, <i>Management's Responsibility for Internal Control</i> (OMB Circular A-123) or the GAO Standards. This condition exists because HR management has not made finalizing policies and procedures a priority. Without established policies and procedures to clearly communicate management's expectations regarding authorities and responsibilities, staff may use inconsistent and less than optimal methods in carrying out their duties.</p>	<p>This overstates the condition of TTC policies and procedures. Updating TTC policies is an activity in HR's 2006 and 2007 Operating Plans. Updating these policies has been prioritized lower than conducting training, maintaining course manuals and materials, and staff hiring, training and development. As recommended by the referenced OMB Circular and GAO Standards, HR management assessed the risk of continuing to use the policies in their current condition and determined that there was little to no impact on the operations of TTC. TTC has established policies and procedures. They were completely revised and approved in 1995. Since then the policies have been updated individually to incorporate significant improvements or essential changes. An example is the</p>	<p><u>B. Policies and Procedures</u></p> <p>All of TTC's policies and procedures have not been updated and draft revisions since 1995 have not been formally approved by management. This does not comply with Office of Management and Budget Circular A-123, <i>Management's Responsibility for Internal Control</i> (OMB Circular A-123) or the GAO Standards. This condition exists because HR management has determined that using the draft policies poses minimal risk to TTC operations. Without updated and approved policies and procedures to clearly communicate management's expectations regarding authorities and responsibilities, staff may use inconsistent and less than optimal methods in carrying out their duties.</p>	<p>At several points during the audit, OIG discussed the issue of outdated policies with both HR and TTC management. In OIG's opinion, it is simply not a good business practice to leave policies and procedures in draft form for more than ten years. The agency's working group on Management Directives expressed a similar view on page five of its report.</p> <p>No change to report language.</p>

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Pg. # Note	OIG (Draft) Report	Comment	Suggested Report Language to Resolve Comment	OIG Analysis and Response
		<p>revision of Policy Document (PD) 7, TTC Staff Qualification", to parallel the improvements made to the qualification program for inspectors (IMC 1245). PD 7 was also reviewed and updated in 2003 in anticipation of many instructor retirements and new hires. The updated PDs have been approved for use, but have not been formally signed by the ADTD pending a planned revision to update and incorporate PDKM.</p> <p>Examples of the types of outdated information in the PDs include organizational titles and the use of hard copy course catalogs and course manuals vs the availability of these documents on the training website. To ensure that staff are aware of current management expectations, the staff training and qualification process</p>		

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		(documented in TTC Policy Document 7) requires staff review of the PDs and discussion with the supervisor. The Supervisor's signature on the qualification card signifies that they have discussed the PDs with the qualifying individual. Instructors are involved with and review and comment on revisions to PDs before they are implemented. Management's continuing involvement and oversight ensures that expectations regarding authorities and responsibilities are clearly communicated to ensure consistency and effectiveness of the staff in carrying out their duties.		
7	<u>TTC Policies and Procedures Are Outdated</u>	This title overstates the condition of TTC policies and	<u>TTC Policies and Procedures Need to be Revised and Updated</u>	Included suggested change to heading: <u>TTC Policies and</u>

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Pg. # Note	OIG (Draft) Report	Comment	Suggested Report Language to Resolve Comment	OIG Analysis and Response
	<p><u>and Incomplete</u></p> <p>The policies and procedures in use at TTC address a variety of areas including, but not limited to:</p> <ul style="list-style-type: none"> <li>• The general duties and responsibilities associated with TTC positions;</li> <li>• How TTC meets the technical training needs of the NRC;</li> <li>• Course scheduling;</li> <li>• Course administration;</li> <li>• The TTC staff qualification program;</li> <li>• The training materials control program; and</li> <li>• Simulator training.</li> </ul> <p>These policies and procedures are outdated and incomplete. Seven of nine policies are in draft form; six have been in draft form for more than 10 years. Of the two policies that are in final form, one is signed, but undated,</p>	<p>procedures and implies that they are unusable. The measure of the acceptability of a policy should not be based on the date it was last revised, but rather on whether the contents of the policy are still applicable to how business is currently accomplished. The discussion does not completely and accurately reflect the condition of the PDs or internal controls in place at TTC. It appears that this is partly due to OIG being provided only copies of the working drafts, and not the signed 1995 final documents.</p> <p>The policies were written at a reasonable level such that when combined with the experience level of the TTC staff, the qualification process, and on-the-job experiences, the instructor is knowledgeable about the practices and expectations of the position. HR expected</p>	<p>The policies and procedures in use at TTC address a variety of areas including, but not limited to:</p> <ul style="list-style-type: none"> <li>• The general duties and responsibilities associated with TTC positions;</li> <li>• How TTC meets the technical training needs of the NRC;</li> <li>• Course scheduling;</li> <li>• Course administration;</li> <li>• The TTC staff qualification program;</li> <li>• The training materials control program; and</li> <li>• Simulator training.</li> </ul> <p>The policies were revised and approved in 1995. Two of the policies have been updated but are labeled draft and have not been formally approved (i.e., signed by management). The other policy documents are labeled draft and are in various stages of revision. TTC relies on ongoing management oversight and communication to ensure staff are current and consistent in their application of the policies. Opportunities to improve the documentation of TTC practices are identified in subsequent sections of this report.</p>	<p><u>Procedures Need to be Revised and Updated</u></p> <p>OIG reviewed the documents provided. Following the issuance of the discussion draft, the Office of Human Resources had the opportunity to provide copies of the signed 1995 final documents.</p> <p>During the original visit to TTC, auditors were told that the policies and procedures were being revised and updated. Subsequently, OIG was told that revisions had been put on hold so that the policies and procedures related to all training could be addressed at the same time.</p> <p>The issue of "ongoing management oversight and communication to ensure that staff are current and consistent in their application of the policies" was not presented to OIG during discussions with TTC management on the need</p>

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	though an attachment is dated November 1995; the other policy is dated August 1993, but is unsigned.	that some areas would be identified for expansion during the planned review and update. TTC has a long track record of conducting an exceptional training program with the policies in place in this condition (working drafts.)  Some opportunities to improve the documentation of TTC practices are identified in subsequent sections of this report.		to revise the policies and procedures.  The agency did not provide any factual information to refute the report finding.  OIG stands by the language in the report.
7	According to both OMB Circular A-123 and the GAO Standards, policies, procedures, and mechanisms should be in place to help ensure that agency objectives are met. Further, information that is relevant, reliable, and timely should be communicated to appropriate personnel at all levels within an organization.	Policies, procedures, and mechanisms are in place at TTC to help ensure agency objectives are met. Information that is relevant, reliable, and timely is communicated to appropriate personnel at all levels within TTC. In addition to the policy documents and discussions during the qualification process noted above, TTC managers meet via VTC or phone with HR management	No change suggested. These are statements of fact.	Agree.

