



U.S. Department of Energy  
Office of Inspector General  
Office of Audits and Inspections

# Audit Report

The Department of Energy's  
Weatherization Assistance Program  
under the American Recovery and  
Reinvestment Act in the State of  
Tennessee



OAS-RA-11-17

September 2011



## Department of Energy

Washington, DC 20585

September 19, 2011

### MEMORANDUM FOR THE ACTING ASSISTANT SECRETARY FOR ENERGY EFFICIENCY AND RENEWABLE ENERGY

A handwritten signature in cursive script, reading "George W. Collard".

FROM: George W. Collard  
Assistant Inspector General  
for Audits  
Office of Inspector General

SUBJECT: INFORMATION: Audit Report on "The Department of Energy's  
Weatherization Assistance Program under the American Recovery and  
Reinvestment Act in the State of Tennessee"

#### BACKGROUND

Under the American Recovery and Reinvestment Act of 2009 (Recovery Act), the Department of Energy's Weatherization Assistance Program (Weatherization Program) received \$5 billion to increase the energy efficiency of dwellings owned or occupied by low-income persons. Subsequently, the Department awarded a 3-year, \$99 million Recovery Act weatherization grant to the State of Tennessee. This grant was more than 10 times the \$8.9 million available to Tennessee for weatherization assistance in Fiscal Year (FY) 2009.

Tennessee's Department of Human Services (Tennessee) administers its Weatherization Program grant through 18 local agencies. Local agencies are responsible for determining applicant eligibility; performing initial home assessments to determine appropriate weatherization measures needed; awarding contracts to weatherize homes; and, conducting final inspections of completed homes. State officials reported that Tennessee had, by September 2010, achieved its Recovery Act goal of weatherizing more than 10,500 homes.

Given the significant increase in funding and the demands associated with weatherizing thousands of homes, we initiated this audit to determine if Tennessee had adequate safeguards in place to ensure the Weatherization Program was managed efficiently and effectively. To perform our audit, we analyzed Tennessee's management of the Weatherization Program and reviewed the weatherization activities of three local agencies: East Tennessee Human Resource Agency, Inc. (ETHRA); Upper East Tennessee Human Development Agency, Inc. (Upper East); and, Shelby County Community Services Agency (Shelby County).

#### RESULTS OF AUDIT

Tennessee, while achieving its production goals, had not always ensured the Weatherization Program was managed efficiently and effectively. Specifically:

- Although prohibited by State and Federal directives, we found that local agency contractors installed weatherization measures that may not have been cost-effective. Our analysis of 246 energy measures installed in 41 homes revealed only a third were shown

to meet Department-directed minimum energy savings-to-investment ratios. Consequently, we questioned about \$100,000 claimed for those measures that were not cost-effective;

- Change orders to competitively awarded weatherization work contracts had not been approved, as required, prior to completion of the work, and local agencies had not ensured that the changes were cost-effective. In our review of documentation supporting the weatherization of 68 homes at ETHRA, Upper East and Shelby County, we found on at least 40 occasions, energy measures had either been added to or deleted from the original planned work. Work order changes were often not approved until the work was invoiced and were made without the benefit of competition or a cost-benefit analysis. As a result of our test work, we questioned costs associated with the change orders and the State subsequently disallowed \$15,500; and,
- Several homes at one agency had previously received weatherization services making these homes ineligible for additional services. Specifically, we noted that three homes had received Federally funded weatherization services after September 30, 1994, a fact that made them ineligible for new Recovery Act funded weatherization assistance. Since these homes were ineligible for further services, we questioned about \$12,000 spent to weatherize them.

In addition to our work at the three local agencies, we also observed recurring problems with the quality of weatherization work across the entire State. During the period from July 2009 to January 2011, State monitors found 317 of the 879 homes they re-inspected at the local agencies across the State (about 36 percent) required additional work. In these situations, local agency inspectors failed to identify problems that were later discovered during State reviews. While State officials took action to ensure the issues leading to inspection failures were addressed on an individual home basis, at the time we began our review, they had not initiated action to address what appeared to be systemic problems related to poor quality work and final agency-level inspection processes. However, State officials told us they began performing trend analyses during 2010, and through these actions had identified poor performing contractors and agency inspectors. The State reports that it is now focusing its re-inspection efforts on those poor performers.

These problems occurred due to a combination of Program weaknesses, including personnel who were unfamiliar with the analytical tools used to demonstrate cost-effectiveness of weatherization measures, inadequate local agency final inspections, and the lack of adequate controls over work change orders in the State. The observed weaknesses in Tennessee's Weatherization Program could have posed health and safety risks to residents and likely increased Program costs. To help avoid similar problems in the future and as the Program completes its Recovery Act related work, we made a number of recommendations designed to improve the effectiveness of the Program and decrease the risk of waste, fraud and abuse in Tennessee's Weatherization Program.

## MANAGEMENT REACTION

The Department, Tennessee, and the three local agencies reviewed provided responses to our draft audit report. The Department stated it would continue to assess the State's progress toward implementing Program improvements. Tennessee noted it would ensure sub-recipients install only those measures that are allowable and meet or exceed savings-to-investment ratio standards. The State reported it would continue to conduct final inspections on more than the required five percent of homes and would ensure that sub-recipients follow the proper change order procedures. Further, the State will continue to strengthen the Program through ongoing training sessions with auditors, contractors and agency staff; the development of technical experts; weekly conference calls; and direct technical support.

The local agencies generally concurred with our findings. One agency stated that the rapid expenditures of Recovery Act funds prevented the normal learning curve for new auditors and contractors. However, over time, it had eliminated unsuitable contractors and energy auditors, and had provided additional training to ensure the quality of weatherization work.

Managements' comments are discussed in more detail in the body of the report and are included in Appendix 3 in their entirety.

### Attachment

cc: Deputy Secretary  
Associate Deputy Secretary  
Acting Under Secretary of Energy  
Chief of Staff

**REPORT ON THE DEPARTMENT OF ENERGY'S WEATHERIZATION ASSISTANCE PROGRAM UNDER THE AMERICAN RECOVERY AND REINVESTMENT ACT IN THE STATE OF TENNESSEE**

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# **THE DEPARTMENT OF ENERGY'S WEATHERIZATION ASSISTANCE PROGRAM UNDER THE AMERICAN RECOVERY AND REINVESTMENT ACT IN THE STATE OF TENNESSEE**

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## Weatherization Efforts

We identified weaknesses in Tennessee's Department of Human Services' (Tennessee) Weatherization Assistance Program (Weatherization Program) that the State should consider as it moves forward. Specifically, we found energy efficiency measures that did not meet standards for cost-effectiveness, homes that had not been properly weatherized, work change orders that had not been properly approved in advance or shown to be cost-effective, and weatherization of ineligible homes.

