



Office of the Inspector General

Audit Report

To the Senior Vice President,
Marketing

REVIEW OF *energy right*[®] **PROGRAM PAYMENTS**

Audit Team
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Audit 2005-003F
July 19, 2005



Memorandum from the Office of the Inspector General

July 19, 2005

James D. Keiffer, OCP 2E-NST

REQUEST FOR MANAGEMENT DECISION – AUDIT 2005-003F – REVIEW OF ENERGY RIGHT® PROGRAM PAYMENTS

Attached is the subject final report for your review and management decision. Your staff's comments have been incorporated in the final report. You are responsible for determining the necessary actions to take in response to our findings. Please advise us of your management decision within 60 days of the date of this report.

Information contained in this report may be subject to public disclosure. Please advise us of any sensitive information in this report which you recommend be withheld.

If you have any questions, please contact D. Nikolaus Jordan, Auditor, at (865) 632-2135 or Gregory C. Jaynes, Deputy Assistant Inspector General, Inspections, at (423) 751-7821. We appreciate the courtesy and cooperation received from your staff during the audit.

Ben R. Wagner
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DNJ:SDB

Attachment

cc (Attachment):

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OIG File No. 2005-003F

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EXECUTIVE SUMMARY

Tennessee Valley Authority (TVA) distributors can participate in the *energy right*[®] Program, which was implemented to "promote the wider and better use of electricity by Distributor's residential and small commercial business customers, thereby permitting rates to be lower than would otherwise be necessary." Two facets of the *energy right* Program are the Heat Pump Plan (HP Plan) and the Water Heater Plan (WH Plan). Participating distributors receive Market Value Payments (MVPs)ⁱ from TVA based on the installation of energy-efficient heat pumps and water heaters. According to TVA Customer Service and Marketing's (CS&M) Residential and Small Commercial Products and Services (RSCPS), fiscal year (FY) 2004 MVPs totaled \$1.5 million for heat pumps and over \$700,000 for water heaters, which represented 7,235 heat pump and 16,067 water heater installations.

In order to further promote the installation of energy-efficient heat pumps, TVA makes financing available through a third-party financier, AmSouth Bank (AmSouth).ⁱⁱ According to RSCPS, (1) AmSouth executed a total of \$23.2 million *energy right* Program heat pump loans in FY 2004, and (2) the total loan portfolio balance as of September 30, 2004, was about \$106 million. RSCPS also stated that 377 loans totaling about \$1.1 million were written off as uncollectible in FY 2004.

We reviewed *energy right* Program MVPs to determine if payments were accurately calculated, effectively monitored, and properly disbursed. We also reviewed *energy right* Program transactions and supporting documentation to assess *energy right* Program process/documentation compliance. In summary, we found:

- MVPs for water heaters and heat pumps were generally applied correctly, and total invoice amounts were generally accurate including adjustments to applicable invoices. However, we found five pending MVPs that were apparently not paid, which related to (1) three invoices that could not be found and TVA Accounts Payable concluded were not paid and (2) one invoice where two applicable MVPs were not included. Also, the *energy right* Information System (erIS) does not provide the means to document and track adjustments.

ⁱ MVPs are a "monetary payment provided by TVA to Distributor for the installation of an energy-efficient measure that meets *energy right* Program requirements."

ⁱⁱ TVA does not provide a financing program for water heater installations.

- RSCPS personnel monitor MVPs by (1) requiring distributors to review and certify invoices and (2) reviewing *erIS* information for duplicate and/or unusual transactions. However, we found some MVPs were paid without complete and/or accurate *erIS* information.
- Distributors generally received MVPs in accordance with the *energy right* Program documentation guidelines. However, no verification occurred to ensure MVPs were made to distributors as approved by CS&M district specialists.
- Distributors' noncompliance with certain *energy right* Program process/documentation requirements increased TVA's financial risks. Specifically, required HP Plan and WH Plan documentation was not completed and/or prepared for some installations as required by the *energy right* Program guidelines. However, Quality Contractor Network (QCN) contractorsⁱⁱⁱ were used for heat pump installations as required.

We recommend the Senior Vice President, Marketing, take steps to:

- Ensure adjustments are documented and tracked.
- Ensure MVPs are supported by required *erIS* information. Also, consideration should be given to requiring the participant's name be included in *erIS*.
- Require verification that payments to distributors were made as approved by district specialists.
- Ensure that distributors comply with *energy right* Program documentation guidelines.

We have discussed the findings, conclusions, and recommendations with management, and they agree with our report and have taken or plan to take corrective action.

ⁱⁱⁱ To be listed in the QCN, contractors must meet certain TVA requirements and be listed by a distributor as eligible to install heat pumps.