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Pg. # Note	OIG (Draft) Report	Comment	Suggested Report Language to Resolve Comment	OIG Analysis and Response
		at least twice per week. Current information that is relevant for TTC staff is passed along to them by their supervisor. TTC relies on ongoing management oversight and communication to ensure staff are current and consistent in their application of the policies. This has proven effective in maintaining a high quality training operation for at least the past 10 years.		
7	HR management, however, has not made finalizing TTC's policies and procedures a priority. When contacted by OIG, they indicated that they plan to issue consolidated training policies which would also include the Professional Development and Knowledge Management Branch at Headquarters.	HR management has made finalizing policies and procedures a priority. Updating TTC policies is an activity in HR's 2006 Operating Plan. Updating these policies has been prioritized lower than conducting training, maintaining course manuals and materials, and staff hiring, training and development. As stated by the referenced OMB Circular and GAO Standards, HR	When contacted by OIG, HR management indicated that they plan to issue updated and consolidated training policies which would also include the Professional Development and Knowledge Management Branch at Headquarters.	The suggested report language dilutes the substance of the finding. OIG stands by the language in the report.

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Pg. # Note	OIG (Draft) Report	Comment	Suggested Report Language to Resolve Comment	OIG Analysis and Response
		<p>management assessed the risk of continuing to use the policies in their current condition and determined that there was little to no impact on the operations of TTC.</p> <p>Since the staff of NRR is significantly increasing to prepare for licensing new reactors, the need for technical training in HQ is increasing. To more effectively and efficiently meet this need, HR is in the process of hiring technical instructors in HQ in PDKM. This will allow significant reduction in the travel costs for TTC instructors to come to HQ to teach or costs for HQ students to travel to TTC. It provides for face-to-face working relationship with NRR managers and subject matter experts. It will also allow HQ and TTC instructors to back each other up providing more flexibility for course scheduling and</p>		

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Pg. # Note	OIG (Draft) Report	Comment	Suggested Report Language to Resolve Comment	OIG Analysis and Response
		conduct. Therefore, the PDs need to be revised to incorporate this change. This cannot occur until a number of HQ instructors are on-board, complete their qualification, and are familiar with NRC and HR programs and processes. This will also free up TTC instructors time as the HQ instructors begin to teach courses that currently TTC instructors travel to HQ to teach. Then we will have the resources and the knowledge base to effectively revise the PDs. For efficiency, at this same time, we plan to do a complete review and update of the PDs.		
8	Without current policies and procedures new TTC staff could experience difficulty understanding their responsibilities and authorities and take longer to do what is expected of them. Additionally, existing	This implies that TTC policies and procedures are unusable in their current form and that TTC staff do not know how to perform their duties. The report does not include any examples that support these statements. The	Suggest this paragraph be removed.	Keep paragraph. This paragraph contains the potential effect of using outdated policies and procedures. The potential consequences identified in the OIG report remain valid concerns which agency

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Pg. # Note	OIG (Draft) Report	Comment	Suggested Report Language to Resolve Comment	OIG Analysis and Response
	TTC staff may be unsure of management's expectations for carrying out the day-to-day operations of TTC.	<p>understanding of individual duties and management's expectations are addressed thoroughly during the qualification process (Policy 7) and in Policy 4, "Course Administration." Section F of Policy 7 describes the roles of the course instructors, the Course Director and the Course Cognizant Instructor in adequate detail. In addition, qualifying instructors perform each of these roles under the tutelage of experienced instructors and discuss each role with supervision prior to receiving a signature for those items in their qualification cards, per Policy 7.</p> <p>The likelihood that "new TTC staff could experience difficulty understanding their responsibilities and authorities and take longer to do what is expected of them or existing TTC staff being unsure of management's</p>		management should address as discussed in the finding.

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Pg. # Note	OIG (Draft) Report	Comment	Suggested Report Language to Resolve Comment	OIG Analysis and Response
		expectations for carrying out the day-to-day operations of TTC" is considered to be low considering the focus of on-site supervision to the needs of new employees and the experience and grade levels of TTC employees in general. Further the potential effect and impact of the risks on the agency are low and easily identified and mitigated.		
8	<u>Recommendation</u>  OIG recommends that the Executive Director for Operations:  3. Formalize and implement policies and procedures related to TTC operations, regardless of whether they are combined with the Professional Development and Knowledge Management Branch.	Policy documents are formal and implemented at TTC. There is no bases included in the report that supports updating and revising the training policies and procedures for TTC operations separately from PDKM. PDKM and TTC staff teach at the PDC and the TTC so the processes and procedures for operations of these facilities need to be consistent, and both staffs must be involved in the revisions to ensure they are accurate and adequate for all	<u>Recommendation</u>  OIG recommends that the Executive Director for Operations:  3. Update and finalize the training policies and procedures.	Changed the recommendation in the report to: "Update and finalize the training policies and procedures," as suggested by HR. See report, pg. 8.