## Cost-Effectiveness of Weatherization Work

The East Tennessee Human Resource Agency, Inc. (ETHRA) and the Upper East Tennessee Human Development Agency, Inc. (Upper East) authorized and reimbursed contractors for the installation of energy measures that may not have been cost-effective. According to Federal and State directives, only energy measures that are cost-effective should be installed, as demonstrated by a positive savings-to-investment ratio (SIR). Tennessee required its agencies to determine cost-effectiveness, or SIR, using the National Energy Audit Tool (NEAT) and Manufactured Homes Energy Audit Tool (MHEA). These tools, developed by the Oak Ridge National Laboratory and the National Renewable Energy Laboratory, calculate the SIR by analyzing the cost and potential savings of proposed energy measures.

We reviewed the NEAT/MHEA analysis supporting the weatherization of 46 homes at 3 local agencies, and found that 2 agencies had installed energy measures in 36 homes that were not shown to be cost-effective. One agency, Shelby County Community Services Agency (Shelby County), demonstrated that its installed energy measures were cost-effective in the five homes we reviewed. However, we noted that of the \$170,000 spent by ETHRA and Upper East for measures at the homes we reviewed, about \$100,000 was expended for energy measures even though the agencies had not ensured that the potential savings for these measures exceeded the cost of installation. For example, the agencies spent approximately \$40,000 on windows for the homes we reviewed despite the fact that the State's Weatherization Plan cautioned that replacing windows and doors, even when they were in a dilapidated condition, was generally not cost-effective in reducing energy consumption. The State Plan reminded local agencies that the Weatherization Program is an energy

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conservation program, not a housing rehabilitation program. Nonetheless, agencies installed windows, even after SIRs calculated by the NEAT and MHEA tools demonstrated that the installation did not meet cost-effectiveness minimums. We also found that the agencies installed other energy measures, such as smart thermostats and floor insulation, without adequate justification. Specifically:

- At the 31 homes we reviewed that were served by ETHRA, we found 116 of 173 (nearly 70 percent) installed measures were not shown to have met minimum standards for cost-effectiveness; and,
- For 10 homes we evaluated that had been completed by Upper East, we identified 48 of 73 (about 65 percent) energy savings measures that did not appear to be justified based on Tennessee specified minimums for cost-effectiveness.

State officials found similar concerns during desk reviews they conducted at 14 of the 18 local agencies. During April and May 2010 desk reviews, the State evaluated 17 weatherization bid solicitations posted by the 3 agencies we reviewed and found 14 of those solicitations failed to appropriately identify the cost-effectiveness of planned weatherization measures. As a result, the State required the agencies re-evaluate the solicitations and ensure compliance with policies prior to re-posting the jobs.

Consistent with our findings in this area, the State's Comptroller of the Treasury, Division of State Audit (State Auditor) also reported issues concerning the cost-effectiveness of weatherization measures in its Fiscal Year (FY) 2010 Single Audit Report (Single Audit) issued in March 2011. In particular, the State Auditor detailed instances of contractors installing non-weatherization measures such as stairs, steps, ramps, and shower surrounds, or other items, which did not increase the energy efficiency of the home. The State Auditor reported Federal questioned costs of about \$14,000 associated with these measures. In response to the Single Audit, Tennessee officials agreed that sub-recipients had inappropriately recommended non-weatherization measures, and added that they had already taken steps to recoup the funds.

#### Quality of Weatherization Work

Our audit also identified recurring problems with the quality of weatherization work within the State. Specifically, Tennessee's

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Weatherization Program experienced a significant percentage of homes that required further work, sometimes due to poor contractor performance, after work was certified as complete. Department of Energy (Department) regulations require local agencies to conduct a final inspection before the work on a home is accepted as complete and require the State to re-inspect at least five percent of the homes weatherized and inspected by each local agency.

For the period July 2009 to January 2011, State monitors failed 317 of 879 homes (or 36 percent) they re-inspected across the State, including 42 percent of the 236 homes they re-inspected at the 3 agencies we reviewed. State officials found that contractors had improperly installed: air infiltration reduction measures; water heater insulation; dryer, kitchen and bathroom vents; and, doors. As noted earlier, the State is required to re-inspect only five percent of the homes weatherized by each of its local agencies. Consequently, substandard weatherization work on other homes in the State may have occurred without being identified and corrected.

During our observation of inspections of 30 homes conducted by ETHRA, Upper East and Shelby County, we noted that 10 of the homes (or 33 percent) failed local agency inspections because of poor contractor workmanship. Specifically:

- At ETHRA, 4 of 10 homes we observed failed the agency's final inspection. The agency failed one home because the contractor had not completed all air infiltration reduction measures. Another home failed because a window had not been properly installed, and the cleaning and repairing of the ductwork had not been completed. At the third home, the contractor failed to properly install the hot water heater discharge pipe. At the fourth home, the contractor had not completed air infiltration reduction measures or properly insulated a water tank;
- At Upper East, 4 of 10 homes failed the agency's re-inspections when these homes were re-inspected at our request. Three homes failed because windows and ground cover used to prevent seepage and mold had either not been properly installed or repaired. The fourth home failed because the contractor failed to air seal a cabinet. These homes had previously passed the agency's inspections, but

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when re-inspected at our request and in our presence, the agency's inspectors noted the problems and failed the re-inspection; and,

- At Shelby County, 2 of 10 homes failed the agency's re-inspections because the contractors had not properly installed windows and doors. Both of the homes had passed the agency's inspection, but when re-inspected at our request, the agency's inspectors identified problems.

The local agencies required contractors to correct the deficiencies identified by final inspections and re-inspections of specific homes. However, unless the underlying causes for problems in the quality of weatherization work are corrected on a systemic basis, the recipients of weatherization assistance in the State will not fully benefit from the expenditure of significant American Recovery and Reinvestment Act of 2009 (Recovery Act) funds.

The State Auditor identified similar quality-of-work issues in its Single Audit, identifying weatherization measures that were not properly completed by contractors and not properly verified or inspected by local agencies. In particular, the State Auditor reported that contractors had not completed weatherization measures at 24 of the 84 homes visited and had improperly completed work at 14 of the homes. The State Auditor concluded that local agency energy auditors conducting inspections "failed to adequately perform their jobs," passing 28 homes that should have failed. The State Auditor reported Federal questioned costs of about \$23,000 related to these issues. Tennessee officials agreed that sub-recipients had not properly completed and verified recommended measures, and noted they would ensure resolution of issues and recovery of costs incurred.

#### Changes in Planned Weatherization Work

We also found that the agencies had not ensured work order changes were approved prior to completion of the work and that the changes were cost-effective. In our review of documentation supporting the weatherization of 68 homes at ETHRA, Upper East and Shelby County, we found on at least 40 occasions, energy measures had either been added to or deleted from the original planned work. Work order changes were often not approved until the work was invoiced and were made without the benefit of competition and in the absence of any cost-benefit analysis. In particular:

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- Despite policies requiring prior approval, local agencies had not documented their approval of work scope changes in 18 of the 43 cases we reviewed until after the work had been completed. In eight of those cases, local agencies approved the change orders at the time the contractors' invoices were paid. The agencies told us that contractors had been given verbal approval. However, there was no documentation of this approval; and,
  - The local agencies had not performed savings-to-investment analyses when work was added to a contract, so the required cost-effectiveness could not be established.