BACKGROUND

Tennessee Valley Authority (TVA) distributors can participate in the *energy right*[®] Program, which was implemented to "promote the wider and better use of electricity by Distributor's residential and small commercial business customers, thereby permitting rates to be lower than would otherwise be necessary." Two facets of the *energy right* Program are the Heat Pump Plan (HP Plan) and the Water Heater Plan (WH Plan). Participating distributors receive Market Value Payments (MVPs)¹ from TVA based on the installation of energy-efficient heat pumps and water heaters. According to TVA Customer Service and Marketing's (CS&M) Residential and Small Commercial Products and Services (RSCPS), fiscal year (FY) 2004 MVPs totaled \$1.5 million for heat pumps and over \$700,000 for water heaters, which represented 7,235 heat pump and 16,067 water heater installations.

Upon completion of water heater and heat pump installations, participating distributors or TVA personnel input information into TVA's *energy right* Information System (*erIS*). Information is extracted bimonthly from *erIS* and reviewed by RSCPS's personnel for reasonableness and duplication.² The installation information is sent to the CS&M district specialists for review and approval. District specialists generate and approve invoices that are sent to each participating distributor for certification. Distributors submit the certified invoices to TVA Accounts Payable for payment.

HEAT PUMP PLAN

In order to further promote the installation of energy-efficient heat pumps, TVA makes financing available through a third-party financier, AmSouth Bank (AmSouth).³ AmSouth provides banking expertise and administration of the loan program. The distributor "will be the lender and the secured party for purposes of making the ultimate credit decision, preparing the documentation and collecting the monthly payments." However, as the financier, AmSouth has full recourse to TVA for any loan payments not received, and TVA excuses the distributor from uncollectible loan amounts as long as the distributor complies with the collection procedures. According to RSCPS, (1) AmSouth executed a total of \$23.2 million *energy right* Program heat pump loans in FY 2004, and (2) the total loan portfolio balance as of

¹ MVPs are a "monetary payment provided by TVA to Distributor for the installation of an energy-efficient measure that meets *energy right* Program requirements."

² *erIS* installation information is downloaded into spreadsheets to facilitate review and approval.

³ TVA does not provide a financing program for water heater installations.

September 30, 2004, was about \$106 million. RSCPS also stated that 377 loans totaling about \$1.1 million were written off as uncollectible in FY 2004.

Distributor-required HP Plan responsibilities, as prescribed in the TVA *energy right*[®] *Program Reference Manual*, include providing eligibility, installation, financing, and funding controls. Specifically, distributors are required to, among other things:

- Ensure eligibility requirements for financing have been met.
- Ensure all *energy right* Program documents are complete, have required signatures, and are retained in accordance with *energy right* Program guidelines.
- Obtain a perfected security interest⁴ in installed/financed heat pumps.
- Ensure work has been completed in accordance with *energy right* Program specifications and meets TVA minimum inspection requirements.
- Ensure heat pumps are installed by a contractor in TVA's Quality Contractor Network (QCN).⁵

WATER HEATER PLAN

The WH Plan is "designed to encourage the installation of energy efficient AEWHS [all-electric water heaters] in Dwellings and Businesses." While TVA does not provide a financing program for installations of water heaters, CS&M *energy right* information states, "The *energy right* Program can help you choose a safe, reliable, and efficient electric water heater."

The TVA *energy right* Program agreement between TVA and distributors states, "If participating in the WH Plan and if requested by TVA, Distributor shall provide a WCF [work completion form] as evidence that each AEWH submitted for an MVP has been installed." The WCF is the primary supporting documentation requirement beyond submitting information into eIS and certifying each invoice.

⁴ Perfection of a security interest occurs when "a financing statement is properly filed or there is possession or control over the collateral."

⁵ To be listed in the QCN, contractors must meet certain TVA requirements and be listed by a distributor as eligible to install heat pumps.

OBJECTIVES, SCOPE, AND METHODOLOGY

Our objectives were to (1) determine if *energy right* Program MVPs were accurately calculated, effectively monitored, and properly disbursed and (2) assess *energy right* Program process/documentation compliance. The scope of the audit included *energy right* Program MVPs for heat pumps and water heaters installed during FY 2004 and other selected transactions for the period October 1, 2003, through December 26, 2004.