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Pg. # Note	OIG (Draft) Report	Comment	Suggested Report Language to Resolve Comment	OIG Analysis and Response
		staff and both locations. Effectiveness and efficiency considerations require that the PDs be updated at the same time they are revised to include PDKM.		
9	<p><u>C. Maintenance of Training Materials</u></p> <p>In OIG's opinion, prudent business practices call for a systematic and well communicated method of maintaining training materials to ensure currency, accuracy and completeness. At TTC, each course has a cognizant instructor assigned to maintain training materials. OIG found that TTC cognizant instructors employ various methods of maintaining training materials and do not systematically communicate their methods to other instructors or management. Further, the</p>	<p>This section does not completely and accurately reflect TTC method of maintaining training materials. It implies that course materials are not maintained properly. There is no evidence or examples to support this implication in the report.</p> <p>We agree that there should be a systematic and well communicated method of maintaining training materials. However, in a audit report, we would expect a standard cited as opposed to "prudent business practices". Business practices that are prudent to one organization may not be prudent for another organization.</p>	<p><u>C. Maintenance of Training Materials</u></p> <p>Prudent business practices call for a systematic and well communicated method of maintaining training materials to ensure currency, accuracy and completeness. At TTC, each course has a cognizant instructor assigned to maintain training materials. TTC cognizant instructors employ various methods of collecting, recording and tracking changes needed to their training materials. OIG found that TTC cognizant instructors do not systematically communicate the status of their revisions to other instructors or management. Accordingly, turnover of materials from one instructor to another can be difficult to execute. Further, written policies do not specifically address TTC practices for maintaining course materials or cognizant instructor duties and responsibilities with regard to maintaining course materials.</p>	<p>OIG stands by the language in the report.</p>

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	<p>procedures for maintaining training materials are ad hoc and inconsistent. TTC management does not review or approve the various maintenance methods. Accordingly, turnover of materials from one instructor to another can be difficult to execute. There is a risk that out-of-date or erroneous training materials will be used in courses.</p>	<p>The TTC instructors are training experts. As such, they are empowered to implement whatever method of collecting, recording, and tracking changes needed to their assigned training materials works best for them.</p> <p>A systematic method for maintaining course materials is currently implemented at TTC and there is no indication that this method is deficient. Each course has a cognizant instructor assigned to maintain training materials. TTC cognizant instructors employ various methods of collecting, recording and tracking changes needed to their training materials. Controlled copies of training materials are maintained electronically in a designated folder on the TTC network drive. The documents are read only access, except for the assigned cognizant</p>		

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		<p>instructor and the manager for the subject area. These are the files from which course manuals and materials are obtained for each scheduled course. Identification of needed changes is accomplished by review of student course evaluation forms, instructor feedback, management input and post course review meetings of assigned instructors. Routine changes such as fixing grammatical problems and minor technical revisions are accomplished by the assigned cognizant instructor. Major modifications in response to industry or regulatory changes are analyzed and discussed with the appropriate manager to determine resource requirements and priorities. This is an area we plan to expand in our update of the policy documents.</p>		

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		The risk that an instructor may use outdated training materials is very unlikely since all instructors use the same controlled copy from the network drive.		
9	<p><u>Inconsistent Maintenance of Training Materials</u></p> <p>Cognizant instructors have chosen a variety of methods for (1) revising course materials, (2) tracking revisions to course materials, and (3) organizing and storing course materials. The degree of rigor, formality and available documentation varies from cognizant instructor to cognizant instructor.</p> <p>At times, instructors teach courses for which they are not the cognizant instructor and, therefore, are not directly responsible for</p>	<p>We agree that the documentation of TTC practices for maintaining course materials needs improvement. However, the report does not give any examples that substantiate problems with the practices at TTC used to maintain course materials. There appear to be 2 issues here: (1) turnover of needed course revisions from one cognizant instructor to another, and (2) maintaining controlled copies of course materials.</p> <p>The first sentence is incorrect. All instructors teach in all courses for which they are qualified, not just for those for which they are</p>	<p><u>Lack of Documented Policy for Maintaining Training Materials</u></p> <p>Cognizant instructors <b>are assigned to maintain the course materials for each TTC course. Cognizant instructors are responsible for (1) identifying needed changes to course materials (2) revising course materials, (3) tracking revisions to course materials, and (4) maintaining the controlled copy of course materials current. Cognizant instructors have chosen a variety of methods for collecting, recording, and tracking changes needed to their assigned course materials.</b> The degree of rigor, formality and available documentation varies from cognizant instructor to cognizant instructor. There is no systematic process for cognizant instructors to communicate to other instructors the status of revisions to their course materials.</p>	<p>The suggested change to the heading does not conform with the discussion.</p> <p>Changed heading to "Inconsistent Methods of Maintaining Training Materials."</p> <p>OIG accepted the suggested language changes shown in bold in the previous column, but kept last sentence of OIG report which reads as follows: "There is no systematic process for cognizant instructors to communicate to other instructors the methods used to maintain their course materials."</p>

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	<p>maintaining the training materials. Additionally, they may not know how to locate the most current training materials. There also is no systematic process for cognizant instructors to communicate to other instructors the methods used to maintain their course materials.</p>	<p>cognizant instructor. All staff are expected to evaluate the need for changes to course materials during preparation and conduct of courses. They are expected to communicate needed changes to the cognizant instructor (and the cognizant supervisor if a major revision is needed.)</p> <p>The location of the controlled copies of training materials is communicated to instructors as part of the instructor qualification process. Given that the course materials are used frequently, it is unlikely that an instructor will forget where the controlled copies are located. However this could easily be remedied by asking a peer or the supervisor.</p> <p>The TTC instructors are training experts. As such, they are empowered to implement whatever method of gathering, recording, and</p>		

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		tracking changes needed to their assigned training materials works best for them. There is no need for cognizant instructors to do this the same way. TTC has had two unusual situations where the cognizant instructor was not available to transfer their duties to another instructor when required. That prompted TTC management to begin to assign a primary and backup cognizant instructor for each course to better facilitate transfer of cognizant instructor duties from one instructor to another.		
9  9	OIG found that written policies do not specifically address methods for updating and making available training materials for all courses. In addition, TTC management has not reviewed or approved the various means used to maintain training materials.	A systematic method for maintaining course materials is currently implemented at TTC. We agree that this should be documented in a PD.  TTC management has reviewed and approved the methods for maintaining	OIG found that written policies do not specifically address TTC practices for maintaining course materials or cognizant instructor duties and responsibilities with regard to maintaining course materials. TTC management relies on the supervisor to verbally communicate management expectations and practices for maintaining course materials during the instructor qualification process and when policies change. A documented policy regarding cognizant instructor duties and	The suggested report language dilutes the substance of the finding. OIG stands by the language in the report.