For example, we noted an ETHRA change order that added three energy measures totaling \$940. However, ETHRA did not perform either a required site visit to authorize the additional measures, or a savings-to-investment analysis to determine if the change was cost-effective. At our request, the State reviewed the change order and found that the agency had approved the change order several days after the work was completed. The State determined that the change order was not appropriate and disallowed the cost of the additional work.

In another example, ETHRA initiated a change order to install a heat pump without performing a NEAT analysis. The contractor billed the agency about \$5,700 for the heat pump, a cost more than double the NEAT library cost and significantly exceeding the amount the agency paid for other, comparable heat pumps. When we brought this to the State's attention, officials reviewed the change order and disallowed the entire cost of the heat pump because ETHRA had not performed a required site review to authorize the additional expense and had not adequately justified the change. We understand that weatherization measures needed for a home cannot always be identified in an initial assessment and that some changes are reasonable and necessary. However, the nature and extent of the change orders we reviewed indicated initial assessments may have been insufficient and there was an increased risk that contractors could circumvent the cost controls inherent in the competitive bidding process. In response to the significant number of contract change orders found during our audit, the State disallowed about \$15,500 in costs incurred by the agencies for inappropriate change orders.

The State Auditor also found payments for change orders had not been properly approved, noting that 13 percent of change orders reviewed during the Single Audit did not follow the proper

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procedures. For example, files did not include documentation that an agency representative conducted the required site visit prior to approval of the change order, despite requirements to do so. The State Auditor reported Federal questioned costs of about \$7,000 related to improperly executed change orders. Tennessee officials agreed that the local agencies had not followed proper procedures for the jobs in question. The State added that it had corrected this issue and taken steps to recover the costs.

#### Eligibility of Homes Weatherized

One agency we reviewed had not ensured homes it weatherized were eligible for those services. Specifically, we identified three homes weatherized by ETHRA that had previously been weatherized, making them ineligible for weatherization assistance. Under the Recovery Act and Departmental requirements, agencies are required to ensure homes weatherized after September 30, 1994, do not receive additional weatherization assistance, unless they had been damaged by fire, flood or act of God and repair or damage to weatherization materials had not been paid for by insurance. ETHRA did not have sufficient procedures in place to determine if the homes had received previous weatherization assistance, and had no evidence that the homes fell into the exception categories that would have allowed for additional weatherization services. Consequently, we questioned about \$12,000 spent to weatherize the three homes previously weatherized.

The State Auditor, in its Single Audit, also noted that 10 local agencies, including ETHRA and Shelby County, did not have adequate procedures in place to determine whether a dwelling had been weatherized since September 30, 1994. Tennessee officials agreed that the sub-recipients could not always determine when homes had last been weatherized. The State also responded that it is developing a Statewide weatherization system to ensure homes previously weatherized are not incorrectly re-weatherized.

#### **Program Weaknesses**

These problems occurred due to a combination of Weatherization Program weaknesses. In particular, we found local agency personnel were unfamiliar with the analytical tools used to demonstrate cost-effectiveness of weatherization measures, local agencies had not always performed adequate final inspections, and the State and its local agencies had not established sufficient controls over work change orders.

#### Analytical Tools

Tennessee required its agencies to use the NEAT/MHEA analytical tools, but did not ensure that the agencies were proficient in the

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application of the tools. ETHRA officials reported to us that they were not adequately trained in the use of the cost-benefit analysis tools prescribed by the State and further reported they were unaware for a year after using the tools that a specific SIR standard had to be met. Prior to the Recovery Act, the State allowed the agencies to use a checklist to determine which weatherization priority measures to install. Subsequent to the Recovery Act and in the interest of ensuring a more objective analysis of the cost-benefit of energy measures, the State required agencies to use the automated NEAT/MHEA systems.

For the NEAT/MHEA systems to be effective, agencies are required to update cost libraries to reflect the price of materials in their areas. We found, however, that ETHRA had not maintained and periodically updated local cost information, rendering its systems' output unreliable. For example, we found the cost of procuring and installing a refrigerator was listed as a meaningless \$1. An ETHRA official acknowledged the agency's cost library had not been updated even though the library was a primary tool in the NEAT/MHEA analyses. The official stated that the analytical tools were difficult to use. An Upper East official also reported some NEAT/MHEA data for the agency had been entered incorrectly and there was no consistency in its cost library.

The State recognized deficiencies in the use and application of the NEAT/MHEA tools and initiated action to correct the problems we identified. Based on the results of its April and May 2010 review, Tennessee subsequently provided additional training on energy assessments and the use of these tools and mandated that agencies use the State library for cost consistency.

#### Local Agency Final Inspections

Inadequate local agency inspections resulted in issues with the quality of workmanship and diminished the ability of officials at all levels to identify systemic workmanship and/or pervasive management issues. During their re-inspection of homes weatherized by local agencies, State monitors found that in approximately one of three cases, local agency final inspectors passed homes that actually required further action. In other words, homes deemed to be completed by local agency officials often had significant problems that had not been resolved. At the three agencies included in our audit, the inspections we observed were thorough. In fact, local agency inspectors we accompanied identified significant issues and failed 10 of the 30 homes inspected. The State, however, found local agencies often passed

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homes that required further action. Specifically, from July 2009 to January 2011, 42 percent of the 236 homes the State re-inspected for these three agencies failed re-inspection.

Additionally, inspections were not consistently performed and contractors were not consistently assessed. For example, Upper East reported the State's guidance gave direction and recommendations on how a measure should be installed or repaired; however, in many instances, the guidance left it up to the inspectors' interpretations. Upper East stated inspectors' interpretations could vary from one inspector to the next. Thus, when the inspectors were assessing whether the contractors' work was appropriate, different inspectors had varying responses. To improve consistency, the State provided additional training to the agencies and their inspectors.

To its credit, during 2010, the State performed trend analyses and identified poor performing contractors and agency inspectors. The State then focused its re-inspection efforts on those poor performers in an effort to identify and correct systemic problems. In our review of the State's re-inspection data, we noted that the State's efforts had begun to have a positive effect. In particular, we noted that in the more recent analysis, the agencies' inspections had improved as compared to previous periods. Specifically, the State-wide cumulative failure rate decreased from 43 percent in August 2010 to 36 percent in January 2011.

#### Change Order Controls

We noted that the State had not effectively limited the agencies' change order control authority. In response to the issues we raised in the audit, the State stipulated that as of January 2011, work added by change orders must be supported by NEAT/MHEA analysis and found to be cost-effective, and prior approval must be obtained before the contractor performs the work. In addition, the State's approval is now required for change orders that increase the total cost of the job by 25 percent or more.

#### State Auditor Weatherization Findings

In addition to the findings discussed above, the State Auditor's Single Audit detailed Weatherization Program issues identified at local agencies that we did not visit as part of our audit. These included inaccurate and unsupported determination of applicant eligibility; payments to contractors that differed from original bids or invoices; and, energy auditors who lacked required certifications. The State Auditor made recommendations to correct

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identified findings. Tennessee disagreed that it failed to ensure that key controls were in place, but agreed that the sub-recipients responsible for the direct administration of the Program had sometimes lacked proper controls over the Program. Overall, the State Auditor reported \$371,770 in total questioned costs for the Tennessee Weatherization Program, of which \$186,361 were Federal questioned costs. The State, in its response, disagreed with the amount of Federal questioned costs, stating only \$68,017 had yet to be questioned, or disallowed, to sub-recipients.