To achieve our objectives, we:

- Obtained an understanding of the controls and processes relating to the *energy right* Program by:
 - Reviewing CS&M documentation including the CS&M and *energy right* website, an agreement/contract between TVA and distributors, and the *energy right*[®] *Program Reference Manual*.
 - Interviewing representatives of TVA's CS&M organization.
 - Reviewing and updating the flowchart of the MVP incentive process and controls.
- Reviewed *energy right* Program transactions to verify that (1) MVP invoice totals were accurate and distributors received payment, (2) no duplicate transactions existed, (3) invoice totals and adjustments were supported by *erIS* or other supporting documentation, and (4) distributors and TVA complied with *energy right* Program documentation guidelines. Specifically, we reviewed 59 of 6,767 heat pump and 59 of 14,904 water heater installations performed in FY 2004 as identified by *erIS*.⁶
- Judgmentally selected and reviewed 61 heat pump installations with loans funded through AmSouth between January 1, 2004, and December 26, 2004, to further assess compliance with *energy right* Program guidelines. For the heat pump transactions judgmentally and statistically selected, as discussed above, we contacted distributors to obtain applicable supporting *energy right* Program documentation and to verify heat pump loan payments.

This audit was performed in accordance with generally accepted government auditing standards. Although we did not test for compliance with laws and regulations, nothing came to our attention during the audit that indicated noncompliance with laws and regulations.

⁶ We used statistical attribute sampling methodology to identify sample sizes, and the sample selections were made randomly. Each sample size was based on a 5 percent maximum tolerable error rate and a 5 percent risk of incorrect acceptance.

FINDINGS

We reviewed *energy right* Program MVPs to determine if payments were accurately calculated, effectively monitored, and properly disbursed. We also reviewed *energy right* Program transactions and supporting documentation to assess *energy right* Program process/documentation compliance. In summary, we found (1) MVPs for water heaters and heat pumps were generally applied correctly and total invoice amounts were generally accurate, (2) RSCPS monitored MVPs through review of *erIS* data and by having distributors review and certify invoices, and (3) distributors generally received MVP payments in accordance with the *energy right* Program documentation guidelines. However, we also found:

- Invoice adjustments were not adequately documented and tracked in *erIS*.
- Some MVPs were paid without complete and/or accurate *erIS* information.
- Three MVP invoices were not paid and no verification occurred to ensure MVPs were made as approved by the district specialists.

We also found that some distributors did not comply with *energy right* Program process/documentation requirements.

CALCULATION OF MARKET VALUE PAYMENTS

Distributors receive \$50 for each water heater installed in accordance with the WH Plan. Until January 2004, TVA had two potential MVP amounts applicable to heat pumps (i.e., the MVP amount was \$100 or \$300), and the amount paid by TVA was dependent on the Seasonal Energy Efficiency Ratio (SEER) rating.⁷ Beginning January 16, 2004, distributors receive \$175 regardless of SEER class for heat pumps meeting *energy right* Program requirements. We found CS&M prescribed MVP amounts for 55 of the 59 water heater, and all 59 heat pump transactions we tested were applied correctly.⁸ For the four exceptions, we found the eligible MVP amounts were apparently not paid, as discussed in the Disbursement of Market Value Payments section of this report. We also found another water heater MVP, not included in our test sample, that was not paid.

⁷ "As defined by the Model Energy Code, SEER is the total cooling output of an air conditioner during its normal annual usage period for cooling (in Btu/hr) divided by the total electric energy (in Watt-hours) input during the same period."

⁸ Our assessment assumed prescribed heat pump incentive payments accurately reflected SEER ratings.

In addition, total invoice amounts were accurate for 108 of the 111 invoices we reviewed.⁹ Specifically, we found the correct MVP amounts were applied to the total number of installations, as identified by *erIS*, to determine the total MVP. For the three exceptions, we noted that:

- Two invoices had an MVP overpayment for a heat pump.
- One invoice was understated by two of the five water heater MVP amounts we identified as not being paid.

We also found four adjustments to the invoices we reviewed. We obtained documentation and explanations for each adjustment from the applicable CS&M district specialist, and these adjustments appeared appropriate. While the adjustments appeared appropriate, the only means to determine if an adjustment was within *energy right* Program guidelines was to contact the district specialists. RSCPS has consulted with TVA Information Services about including fields in *erIS* to identify and explain adjustments. Such information in *erIS* would also provide a means to verify that appropriate adjustments have been made.

MONITORING OF MARKET VALUE PAYMENTS

We determined that monitoring of MVPs occurs essentially by:

- Review and approval by CS&M district specialists and distributors.
- Review of *erIS* data for duplicates and unusual transactions by RSCPS personnel.

For the 111 invoices we reviewed, we found the invoices were generated/approved by district specialists and sent to distributors who certified the invoices before submitting them to TVA Accounts Payable for payment.¹⁰

We also reviewed spreadsheets, generated from *erIS* data, that included our review sample transactions. We found comments where RSCPS had reviewed the installation information for unusual transactions and duplicates. However, we also found 17 transactions where potential duplicates existed. According to district specialists:

⁹ The 118 water heater and heat pump transactions should have applied to 114 distributor invoices. Three of the 114 invoices were not found (i.e., the three invoices were not submitted and/or not paid). Therefore, we could only review a total of 111 invoices.