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	As a result, there is a risk that an instructor substituting for a cognizant instructor may use outdated training materials. The outdated training materials may not include recent operating experience.	training materials. These are communicated by the supervisor to the staff during their qualification process. TTC management is aware that cognizant instructors use various means to collect, record, and track changes needed to their assigned training materials. This is appropriate given their grade level and expertise. The risk that an instructor may use outdated training materials is very unlikely since all instructors use the same controlled copy from the network drive.	responsibilities for maintaining course materials would provide a higher level of confidence that course materials are being maintained appropriately and consistently.	
10	Further, if a cognizant instructor takes a new position or leaves the agency, that individual's responsibilities would be given to another agency employee. Since the maintenance processes are not systematic, the turnover of course materials can be	Current practice is to have a primary and a backup cognizant instructor. This will address the turnover issue and will be added to the appropriate procedure.	Further, if a cognizant instructor takes a new position or leaves the agency, that individual's responsibilities would be given to another agency employee. If there is no opportunity for turnover between the two cognizant instructors, the turnover of course materials can be difficult to execute and can result in an inefficient use of agency resources during the turnover process.	OIG stands by the language in the report.

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	difficult to execute and can result in an inefficient use of agency resources during the turnover process.			
10	<p><u>Recommendation</u></p> <p>OIG recommends that the Executive Director for Operations:</p> <p>4. Develop and implement a written policy that provides specific expectations for:</p> <ul style="list-style-type: none"> <li>• Revising course materials,</li> <li>• Tracking revisions to course materials, and</li> <li>• Organizing and storing course materials.</li> </ul>	<p>The OIG survey results do not support any process deficiencies in maintaining course materials. However, documenting our processes in a PD would provide a higher confidence level that course materials are being maintained appropriately and consistently.</p>	<p><u>Recommendation</u></p> <p>OIG recommends that the Executive Director for Operations:</p> <p>4. Document in a written policy the TTC practices for:</p> <ul style="list-style-type: none"> <li>• Revising course materials,</li> <li>• Tracking revisions to course materials,</li> <li>• Transferring cognizant instructor responsibilities, and</li> <li>• Organizing and storing controlled course materials.</li> </ul>	<p>Included extra bullet as suggested by the agency - "Transferring cognizant instructor responsibilities" - in recommendation.</p>
11	<p><u>D. Scheduling Course Revisions</u></p> <p>OIG found that TTC management does not obtain information needed to establish respective priorities and resource requirements relating to</p>	<p>This section should be removed. TTC management does obtain information needed to establish respective priorities and resource requirements relating to pending major revisions of training materials that are beyond the capability</p>	<p>Delete this section.</p>	<p>Keep section.</p> <p>The agency has not provided any evidence that TTC management has internal controls for prioritizing the aggregate of needed revisions, identifying needed resources, and scheduling revisions.</p>

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	<p>pending revisions of training materials.</p> <p>There is no specific written policy for:</p> <ul style="list-style-type: none"> <li>• Prioritizing the aggregate of needed training material revisions,</li> <li>• Identifying needed resources, and</li> <li>• Scheduling revision work to meet course-scheduling needs.</li> </ul> <p>Consequently, resources may not be available to ensure that needed course revisions are made in a timely manner. Additionally, there is a risk that training materials may not be completely updated for courses. Finally, excessive costs such as instructor overtime or contractor costs may be incurred to meet course deadlines.</p>	<p>of the cognizant instructor to accomplish alone in the time scheduled for course maintenance. Routine changes such as fixing grammatical problems and minor technical revisions are accomplished by the assigned cognizant instructor in their assigned course development time. Major modifications in response to industry or regulatory changes are analyzed and discussed with the appropriate manager to determine resource requirements and priorities. After the major revisions of course materials to incorporate the Shoreham and Trojan simulators, PD 9 was developed for any future major revisions to course materials, however there have been none required over the past 10 years.</p> <p>There is no evidence in the report that training materials</p>		<p>Given the lack of internal controls, the potential consequences identified in the OIG report remain valid concerns which agency management should address as discussed in the finding.</p>

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		have not been updated for courses or excessive costs such as instructor overtime or contractor costs have been incurred to meet course deadlines.		
11	<p><u>Improvements Needed in Scheduling Course Revisions</u></p> <p>In addition to classroom related responsibilities, a cognizant instructor is responsible for revising course materials for the assigned course. TTC offers a number of courses, each of which may have several changes pending at a given time.</p>	<p>The majority of cognizant instructors are responsible for only one course. They are expected to prioritize and complete pending changes, other than major revisions, within their assigned course development time. There are a small number of instructors qualified to make revisions to courses in each curriculum area. Therefore managing the workload for revising courses does not need to consider the broader needs of the TTC organization. Completing the majority of course revisions is not a complicated problem requiring a documented process.</p>	Delete this section.	<p>Keep section.</p> <p>The agency has not provided any evidence that TTC management has internal controls for prioritizing the aggregate of needed revisions, identifying needed resources, and scheduling revisions. Given the lack of internal controls, the potential consequences identified in the OIG report remain valid concerns which agency management should address as discussed in the finding.</p>
11	<p>Cognizant instructors manage the workload for revising courses in isolation from the broader needs of the TTC organization. OIG identified several deficiencies related to this area. Specifically, there</p>	<p>When a cognizant instructor</p>		

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	<p>are no processes for:</p> <ul style="list-style-type: none"> <li>• Identifying and reporting pending changes for all courses to TTC management;</li> <li>• Prioritizing, allocating resources, and scheduling changes for the aggregate of all pending course changes; and</li> <li>• Tracking past changes to determine whether certain changes have previously been addressed or found to be unnecessary.</li> </ul> <p>These deficiencies have occurred because HR and TTC management have not established written policies to specifically address prioritizing the aggregate of needed training material revisions, identifying needed resources and scheduling revision work to meet course-scheduling needs. Available resources are not</p>	<p>informs the supervisor that a revision is necessary for the subsequent course and is beyond his capability to complete within the scheduled course development time, the supervisor determines priorities and assigns the necessary resources to complete necessary course revisions prior to the courses. This is standard practice everywhere in the agency. If a staff person cannot accomplish their assigned work, for whatever reason, they are expected to raise the issue to management. There are no examples cited in the report to substantiate any deficiencies in this area. Course revisions necessary to maintain the quality of TTC courses have been accomplished prior to conduct of the course in all cases. TTC has not conducted any course with an unacceptable quality (i.e. that would</p>		

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	being assigned to match the priorities of all needed course revisions. As a result, resources may not be available to ensure that needed course revisions are made in a timely manner.	negatively impact student learning) of course materials. There are infrequently extenuating circumstances (i.e. course inserted in schedule to meet agency need, unavailability of cognizant instructor) where course revisions have had to be made under a very tight schedule. TTC management properly assigned resources to address these situations. TTC is now assigning a primary and backup cognizant instructor for each course to reduce the impact of these types of situations. This will be incorporated in the actions for Section C.		
12	<u>Recommendation</u>  OIG recommends that the Executive Director for Operations:  5. Develop and implement a written policy that provides specific	This recommendation should be deleted. Prioritizing and assigning work is a routine management function.  Expectations and responsibilities of cognizant instructors for maintaining course materials will be	Delete recommendation.	Recommendation retained.