**Impact of  
Weatherization  
Problems**

Weaknesses in Tennessee's Weatherization Program can pose health and safety risks to residents and increase Program costs. In the absence of improvement in the management of its Weatherization Program, the State also faces an increased risk of waste, fraud and abuse.

**RECOMMENDATIONS**

To address the deficiencies we identified during our audit, we recommend the Acting Assistant Secretary for Energy Efficiency and Renewable Energy ensure:

1. Tennessee takes immediate action to:
  - a. Ensure local agencies install only those weatherization measures that are allowable and meet or exceed the savings-to-investment ratio standards;
  - b. Expand local agency initial assessment and final inspection processes to ensure poorly performing contractors and agency inspectors are identified and corrective action taken; and,
  - c. Ensure compliance with new State requirements mandating change orders be supported by NEAT/MHEA analysis; approved by local agencies before contractors begin work; and, approved by the State if the total job cost increases by 25 percent or more.
2. The questioned costs identified in this report (about \$100,000 for energy measures that were not cost-effective, \$15,500 for change orders that were not properly approved, and \$12,000 for the homes that were re-weatherized) are resolved.

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**MANAGEMENT AND  
AUDITOR COMMENTS**

The Department, Tennessee, ETHRA, Shelby County and Upper East provided responses to our draft audit report which are included in their entirety in Appendix 3. Below is a summary of their key comments and our response.

Management Comments (Department)

Department officials concurred with our recommendations and provided an action plan for implementing them. Officials stated that, in response to their concerns and corrective actions, Tennessee had made a number of improvements in implementation of its Weatherization Program. Department officials stated they would continue to assess the State's progress toward implementing these and other Program improvements. Additionally, the Department will: (1) recommend development of more concise implementation guidance; (2) review monitoring plans to ensure they adequately describe the final inspection process; and, (3) review the change order process during monitoring visits and request trend analyses of the incidences of change orders. Further, the Department has already begun its review and resolution of questioned costs.

Auditor Response to Department Comments

The Department's comments are responsive to our recommendations.

Management Comments (State)

Tennessee officials generally concurred with our findings and recommendations, stating they had already taken action to address the issues we identified. For example, the State had developed a more restrictive change order policy that includes a review of change orders during monitoring visits. Further, the State had implemented a plan to audit poor performers at a higher rate; to inspect a higher percentage of jobs for post inspection; and, to delist poor performers. In particular, the State plans to exceed the required minimum 5 percent re-inspection rate and will continue to strengthen the Program through ongoing training with auditors, contractors and agency staff; development of technical experts; weekly conference calls; and, direct technical support. Officials will ensure sub-recipients install only allowable measures that meet or exceed SIR standards and follow proper change order procedures.

While State officials agreed that energy measures were not always entered into the NEAT/MHEA correctly, they disagreed with the

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number of measures we questioned as not being cost-effective. Officials stated that after they re-examined the measures, they determined that all but six of the measures questioned would have been justified. Further, officials disagreed that the State had not provided sufficient training in the use of the weatherization tools, stating that it had provided a series of training sessions all agencies and energy auditors were required to attend.

#### Auditor Response to State Comments

The State's comments were, in general, responsive to our recommendations. We disagree with Tennessee's conclusion that all but six of the questioned energy measures were justified. In its re-examination, we noted Tennessee officials had re-classified nearly half of the questioned energy measures as either health and safety measures or as incidental repairs; measures which do not require a SIR of one or greater. Tennessee's re-classification of energy measures meant that low-scoring measures, even though not cost-effective, could still be installed. We performed our analysis using the State Plan, which describes those measures considered energy measures, and those characterized as health and safety or incidental repair. While we acknowledge that, in some cases, a measure may fall into either category, for the most part, the State Plan is relatively clear. Further, regardless of whether they characterized measures correctly or not, the agencies disregarded the NEAT/MHEA results, and installed measures despite the results. Finally, as previously stated, Department officials have begun to review the costs we questioned.

In regard to the sufficiency of the State's training in the NEAT/MHEA audit tools, our report appropriately reflected one agency's statements to us that it had not been adequately trained in the analytical tools. Our report acknowledges that the State recognized deficiencies in the use and application of the tools and subsequently provided additional training. However, despite that training, we continue to conclude that local agencies were not proficient in the use of the tools. This lack of proficiency led to the numerous errors that we identified.

#### Management Comments (Local Agencies)

ETHRA generally concurred with our findings, commenting it had used State-provided programs for training and compliance directives. The agency detailed that the rapid expenditures of Recovery Act funds prevented the normal learning curve for new auditors and contractors, and that over time, the agency eliminated unsuitable auditors and contractors, thus allowing ETHRA to ensure

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quality of work provided to the clients. Agency officials further stated they had recalculated the SIR on a large number of completed projects, and had determined the SIR met State guidelines. With respect to the measures specifically questioned in our report, ETHRA responded that it could not comment on the accuracy of those questioned measures, but stated that it disagreed with two projects we questioned as not being cost-effective, and with the library cost of \$1 cited in our report. ETHRA also indicated improvements in the implementation and use of the State's weatherization database should help address improper re-weatherizations. Shelby County generally concurred with our findings. Concerning the quality of final inspections, Shelby County stated that inspectors were not direct employees of Shelby County, but were contract employees trained by the State. As such, the agency was unaware of the inspectors' training and abilities, and did not have enough staff to adequately inspect and supervise contractors' work. Since the audit, agency officials reported they had increased the number of auditors and required staff to attend additional training. Upper East concurred with our findings as they pertained to its operations.

#### Auditor Response to Local Agencies' Comments

Local agency comments generally affirm our findings and are responsive to our recommendations. One agency, ETHRA, expressed concern about two projects and the data in the cost library. One of the projects was not specifically cited in our report, nor was its costs questioned. The other project, a door replacement, was characterized by ETHRA as an allowable health and safety measure, even though the client file did not indicate such a concern. The \$1 library cost example cited in our report was for a refrigerator, not roof coating as ETHRA stated in its response.

## Appendix 1

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### OBJECTIVE

The objective of the audit was to determine if the State of Tennessee had adequate safeguards in place to ensure that the Weatherization Assistance Program (Weatherization Program) was managed efficiently and effectively.

### SCOPE

The audit was performed between April 2010 and August 2011, at the Tennessee Department of Human Services (Tennessee) in Nashville, Tennessee and at three local agencies: East Tennessee Human Resource Agency, Inc. in Knoxville, Tennessee; Upper East Tennessee Human Development Agency, Inc. in Kingsport, Tennessee; and, the Shelby County Community Services Agency in Memphis, Tennessee. The three local agencies reviewed were awarded, in total, \$29.8 million to weatherize 3,858 homes, and represented approximately 30 percent of Tennessee's funding and 40 percent of the homes to be weatherized.