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	<p>expectations for the aggregate of pending changes for all course materials on an ongoing basis. The policy should address:</p> <ul style="list-style-type: none"> <li>• Prioritizing individual changes,</li> <li>• Identifying available resources, and</li> <li>• Scheduling the changes.</li> </ul>	<p>included in an appropriate PD in response to Finding C/Recommendation 4.</p>		
13	<p><u>E. Training Effectiveness</u></p> <p>Opportunities exist to enhance training effectiveness at TTC. To optimize instructional methodology and keep courses technically fresh and up-to-date, instructor training and instructor rotation need improvement. In OIG's opinion, sound business practices and the GAO Standards call for such improvements. As a result of HR management's lack of attention to these areas, students may not be</p>	<p>This section is titled "Training Effectiveness", however the section deals with instructor effectiveness. Training Effectiveness is broader than instructor attributes and generally includes anything that results in an acceptable level of learning by the students. There is no evidence or examples given in the report to substantiate ineffective training or instructors, or that students are not receiving current or high quality training. In fact, the OIG's survey results refute these assertions.</p>	<p><u>E. Continuing Training for Instructors</u></p> <p>Opportunities exist to enhance the planning and documentation of continuing training for instructors at TTC. To ensure TTC courses continue to be technically fresh and up-to-date, the planning and documentation of instructor continuing training need improvement. In OIG's opinion, sound business practices and other relevant criteria call for such improvements.</p>	<p>Changed finding title to "Instructor Training and Rotation"</p> <p>Other editorial changes made to this section.</p>

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	getting the most current or best quality training available.			
13	<u>Instructor Training</u>  Instructors need to continuously sharpen their skills and receive intellectual stimulation. The GAO Standards state that, "Only when the right personnel for the job are on board and are provided the right training, tools, structure, incentives, and responsibilities is operational success possible." Instructor training includes technical training and instructional methodology training.		No changes suggested. These are statements of fact.	
13	<u>Technical Training</u>  Most TTC instructors stated that, to stay current in their technologies, they rely on the NRC Daily Reports and discussions with their	This section does not accurately reflect the training provided for instructors at TTC. The last sentence states "While some	<u>Technical Training</u>  Most TTC instructors stated that, to stay current in their technologies, they rely on the NRC Daily Reports and on discussions with their students and/or industry contacts. Instructors should be in a continuous learning mode – if they are not teaching	At the exit conference, HR provided a table listing instructor developmental and refresher activities. Most of the information reflected in the table pertained to training classes taken and field

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	<p>students. In OIG's opinion, sound business practice dictates that instructors should be in a continuous learning mode - if they are not teaching or preparing/updating teaching materials, they could be learning by such means as:</p> <ul style="list-style-type: none"> <li>• Participating as observers or members of an inspection team at a nuclear power plant,</li> <li>• Obtaining qualification as an inspector, and/or</li> <li>• Completing relevant technical training courses.</li> </ul> <p>While some instructors are in the process of obtaining current field experience, many are not.</p>	<p>instructors are in the process of obtaining current field experience, many are not. As shown in the attached table, all instructors have obtained current field experience within the last two years. As suggested as a sound business practice, TTC instructors, when they are not teaching or preparing/updating teaching materials, are learning by:</p> <ul style="list-style-type: none"> <li>• Participating as observers or members of an inspection team at a nuclear power plant,</li> <li>• Obtaining qualification as an inspector, and/or</li> <li>• Completing relevant technical training courses as well as other activities.</li> </ul>	<p>or preparing/updating teaching materials, they could be learning by such means as:</p> <ul style="list-style-type: none"> <li>• Participating as observers or members of an inspection team at a nuclear power plant,</li> <li>• Obtaining qualification as an inspector, and/or</li> <li>• Completing relevant technical training courses.</li> </ul> <p>As a matter of practice, TTC instructors routinely participate in these activities.</p>	<p>experience obtained in calendar year 2006, after our site visit.</p>
13	<p><u>Instructional Methodology Training</u></p> <p>TTC instructors have not had instructional.</p>	<p>This section does not accurately reflect the training provided for instructors at</p>	<p><u>Instructional Methodology Training</u></p> <p>TTC instructors have had minimal instructional training methodology training. TTC instructors are provided formal training, as the need is identified</p>	

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	<p>methodology training for at least 10 years. One instructor has not had this training for over 25 years. Many new instructors employed by TTC for fewer than 5 years received instructor training provided by their previous employers. One new instructor stated that typical industry practice requires instructor training every two years. The GAO Standards address management's commitment to competence stating in part, "All personnel need to possess and <u>maintain</u> a level of competence that allows them to accomplish their assigned duties..." (Underlining added for emphasis.) For optimum effectiveness, instructors need periodic instruction in new and innovative methods of presenting course materials.</p>	<p>TTC. TTC instructors are provided formal training, as the need is identified either individually or for TTC instructors as a group, on new instructional methods being evaluated or implemented at TTC, or for refresher training, for example training on Qwizdom (an instructional tool for anonymously quizzing students during the class to ascertain understanding of course material), Toolbook (e-learning authoring tool), NEWS (tool for presenting graphical simulations of plant systems and parameters in the classroom), and PowerPoint (replacing overheads). Since the TTC instructors are technical and training experts, TTC also relies on informal on-the-job training, coaching, and knowledge transfer by supervisors and more experienced instructors.</p>	<p>either individually or for TTC instructors as a group, on new instructional methods being evaluated or implemented at TTC. Many new instructors employed by TTC for fewer than 5 years received instructor training provided by their previous employers. One new instructor stated that typical industry practice requires instructor training every 2 years. The GAO Standards address management's commitment to competence stating in part, "All personnel need to possess and maintain a level of competence that allows them to accomplish their assigned duties..." (Underlining added for emphasis.) For optimum effectiveness, instructors need periodic instruction in new and innovative methods of presenting course materials.</p> <p>The TTC policy for continuing training for instructors does not contain any specific expectations for technical or instructional methodology training and relies on the supervisor and instructor to determine needed training on a case-by-case basis. Further, with the exception of some formal classroom training, continuing training activities are not documented in the official training records.</p>	<p>The training classes referred to in the Comment section (Qwizdom, NEWS, and PowerPoint) were taken during September and October 2006 - after the period covered by this audit.</p>