### METHODOLOGY

To accomplish the audit objective, we:

- Reviewed applicable laws, regulations, and guidance pertaining to the Weatherization Program under the American Recovery and Reinvestment Act of 2009 (Recovery Act); as well as laws, regulations and guidance applicable to Tennessee's Weatherization Program;
- Interviewed Tennessee officials to discuss current and ongoing efforts to implement the requirements of the Weatherization Program;
- Reviewed prior Office of Inspector General, Government Accountability Office, State of Tennessee Division of State Audit, and other related reports on the Weatherization Program;
- Accompanied final inspectors on final and completed inspections and re-inspections, and reviewed past State monitoring reports which evaluated the performance of final inspections; and,
- Assessed internal controls over the Weatherization Program, including the cost-effectiveness for determining the recommended weatherization measures.

We conducted this performance audit in accordance with generally accepted Government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and

conclusions based on our audit objective. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective. The audit included tests of controls and compliance with laws and regulations necessary to satisfy the audit objective. Because our review was limited, it would not necessarily have disclosed all internal control deficiencies that may have existed at the time of our audit. We considered the establishment of Recovery Act performance measures that included certain aspects of compliance with the Government Performance and Results Act of 1993, as necessary to accomplish the objective. We conducted a limited reliability assessment of computer-processed data and we deemed the data sufficiently reliable to achieve our audit objective.

Department of Energy management officials waived an exit conference. We held an exit conference with State of Tennessee officials on September 14, 2011.

### RELATED AUDIT REPORTS

Under the American Recovery and Reinvestment Act of 2009, the Office of Inspector General has initiated a series of audits designed to evaluate the Department of Energy's Weatherization Assistance Program's internal control structures at the Federal, state, and local levels. During our audits, we have noted similar findings such as deficiencies in agencies' initial assessments and final inspection processes and poor quality in contractors' work. However, it must be noted that these issues do not exist in all the states we have audited. Our series of audit reports include the following:

- Audit Report [\*The Department of Energy's Weatherization Assistance Program Funded under the American Recovery and Reinvestment Act for the Commonwealth of Virginia\*](#) (OAS-RA-11-14, August 2011)
- Audit Report [\*The Department of Energy's Weatherization Assistance Program Funded under the American Recovery and Reinvestment Act in the State of Indiana\*](#) (OAS-RA-11-13, August 2011)
- Audit Report [\*The Department of Energy's Weatherization Assistance Program under the American Recovery and Reinvestment Act in the State of Missouri\*](#) (OAS-RA-11-12, August 2011)
- Audit Report [\*The Department of Energy's Weatherization Assistance Program under the American Recovery and Reinvestment Act in the State of West Virginia\*](#) (OAS-RA-11-09, June 2011)
- Audit Report [\*The Department of Energy's Weatherization Assistance Program Funded under the American Recovery and Reinvestment Act for the State of Wisconsin\*](#) (OAS-RA-11-07, May 2011)
- Audit Report [\*The Department of Energy's Weatherization Assistance Program under the American Recovery and Reinvestment Act for the Capital Area Community Action Agency – Agreed-Upon Procedures\*](#) (OAS-RA-11-04, February 2011)
- Audit Report [\*The Department of Energy's Weatherization Assistance Program under the American Recovery and Reinvestment Act for the City of Phoenix- Agreed-Upon Procedures\*](#) (OAS-RA-11-03, November 2010)
- Audit Report [\*Selected Aspects of the Commonwealth of Pennsylvania's Efforts to Implement the American Recovery and Reinvestment Act Weatherization Assistance Program\*](#) (OAS-RA-11-02, November 2010)
- Audit Report [\*The State of Illinois Weatherization Assistance Program\*](#) (OAS-RA-11-01, October 2010)

## Appendix 2 (continued)

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- Audit Report [\*The Department of Energy's Use of the Weatherization Assistance Program Formula for Allocating Funds Under the American Recovery and Reinvestment Act\*](#) (OAS-RA-10-13, June 2010)
- Preliminary Audit Report [\*Management Controls over the Commonwealth of Virginia's Efforts to Implement the American Recovery and Reinvestment Act Weatherization Assistance Program\*](#) (OAS-RA-10-11, May 2010)
- Special Report [\*Progress in Implementing the Department of Energy's Weatherization Assistance Program Under the American Recovery and Reinvestment Act\*](#) (OAS-RA-10-04, February 2010)
- Audit Report [\*Management Alert on the Department's Monitoring of the Weatherization Assistance Program in the State of Illinois\*](#) (OAS-RA-10-02, December 2009)



**Department of Energy**  
Washington, DC 20585

August 12, 2011

MEMORANDUM FOR: GEORGE W. COLLARD  
ASSISTANT INSPECTOR GENERAL FOR AUDITS  
OFFICE OF INSPECTOR GENERAL

FROM: KATHLEEN B. HOGAN *Kathleen B. Hogan, for*  
DEPUTY ASSISTANT SECRETARY  
FOR ENERGY EFFICIENCY  
ENERGY EFFICIENCY AND RENEWABLE ENERGY

SUBJECT: Management response to the Office of Inspector General's Audit Report entitled "The Department of Energy's Weatherization Assistance Program in the State of Tennessee under the American Recovery and Reinvestment Act"

The Office of Energy Efficiency and Renewable Energy (EERE) appreciates the opportunity to review the Office of Inspector General's Draft Audit Report "The Department of Energy's Weatherization Assistance Program in the State of Tennessee under the American Recovery and Reinvestment Act" and concurs with the report's recommendations.

The Department of Energy is strongly committed to ensuring that each of the grantees under the Weatherization Program performs high quality work that meets the goals of the Recovery Act. In response to DOE concerns and corrective actions, the State of Tennessee has made a number of improvements, such as establishing a requirement that an Energy Auditor from each Subgrantee pass a test on the use of the audit tool and submit completed energy audits to verify their proficient use of the audit tool. This change in the program administration process will improve the ability to only those measures that are cost justified, or that accurately meet the definition of Health and Safety or Incidental Repair.

Additionally, during on-site monitoring visits, the DOE Project Officer will continue to assess the State's progress towards implementing these and other program improvements. ARRA monitoring visits will continue through March 2012, and annual grant monitoring will continue as specified by the terms and conditions of those grants.

Additional responses are included below that address the specific recommendations in the draft report.



1  
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Response to Inspector General Audit Report:  
“The Department of Energy’s Weatherization Assistance Program in the State of Tennessee  
under the American Recovery and Reinvestment Act”

To address the deficiencies identified in our audit and to help ensure the success of the Tennessee Weatherization Assistance Program, we recommend that the Acting Secretary for Energy Efficiency and Renewable Energy ensure that Tennessee takes immediate action to:

**1. Ensure that local agencies install only those weatherization measures that are allowable and meet or exceed the savings-to-investment ratio standards.**

DOE contracts directly with the Tennessee Department of Human Services (TDHS), who in turn contracts with the local agencies (Subgrantees). DOE has recommended that TDHS (Subgrantees) and contactors receive additional training in the following areas:

- a. How to identify pressure and thermal boundaries.
- b. The correct use of the National Energy Audit Tool (NEAT).
- c. How to conduct air-sealing.