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14	HR management has not established a policy implementing a formal mechanism to ensure that all TTC instructors keep technically current and stay up-to-date with innovative teaching techniques. Consequently, TTC students may not be getting the most current or best quality training available.	<p>HR management has established a policy for continuing instructor training in Policy Document 7:</p> <p>“G. CONTINUING TRAINING</p> <p>Continuing training for qualified individuals shall be determined by the employee and supervisor and may be included in the Individual Development Plan (IDP).”</p> <p>To maintain technical and instructional currency, TTC practice is for instructors to participate in inspection teams, obtain qualification as an inspector, complete relevant technical or instructional training courses, attend conferences, make plant visits, etc. as determined by the instructor and supervisor as most appropriate for the individual</p>		<p>During the audit field work, a TTC manager stated that instructors were being encouraged to participate on inspection teams and to obtain qualification as an inspector. Such participation was characterized as optional.</p>

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		<p>instructor considering available opportunities and instructors' teaching and course development schedules. All instructors have participated in one or more of these activities to maintain their technical and instructional expertise. Consequently, innovative teaching techniques such as Qwizdom and NEWs have been implemented at TTC.</p> <p>The report further states "Consequently, TTC students may not be getting the most current or best quality training available." There is no basis for this statement. In fact, the OIG's own survey results and HR's training metrics appear to contradict this statement.</p>		
14	<p><u>Instructor Rotation</u></p> <p>Instructor rotation encompasses rotation of instructors in and out of TTC as well as rotation of</p>	<p>The report states "The concept of creating rotation instructor positions in TTC would create an environment in which new ideas, fresh perspectives, and recent</p>	<p>We suggest this section and the accompanying recommendation be moved to the best practices section of the report.</p>	<p>"Best Practices" discussions are informational and do not include any recommendations.</p> <p>The placement of this section was not changed.</p>

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14	<p>cognizant instructor responsibilities as discussed below.</p> <p><u>Rotational Instructor Positions</u></p> <p>The concept of creating rotational instructor positions in TTC would create an environment in which new ideas, fresh perspectives, and recent hands-on experience would be of great value and benefit to TTC, its students, and the NRC. Currently, TTC instructors do not rotate in and out of TTC and typically remain at TTC until retirement. When contacted by OIG, the Director of the Office of Human Resources seemed receptive to the concept of creating rotational instructor positions. He mentioned the possibility of creating such positions on a pilot basis. One federal agency</p>	<p>hands-on experience would be of great value and benefit to TTC, its students, and the NRC."</p> <p>This statement implies that "an environment in which new ideas, fresh perspectives, and recent hands-on experience" doesn't exist currently at TTC, and that it cannot exist without rotational instructor positions. While HR agrees that creating rotational instructor positions is worthy of reconsideration (TTC has considered this in the past and decided against it for a number of reasons) and many instructors do remain at TTC until retirement (largely because they are professional instructors), the almost complete turnover of reactor technology instructors (12 of 17) over the past 5 years, in combination with the continuing training activities discussed above and listed in the attached table, provides</p>		

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	<p>contacted by OIG has a policy of rotating instructors on a five-year cycle.</p>	<p>for an environment in which new ideas, fresh perspectives, and recent hands-on experience have benefitted the training programs. Other practices which facilitate new ideas, fresh perspectives, and recent hands-on experience include participation of subject matter experts from the field as instructors and course material developers for technical training courses, close cooperation among the offices/regions and TTC on training and non-training activities, and the future exchange of HQ and TTC technical instructors in technical training courses. Instructors maintain contact with other training professionals and obtain information on current and emerging training methodologies via the web. TTC managers attend training conferences to keep current on training methodologies.</p>		

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14	<p><u>Rotation of Cognizant Instructor Responsibilities</u></p> <p>Cognizant instructors are responsible for maintaining and updating course curriculum. A TTC instructor assigned as a cognizant instructor for a particular course generally retains the responsibility for that course for a long time. In OIG's opinion, sound business practices call for keeping course materials fresh by obtaining new ideas and new views. Rotation of cognizant instructor responsibilities would accomplish this objective, along with providing them intellectual stimulation and a heightened level of interest and engagement in the courses that they teach. A TTC official stated that rotation of cognizant instructor responsibilities is not a routine practice, but it</p>	<p>The stated objective is "keeping course materials fresh by obtaining new ideas and new views". Since all instructors teach in all courses for which they are qualified, not just those for which they are cognizant instructors, this objective is already addressed. All instructors are expected to provide feedback regarding the courses in which they participate. Rotation of cognizant instructor duties is considered as part of the normal assignment of work.</p>	<p><u>Rotation of Cognizant Instructor Responsibilities</u></p> <p>Cognizant instructors are responsible for maintaining and updating course curricula. A TTC instructor assigned as a cognizant instructor for a particular course generally retains the responsibility for that course for a long time. In OIG's opinion, sound business practices call for keeping course materials fresh by obtaining new ideas and new views. Rotation of cognizant instructor responsibilities would provide an additional way to accomplish this objective, along with providing them intellectual stimulation and a heightened level of interest and engagement in the courses that they teach. A TTC official stated that rotation of cognizant instructor responsibilities is not a routine practice, but it is an idea worth considering.</p>	<p>IG incorporated the suggested report language: "would provide an additional way to accomplish this objective" in the report.</p>