In response to DOE monitoring recommendations, TDHS initiated action to monitor and improve the ability of their Subgrantee agencies to install measures that are allowable and meet or exceed the Savings-to-Investment ratio standards. The action taken by the Grantee was as follows:

- a. Reviews pre-weatherization energy audits prior to contractor bidding.
- b. Provides additional training to Energy Auditors and Contractors.
- c. Reviews the Incidental Repair and Health and Safety work to ensure that they are either appropriately cost justified and/or meets the definition of health and safety.
- d. The Grantee has hired a technical assistance staff person to assist the Program Manager and State Inspectors (Monitors), review and assess technical and programmatic work concerns, and assist the review of contractor quality assurance matters.

Additionally, DOE monitoring has determined that the Grantee has:

- a. Established and plans to maintain a statewide NEAT/MHEA setup-library to ensure that accurate and reliable costs data are used to determine the cost-effectiveness of measures.
- b. Disallowed costs for the installations of items that are not cost justified.
- c. Compares the Energy Audit to the Work Orders during the State Monitoring process.

To ensure that TDHS Subgrantees install only those weatherization measures that are allowable and meet or exceed the savings-to-investment ratio standards, DOE will recommend the development of a Policy and Procedures Manual that will provide one concise document that provides guidance to Subgrantees on how-to implement the program.

**2. Expand local agency initial assessment and final inspection processes to ensure that poorly performing contractors and agency inspectors are identified and corrective action is taken.**

DOE will review the monitoring plan for future funding applications. This review has begun with the PY2011 annual plan application and is currently underway. The review will be completed by August 31, 2011. This review will ensure that the plan adequately describes the final inspection process at the Grantee and the Subgrantee monitoring level.

**3. Ensure that local agencies comply with new State requirements that change orders be supported by NEAT/MHEA analysis, approved by local agencies before contractors begin work, and approved by the State if increase the total cost by 25 percent or more; and,**

The Grantee has issued written guidance (first on December 29, 2010 and again on February 2, 2011) to their Subgrantees regarding the procedures and process to follow when completing a change order. This process includes an updated audit to cost-justify any additional, non-health and safety related work. DOE will review the implementation of the change order process during DOE monitoring visits, and will request a trend analysis review of the incidences of changes orders at each Subgrantee agency during the implementation of future annual grants.

**4. The questioned costs identified in this report (about \$101,000 for energy measures that were not cost-effective, \$15,500 for change orders that were not properly approved, and \$12,000 for the homes that were re-weatherized) must still be resolved.**

The DOE Project Officer will review the energy audits associated with the questioned costs to verify if the costs were justified or accurately identified as Health and Safety or Incidental Repair. A timetable for completion of the review and resolution will be established by August 31, 2011.



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COMMISSIONER

August 3, 2011

George W. Collard  
U.S. Department of Energy  
Assistant Inspector General for Audits  
IG-30, Room 5A-193  
1000 Independence Avenue SW  
Washington, DC 20585

Dear Mr. Collard:

Enclosed is our response to the draft report on "The Department of Energy's Weatherization Assistance Program under the American Recovery and Reinvestment Act in the State of Tennessee" Thank you for the opportunity to respond to the review.

If you have any questions regarding our responses please contact Alan Hall, Inspector General, at (615) 313-4715.

Sincerely,

A handwritten signature in black ink, appearing to read "Raquel Hatter".

Raquel Hatter, MSW, Ed.D.  
Commissioner

RH:sb

Enclosure

cc: Shalonda Cawthorn, Deputy Commissioner  
Robert Matthews, Assistant Commissioner, Adult and Family Services  
Lisa Elam, Director, Adult and Family Services Contracts  
Alan Hall, Inspector General  
Sean Baker, Director, Internal Audit  
Rick Brown, Director, Fiscal Services

### MANAGEMENT REACTION

With the onset of the American Recovery and Reinvestment Act of 2009 (ARRA), and the over ten thousand (10,000) fold increase in dollars, the Department of Human Services (TDHS) developed a plan for the Weatherization Program that was transparent, scalable, and highly accountable.

The redesigned program, necessary for the large influx of money, focused on job creation which was a key component of the ARRA initiative. In addition, transparency, oversight and accountability were considered paramount in the development of the Tennessee Weatherization Program. An internet based system to track weatherization work was developed and implemented. A process was designed to bid each job individually and competitively. Additionally, statewide standardized procedures were employed which had not been previously applied. Also, weekly meetings were held with all agency staff and executive staff to develop and discuss implementation and ongoing quality improvement of the program as it evolved.

As noted in the recommendations we have and will continue to ensure that the sub-recipients install only those weatherization measures that are allowable and meet or exceed the savings to investment ratio standards. Also, we will continue our final inspection process which currently exceeds the required five percent and continue to ensure the sub-recipients follow the proper change order procedures. We continue to strengthen our program through ongoing training sessions with auditors, contractors and agency staff, the development of technical experts at each agency, weekly conference calls to reinforce information disseminated, policy and technical memorandums, and direct technical support from the TDHS Technical Assistance Manager.

The following is the TDHS response to the findings identified by the DOE IG audit of the TDHS Weatherization Program as reported in the Draft Report provided to TDHS on July 21, 2011.

#### **Cost Effectiveness of Weatherization Work**

We do concur that the original audit was not always entered into NEAT/MHEA correctly. However, based on re-examination, had the data been correctly entered, all of the measures but six would have been cost effective.

#### **Quality of Weatherization Work**

As noted in the report, the TDHS cumulative failure rate decreased as a result of its training and technical assistance, and we concur with the findings of the report in this area. As also noted TDHS monitors have targeted lower performing contractors and agencies, therefore artificially inflating the failure rate.

#### **Changes in Planned Weatherization Work**

We concur that the agencies did not always ensure that change orders were approved prior to completion of the work. We previously identified this issue and on December 30, 2009 and again on December 29, 2010 provided additional guidance on the proper management of change orders.

#### **Eligibility of Homes Weatherized**

We concur with this finding, and have questioned the costs regarding the re-weatherization of homes.

George W. Collard  
August 3, 2011  
Page 2

### Program Weaknesses

TDHS has consistently and continually worked toward evaluation and improvement of the Weatherization Program. Management has been pro-active, using a multi-prong approach to address quality issues as they have presented themselves through various monitoring opportunities. Since the beginning of the ARRA program in Tennessee to the end of February 2011, TDHS has conducted over thirty five training sessions to address and improve the efficiency and effectiveness of the Weatherization Program.

### Recommendations

**1a.** We agree with this recommendation and have already taken steps to ensure only allowable weatherization measures are installed. TDHS has mandated that only those measures that meet or exceed the savings-to-investment ration are allowable, and TDHS has mandated training to address NEAT/MHEA proficiency. Auditors that do not attend mandated training are excluded from participation in the Tennessee Weatherization Program. We are planning to also exclude auditors with high failure rates from participation in the Program. In addition, technical experts have been developed at each agency to insure quality of work and soundness of audits. We have developed a network of agency staff to serve as technical experts to support the continued integrity and ensure appropriate interpretation of SIR, and to continue quality improvement.

**1b.** TDHS has begun to revise the auditor certification process to include testing that must be passed before the auditor is granted certification. In addition, new standard policies and procedures are being developed for newly approved contractors and auditors that include standards for delisting poor performers.

TDHS will work with the local agencies to develop standard policies and procedures for newly approved contractors and auditors, where they are subject to additional oversight and limited work for a specified period of time. We expect these policies and procedures to be implemented in the near future.

TDHS Inspection/Monitoring Unit has already implemented a plan to audit poor performers at a higher rate and to inspect a higher percentage of jobs for post inspections.

**1c.** TDHS program monitors are reviewing change orders during quarterly monitoring visits. In accordance with State Memorandum 10-43 issued December 29, 2010, TDHS has reviewed change orders exceeding 25% of the total job cost. This process has strengthened the focus on quality and positive outcomes of weatherization projects.

**2.** All appropriate questioned costs have been resolved (See Appendix 3, Exhibit A).



### East Tennessee Human Resource Agency, Inc.

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Knoxville, TN 37923  
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TDD (865) 681-1990  
[www.ethra.org](http://www.ethra.org)

August 4, 2011

Mr. George W. Collard  
Assistant Inspector General for Audits  
Office of Inspector General  
Department of Energy  
Washington, DC 20585

Dear Mr. Collard:

ETHRA Staff and Management reviewed the findings presented in your audit report titled "*The Department of Energy's Weatherization Assistance Program under the American Recovery and Reinvestment Act in the State of Tennessee*" and present our responses below.

#### **Summary Comments**

From the program's inception, ETHRA utilized the State provided programs, training, and directives as effectively as possible; however, only time would permit the establishment of uniform approaches and the thorough training of all program participants particularly as the ARRA directive to rapidly spend ARRA funds prevented a "normal" learning curve for integrating newly recruited auditors and contractors into the program. ETHRA ultimately solved this problem by weeding out over time unsuitable building contractors and energy auditors based on the quality and timeliness of results, and by providing on-the-job training and correction where necessary. However, as the OIG auditors observed, this approach did generate a high number of change orders and some mistakes. In all cases, ETHRA strove to ensure that failings by energy auditors and building contractors were not billed to ARRA funds and did not affect the quality of work provided to clients.

As of June 30, 2011, ETHRA received ARRA Weatherization grants totaling approximately \$8.7 million and had completed 2,152 weatherization projects, valued at approximately \$7.8 million. We believe that, given the number of projects completed and the challenges inherent in the rapid expansion of program coverage to meet ARRA spending requirements, ETHRA made relatively few mistakes while achieving the program's goal of improving the weatherization of client homes. Subsequent SIR recalculations indicated that the vast number of projects completed by ETHRA met the SIR guidelines set by the Tennessee Department of Health Service's (TDHS) April 2010 memo setting SIR goals. ETHRA's internal auditor will periodically sample weatherization projects to ensure that all measures meet target SIR specifications.

We also believe that implementation of the TDHS's database of prior weatherization projects will ensure that proposed weatherization candidates were not previous weatherization clients as had occurred at ETHRA on three projects.

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Area Agency on Aging & Disability    Workforce Development    Mountain Valley Community Services    Transportation  
Family Assistance    AIDS Support    Housing & Restoration    Corrections & Probation    Aging Services    Child Development

Mr. George Collard  
August 4, 2011  
Page Two

### Specific Issues

#### **Audit Finding:** Cost-Effectiveness of Weatherization Work

***ETHRA Response:*** We could not verify the OIG's tally of weatherization measures (i.e. 173 installed measures) reviewed so we cannot comment on their accuracy; however, we agree the auditor's judgment that three of the six weatherization projects included a few measures that did not meet established SIR goals or where the SIR was not recalculated after measures were added. We agree with the auditor's assessment that a discharge pipe was incorrectly installed on Job #60006EA4868, though this is not a SIR issue. We disagree with the OIG auditor's conclusions in regards to the following two projects.

**60006EA7453** The Energy Auditor could not perform a blower door test and, as a result, included an air infiltration measure that was not needed. ETHRA, in its review, identified this omission, determined that this measure was not needed, and executed a change order to remove it from the Work Order. An additional measure, installation of mechanical ventilation, was also excluded because ETHRA's review indicated that ventilation in the house after weatherization was adequate (SIR 2) and that additional measures were not needed. The Contractor was not paid for the excluded items. A copy of the signed change order accomplishing this was provided to the OIG auditor.

**60006EA9545** The OIG auditor questioned replacement of two doors; however, replacement doors were permitted where needed as a health and safety measure until January 12, 2011 when a DOE Weatherization Program Notice 11-6 discontinued this measure. Job #9545 was completed in April 2010.

We concur that the State's Single Audit Report identified one (of 25) project at ETHRA where file documents omitted the home owner's signature, evidencing the successful completion of contracted work. The situation surrounding this project is exceptional. ETHRA was not informed that the client was in a nursing home nor that the house was for sale until after the contractor had completed some HVAC work. Once this was known, work was immediately stopped. Eventually, ETHRA was able to locate the client and obtain the client's signature for work completed.

We also concur that ETHRA, in 9/09, completed the three weatherization projects identified by the State's Single Audit Report as including charges for installation of deck steps and railing. The State's Weatherization State Plan at that time permitted agencies to include some health and safety measures, where appropriate, in weatherization projects. In January 2010, the State began prohibiting the use of weatherization funds to provide ramps, railings, etc.

#### ***Corrective Action:***

ETHRA adheres to the January 2010 directive from the State and is not billing funds expended for access ramps as weatherization.

#### **Audit Finding:** Quality of Weatherization Work

***ETHRA Response:*** We concur that four of the ten homes reviewed by the OIG failed the final inspection. As the OIG indicates, ETHRA's final inspection is thorough and designed to ensure that contractor

Mr. George Collard  
August 4, 2011  
Page Three

workmanship is of high quality and complies with program requirements. During the initial phase of this program, this approach helped ETHRA weed out poor performing contractors, better ensuring that taxpayer funds were effectively utilized.

A review of the State Auditor's Single Audit Report discloses that State auditors found no deficiencies in their field review of 25 homes weatherized by ETHRA.

**Corrective Action:** None required.

**Audit Finding:** Changes in Planned Weatherization Work

**ETHRA Response:** We concur that some project files did not, at the time of the OIG audit, include written evidence that change orders were approved prior to work being invoiced or that site visits had been performed. Because of the large (12 counties, 4,900 sq miles) territory ETHRA's Weatherization Program covers, ETHRA did permit some change order approvals and site visits to be orally evidenced; however, ETHRA also required that in these and all cases, written documentation be completed before a contractor could be paid, without exception. A subsequent recalculation of SIRs related to these contracts disclosed that they complied with SIR targets.

We concur that change orders were not competitively rebid as there was no requirement to do so and that, on one project, an ETHRA contractor installed a heat pump whose cost exceeded that in the State's cost library. A SIR assessment was not performed prior to installation of the heat pump.

A review of the State Auditor's Single Audit Report discloses that State auditors found no deficiencies in a review of change order approvals related to their sample of 25 homes weatherized by ETHRA.

**Corrective Action:** ETHRA has implemented the State's recent directive, requiring prior State approval for all change orders increasing contract cost by 25% or more. In addition, all projects must meet SIR and cost guidelines prior to work initiation.