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	is an idea worth considering.			
14	<u>Recommendations</u>  OIG recommends that the Executive Director for Operations:  6. Develop and implement a policy requiring TTC instructors to maintain technical currency.	6. TTC has a policy for continuing training for instructors and in practice, TTC instructors have completed many activities to get current field experience to maintain technical currency.	<u>Recommendations</u>  OIG recommends that the Executive Director for Operations:  5. Revise the policy for continuing training for TTC instructors to add specific detail about the purpose, expectations, and documentation for technical training for instructors.	
14	7. Periodically provide instructional methodology training for all TTC instructors.	The continuing training section in PD 7 could be revised to add more specific detail about the purpose and expectations for technical training for instructors.	6. Revise the policy for continuing training for TTC instructors to add specific detail about the purpose, expectations, and documentation for instructional methodology training for instructors.	
15	8. Develop and implement a pilot program for rotational instructor positions at TTC.  9. Require periodic rotation of cognizant instructor responsibilities.	7. Instructors have been provided instructional methodology training as needed. For example, training in the use of PowerPoint was conducted in October 2006. The continuing	7. Evaluate whether requiring periodic rotation of cognizant instructor responsibilities would assist in keeping course materials fresh by obtaining new ideas and new views.	

Changed wording of OIG recommendation 9 to read: "Periodically rotate cognizant instructor responsibilities." See report, pg. 15.

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		<p>training section in PD 7 could be revised to add more specific detail about the purpose and expectations for instructional methodology training for instructors.</p> <p>8. There are many other ways in place at TTC to bring fresh new ideas, etc. It has been more effective and efficient to send instructors out rather than to bring inspectors in.</p> <p>9. This needs to be considered on a case-by-case basis for each curriculum area. For some areas, there are only two or three instructors qualified in that area, so rotating cognizant instructor assignments among few people who all teach the courses may not be efficient or effective.</p>		

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16	<p><u>F. Course Evaluations</u></p> <p>When used effectively, course evaluations are a valuable tool to assure management that the training program fulfills the needs of students, as well as to identify opportunities for improvement. While TTC instructors obtain immediate feedback from students at the end of each training session, course evaluations are not compiled in an official database. Such action would allow TTC management to analyze results and identify areas needing improvement. Furthermore, the evaluations used to evaluate courses taught by TTC instructors do not include specific questions related to instructor performance. In OIG's opinion, both of these conditions are at variance</p>	<p>There are no examples of negative consequences attributed to the current TTC practices regarding course evaluation. There are other more appropriate and cost-effective ways to accomplish the trending of the data. The projected impacts of not having an official database or questions related to instructor performance are significantly overstated and are refuted by history, the results of the OIG survey, and HR training metrics.</p>	<p><u>F. Course Evaluations</u></p> <p>When used effectively, course evaluations are a valuable tool to assure management that the training program fulfills the needs of students, as well as to identify opportunities for improvement. While TTC obtains immediate feedback from students at the end of each training session and has a process in place to review the evaluations and take actions in response to the feedback, the methods to track and trend evaluation results need improvement. Such action would allow TTC management to consider longer-term trends in student comments. Furthermore, the evaluations used to evaluate courses taught by TTC instructors do not include specific questions related to instructor performance. TTC management relies on infrequent supervisory observation and open-ended questions on the course evaluations to identify instructor performance problems. A more rigorous method for trending course evaluations and obtaining feedback on instructor performance would increase the likelihood that negative trends would be noticed and corrected.</p>	<p>The suggested report language dilutes the substance of the finding. No evidence was presented to show that there are "more appropriate and cost-effective ways to accomplish trending data."</p> <p>No change.</p>

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	with prudent business practices and other relevant criteria. As a result, negative trends could go unnoticed and uncorrected. Uncorrected problems in course content and/or instructor performance could adversely affect the quality of training received.			
16	<p><u>Official Database</u></p> <p>While some managers and instructors at TTC maintain individual databases containing information related to course evaluations, TTC management has not established a central, official database to compile and analyze course evaluation results. The GAO Standards provide that "Internal control should generally be designed to assure that ongoing monitoring occurs in the course of normal</p>	<p>This does not fully and accurately represent the conditions at the TTC. HR calculates and monitors two performance measures related to training effectiveness. These are percentage of students that rate training satisfactory or better, and percentage of students that attain a passing exam score. The manager for each program maintains a spreadsheet of evaluation and exam data to calculate the quarterly training metrics. This methodology facilitates</p>	<p><u>Official Database</u></p> <p>HR calculates and monitors two performance measures related to training effectiveness. These are percentage of students that rate training satisfactory or better, and percentage of students that attain a passing exam score. The manager for each program maintains a spreadsheet of evaluation and exam data to calculate the quarterly training metrics. HR and TTC management feel that this methodology facilitates data analysis and has been effective in monitoring the quality of training. In OIG's opinion, TTC management should implement a methodology, such as a central, official database, to more rigorously track and trend course evaluation data. Such action would provide TTC management and instructors an additional tool to identify and correct problem areas.</p>	<p>The referenced performance measures currently in use set the bar as a minimum level and do not adequately address the audit finding.</p> <p>No change.</p>

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	<p>operations.” Accordingly, in OIG’s opinion, prudent business practice requires that TTC management should compile course evaluation results in an official database. In addition, an appropriate methodology should be established to facilitate data analysis. Such action would provide TTC management and instructors the necessary tool to identify and correct problem areas. In light of the fact that TTC managers do not routinely observe instructors in the classroom, course evaluation analysis is critical to successful operations.</p>	<p>data analysis and has been effective in monitoring the quality of training. Therefore, the cited GAO Standard is met. Course evaluation responsibilities are specified in PD 4. Regarding feedback on course content, material, relevancy, and presentation, ongoing monitoring of TTC course evaluations occurs in the course of normal operations for each course session that is conducted. Comments from students taught by TTC staff are reviewed by the course instructors, cognizant instructor, and the cognizant TTC manager. Likewise, comments for contracted courses are reviewed by the course’s Project Officer and the cognizant TTC manager. Actions are then taken to address issues, as necessary, identified by the students, and to consider longer-term trends in student comments. Instructors and</p>		

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		<p>managers have access to previous course evaluations, allowing them to look for repeat issues. Because of the experience level of TTC staff, management has found that routine observation of instructors in the classroom is not necessary. At least annual observation is performed to support the performance appraisal process.</p> <p>Tools other than databases, could be implemented to accomplish more rigorous trending. Use of a database is not necessary and may not be supportable from a cost-benefit basis.</p>		
16	<u>Instructor Performance</u>  Course evaluations used for contracted courses	With respect to feedback involving instructor performance, two separate cases exist. The fact that	Move to Best Practices section or: Monitoring Instructor Performance  Course evaluations used for contracted courses	Changed title of heading to "Evaluating Instructor Performance."