**Audit Finding:** Eligibility of Homes Weatherized

**ETHRA Response:** We concur that in 2009 ETHRA weatherized three homes that had previously received weatherization benefits; however, the homes were under different ownership and ETHRA's staff initially believed that eligibility was based on the applicant, not the home. In addition, ETHRA had developed a Microsoft Word-based document in an attempt to prevent duplication of Weatherization services to a specific location/client; however, information on projects completed prior to September 30, 2004 was incomplete.

**Corrective Action:** ETHRA now searches the TDHS database of prior weatherization projects to ensure that proposed weatherization candidates were not previously weatherized.

Mr. George Collard  
August 4, 2011  
Page Four

**Audit Finding:** Analytical Tools

***ETHRA Response:*** We concur. On June 30, 2009, the Tennessee Department of Human Services (TDHS) directed all weatherization contractors in Tennessee to use the NEAT (houses) and MHEA (mobile homes) software to identify specific weatherization measures needed by individual residences. Though all weatherization agencies were required to meet very aggressive ARRA goals, little or no training was initially available to instruct participants in using the software programs correctly. As a result, after completing several initial projects, ETHRA in union with the other contractors concluded that:

- the NEAT and MHEA programs were not user friendly and were difficult to navigate;
- each program offered multiple options for calculating weatherization needs, with different options producing different results;
- an incorrect option choice resulted in incorrect weatherization measures; and
- building contractors and energy auditors at ETHRA and throughout the State greatly varied in their ability to use the programs effectively.

Consequently, in July 2009, ETHRA and other weatherization contractors strongly urged that TDHS provide additional software training to building contractors and energy auditors to produce more uniform and predictable results. TDHS responded by scheduling a training session with Mark Ternes, a Department of Energy (DOE) representative who helped in the development of the software.

The ETHRA example cited by the OIG in reference to the cost library in this section is inaccurate. The \$1 cost represents the cost per square foot, not the entire cost. The NEAT program requires that an energy auditor enter the roof's total square footage to properly calculate the cost of a white coat roof.

**Corrective Action:** ETHRA continues to ensure that all staff and business partners participating in the Weatherization Program receive adequate training in the NEAT and MHEA programs. Also, ETHRA now uses the State-wide cost library to ensure that costs are current.

**Audit Finding:** Local Agency Final Inspections

***ETHRA Response:*** We concur. As previously noted ETHRA's final inspections are thorough and complete.

**Corrective Action:** None required.

**Audit Finding:** Change Order Controls

***ETHRA Response:*** We concur that the additional controls indicated in this report will strengthen controls over change orders.

**Corrective Action:** None required.

Mr. George Collard  
August 4, 2011  
Page Five

**Audit Finding:** State Auditor Weatherization Findings

**ETHRA Response:** None required.

**Corrective Action:** None required.

Thank you for this opportunity to respond to these issues. We hope our response helps present a fuller picture of the facts surrounding these items.

Sincerely,



Gary W. Holiway  
Executive Director

cc: Deputy Secretary  
Associate Deputy Secretary  
Acting Under Secretary for Energy  
Chief of Staff  
Joanne Hill, Director Energy Audits Division, DOE  
Jack Roach, Assistant Audits Division Director, DOE  
Lisa Elam, Tennessee Department of Human Services  
John Najberg, ETHRA Internal Auditor  
Deb Forkert, ETHRA Fiscal Director  
Sharon Daugherty, ETHRA Program Manager



# Shelby County Government

MARK H. LUTTRELL, JR.  
Mayor

August 3, 2011

George W. Collard  
Assistant Inspector General for Audits  
Office of Inspector General

Dear Mr. Collard,

This letter is in response to the draft Audit Report of the Department of Energy's Weatherization Assistance Program under the American Recovery and Reinvestment Act in the State of Tennessee. The following was noted in the report:

**At Shelby County, 2 of 10 homes failed the agency's re-inspections because the contractors had not properly installed windows and doors. Both of the homes had passed the agency's inspection, but when re-inspected at our request, the agency's inspectors identified problems.**

**Management's concurrence or non concurrence**

Shelby County CSA would like to clarify that the inspectors used in the program were NOT employees of Shelby County CSA. These inspectors were contracted inspectors trained by the State of Tennessee (or others). Shelby County CSA was given a list of inspectors trained to perform inspections and had no knowledge of the level of training or ability to satisfactorily complete assignments. Shelby County CSA agrees that the agency did not have enough staff to adequately inspect and supervise the work of subcontractors. However the agency was not allowed to hire any staff under the terms of the agreement with the State of Tennessee.

**Corrective actions already taken or planned to be taken by the agency**

Since the time of the audit, Shelby County CSA has had staff attend additional training so that they are more aware of quality issues. The agency also has expanded the number of contracted auditors to meet the volume of work. These auditors have also had additional training in order to more effectively do their assigned work.

The report also noted:

**In our review of documentation supporting the weatherization of 68 homes at ETHRA, Upper East and Shelby County, we found that on at least 40 occasions, energy measures had either been added to or deleted from the original planned work. Work order changes were often not approved until the work was invoiced and were made without the benefit of competition and in the absence of any cost-benefit analysis.**

**Management's concurrence or non concurrence**

Because of the poor performance of the energy auditors during the pre-audit phase, work orders were

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VASCO A SMITH, JR. ADMINISTRATION BUILDING  
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often incorrect and therefore change orders were needed. In some instances, particularly related to wall insulation, when the scope of work was explained to the homeowner, the work was voluntarily declined because they did not want holes put in their walls. In other instances, failure to note the proper condition of the home lead to frequent change orders.

**Corrective actions already taken or planned to be taken by the agency**

Shelby County CSA had staff attend additional training so that they are more aware of quality issues. The auditors also had additional training in order to more effectively do their assigned work. In the future, the agency plans to monitor the pre-audit quality more closely.

Another portion of the report noted:

**The State Auditor, in its Single Audit Report, also noted that 10 local agencies, including ETHRA and Shelby County, did not have adequate procedures in place to determine whether a dwelling had been weatherized since September 30, 1994**

**Management's concurrence or non concurrence**

Until the ARRA program, Shelby County CSA Weatherization Assistance Program averaged 150-200 homes per year. Consequently, no database of past work was maintained, although the paper records were kept and checked for previous work.

**Corrective actions already taken or planned to be taken by the agency**

Shelby County CSA has developed a database and will be able to track work done on homes from this point forward.

Please let me know if you need any additional information.

Best regards,



Dottie Jones  
Director  
Division of Community Services



**UPPER EAST TENNESSEE HUMAN DEVELOPMENT AGENCY, INC.**

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performed  
within the  
community

**SERVING  
TENNESSEE'S  
FIRST  
DISTRICT**

August 10, 2011

**MANAGEMENT CONCURRENCE**

**Upper East Tennessee Human Development Agency, Inc. management concurs with the findings pertaining to UETHDA in the Coordination Copy of the Draft Report on the State of Tennessee Weatherization Program.**

Respectfully submitted,

**Lois Smith**  
Executive Director

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