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16	include questions specifically related to instructor performance; however, evaluations for courses taught by TTC instructors do not. The Performance Elements and Standards for Reactor Technology Training instructors provide that the instructor "Seeks feedback for both course and self-improvement from students, peers, management, and clients and acts on recommendations as appropriate." By not including questions related to instructor performance on all course evaluations, TTC management has not fully implemented the elements and standards referred to above. As previously stated, TTC managers do not routinely observe instructors in the classroom. Therefore, it is important that managers,	TTC staff cannot monitor every contracted course (due to geographical or time constraints) has led to the practice of asking students to provide feedback on contracted course instructors. This has allowed for both feedback to contracted instructors on their individual performance and responsible management of contracted services. In contrast to the case of contracted instructional services, TTC managers have routine access to presentations by TTC instructors. Accordingly, TTC managers evaluate each instructor at least once per year through attendance of selected training sessions; sometimes more often depending on the experience of the instructor. In both cases of assessing instructor performance, TTC management has the additional benefit of course evaluations completed by	include questions specifically related to instructor performance; however, evaluations for courses taught by TTC instructors do not. The Performance Elements and Standards for Reactor Technology Training instructors provide that the instructor "Seeks feedback for both course and self-improvement from students, peers, management, and clients and acts on recommendations as appropriate."  TTC management and instructors have implemented this expectation through review of student comments on instructor performance included in the open-ended questions on the evaluation form, direct feedback from students, managers, and client offices, and the annual performance appraisal process.  As previously stated, TTC managers do not routinely observe instructors in the classroom. More frequent and specific feedback on instructor performance would increase the likelihood that performance problems would be identified and corrected.	"Best Practices" discussions are informational and do not include any recommendations.  Incorporating the suggested report language dilutes the substance of the finding. No change.  Student feedback on instructor performance is useful information which should be routinely obtained, compiled, analyzed, and acted upon as warranted.

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	<p>as well as instructors, obtain feedback from students on TTC instructor performance.</p> <p>Without an official database to compile and analyze course evaluations, negative trends could go unnoticed and uncorrected. Additionally, failure to obtain student feedback on TTC instructor performance could negatively affect training quality.</p>	<p>students to provide both direct (through qualitative comments solicited on feedback forms) and indirect (through overall assessments students make of the courses they attend) feedback on the course and, by extension, instructor effectiveness. From a performance-based perspective, it is reasonable to infer instructor effectiveness from overall course effectiveness. Additionally in the future, RTT first line supervisors will spend 50 percent of their time on instruction activities, significantly increasing the direct observation of instructors in the classroom. Thus, TTC considers its ability to assess NRC instructor performance sufficient to the goal of providing high-quality instruction. The OIG survey results substantiate this.</p> <p>TTC management and</p>		

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		instructors have implemented the stated element and standard. This is accomplished by reviewing student evaluations (students frequently comment on instructor performance and the comments are overwhelmingly complimentary), direct feedback from students, managers, and customers, and the annual performance appraisals. There is no basis or evidence that these practices are ineffective or need improvement. We suggest that the discussion about questions regarding instructor performance be moved to the best practices section or we offer the suggested revisions.		
17	<u>Recommendations</u>  OIG recommends that the Executive Director for Operations:		<u>Recommendations</u>  OIG recommends that the Executive Director for Operations:	

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	<p>10. Establish a single official database to compile all TTC course evaluations and periodically analyze results for appropriate action.</p> <p>11. Include questions specific to instructor performance on all course evaluations.</p>		<p>9. Establish a more formal method to track and trend TTC course evaluations and periodically analyze trends for appropriate action.</p> <p>10. Establish a method to obtain more frequent and specific feedback on TTC instructor performance.</p>	<p>Revised OIG recommendation 10 as suggested. See report, pg. 17.</p> <p>The suggested report language dilutes the substance of the recommendation. No change.</p>
19	<p>V. SURVEY OF FORMER STUDENTS</p> <p>OIG surveyed 183 former TTC students via email, to determine the degree of satisfaction with their learning experience. Sixty-eight former students responded, yielding a 37 percent response rate. The feedback was generally favorable as shown in the table below:</p>	<p>One of the objectives of this audit was to identify opportunities to improve effectiveness of TTC operations; it is important to note the based on OIG's survey information, most of the students found the TTC program to be very favorable (page 25). The favorable results of the OIG survey are discussed after the findings and recommendations. The favorable results of the survey need to be integrated throughout the report and referred to as appropriate. Although one does not</p>		<p>Based on the relatively low response rate to the survey, OIG did not make any projections. The data used in the table and the accompanying graph was for the purpose of illustrating that valuable information can be obtained by analyzing and presenting data from course evaluations.</p> <p>In this audit, OIG did not state or conclude that the TTC program "missed the target." We did point out opportunities for improvement that, in OIG's</p>

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		dispute that we can do better, there is no empirical evidence that we have missed the target.		opinion, would raise TTC operations to a higher level.
20	The purpose of this analysis is to show that valuable information can be learned by analyzing evaluation data. The division between green and yellow at 90 percent and yellow and red at 70 percent is subjective and was chosen here for demonstrative purposes. This graph is not meant as a measure of the effectiveness or quality of survey information provided to OIG. This chart demonstrates the value of this type of graphic for identifying areas for further management review or action. TTC management could readily perform this type of analysis on course evaluation data to identify opportunities for	<p>Compiling data may not be the most cost efficient method for determining improvements needed. Data needs to be tracked and trended by course and by instructor to be meaningful.</p> <p>Recommendation #10 specifies that a single official database to compile all TTC course evaluations be developed. We recommend you refer to Yellow Announcement dated September 7, 2006, for information concerning the agency's policies and procedures for developing internal use software. (OCFO comment)</p>		<p>This section of the report demonstrates that useful analytical tools are available to identify operational areas in need of improvement. OIG used Excel spreadsheet techniques in this analysis.</p> <p>Recommendation 10 was changed per agency comment.</p>
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	improvement.			

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