¹⁰ Approval methods by district specialists varied: (1) 74 invoices, which contained 78 sample items, were signed by hand; (2) 8 invoices had electronic signatures; and (3) 29 invoices had typed signatures.

- Four were not duplicates; however, two of the four had incorrect address information in *erIS*.
- Two duplicates were identified and never invoiced.
- Three duplicates were corrected via adjustments to previous invoices, and adjustments were pending for three additional duplicates.
- Four transactions were potential duplicates. The district specialists contacted did not provide adequate information to make a determination. It was emphasized to us that more than one water heater could be installed in a residence.
- One entry was an undiscovered duplicate. We were told that an adjustment would be included on the next distributor invoice.

Certain required information must be entered into *erIS* prior to the distributor receiving an MVP, according to RSCPS. The required information includes the 911 street address, city, state, and zip code of the dwelling where the water heater or heat pump was installed. We found that many of the fields in the *erIS* database were not being completed, as required. Specifically, we found:

- City names, P.O. Boxes, and individual names used as street addresses.
- Dwelling numbers not included in the street or apartment address.
- Dwelling numbers used as the street address.

The information in *erIS* is key to monitoring, including the identification of duplicates. We also believe the participant name should be required to facilitate monitoring of duplicate or unusual transactions.

DISBURSEMENT OF MARKET VALUE PAYMENTS

MVP invoices are signed by the district specialist and sent for review and certification by the distributor. The distributor submits the certified invoice to TVA Accounts Payable for processing and payment. According to the manager of RSCPS, distributors have responsibility for ensuring payments are received. We found that the distributors received MVPs for 114 of the 118 transactions we reviewed. Explanations for the four exceptions were as follows:

- TVA Accounts Payable told us that three invoices applicable to the time period for three installations/MVPs could not be found. Therefore, the MVPs/invoices were apparently not paid.

- A district specialist stated that an MVP was mistakenly not included on the applicable invoice and therefore was not paid.

We also noted that TVA Accounts Payable only reviews the certified invoices submitted by distributors for mathematical accuracy. Neither CS&M personnel nor Accounts Payable verify that invoices are paid as approved by district specialists. Distributors could make changes to invoices, submit the invoices to TVA Accounts Payable, and receive payment without knowledge and approval by CS&M district specialists. We found a distributor adjusted its invoice for an MVP that was due another distributor. Because the district specialist was not made aware of the adjustment, the entitled distributor did not receive payment.

***energy right*[®] PROGRAM PROCESS/DOCUMENTATION REQUIREMENTS**

We found that some distributors did not comply with certain *energy right* Program guidelines pertaining to both the HP Plan and WH Plan. Specifically, the process/documentation requirements were often not adhered to by distributors for the installation transactions we reviewed. Noncompliance by participating distributors increases TVA's financial risks.

Heat Pump Plan Noncompliance

TVA's *energy right* Program guidelines and the contract with distributors require that certain documentation (*energy right* Program forms) must be maintained/required for financed and non-financed *energy right* Program heat pump installations. In summary, we found that distributors maintained required documents with customer signatures for only 37 of the 120 heat pump transactions we tested.¹¹ For the remaining 83 heat pump transactions we reviewed, we found that the required forms were (1) unsigned by the required *energy right* Program participant(s) or (2) nonexistent. (The Appendix summarizes by document the total maintained and signed by customers.) We also found that many of the document fields were not completed, but *energy right* Program guidelines are unclear as to what requested information is required.¹²

¹¹ Our analysis considers CS&M Resident Products' assertions that both a Contractor-Customer Affidavit and WCF are not required.

¹² We reviewed 120 transactions that represented 59 from our statistical sample and 61 from our judgmental sample. For the 120 transactions, 102 were financed through the *energy right* Program.

Due to the lack of compliance with *energy right* Program guidelines and TVA's potential liability, we contacted distributors to determine whether *energy right* Program participants were making payments for the 102 *energy right* Program-financed heat pump installations included in our review. This was an indirect verification of the heat pump installation since the loan payments were made through each participant's utility bill. For the 102 financed heat pumps, only three (2.9 percent) participants were not current on their heat pump loan through their utility bill. We also compared the reported installation contractors with the TVA QCN list for all 120 heat pump installations. We found that in each instance the reported contractor was on the TVA QCN list at the time of installation.

Water Heater Plan Noncompliance

The contract between each participating distributor and TVA requires the distributor to maintain a WCF as evidence that a water heater submitted for an MVP has been installed. The *energy right*[®] *Program Reference Manual* guidelines also state that documentation should be maintained by the distributors. The manager of RSCPS informed us that CS&M was not requiring distributors to maintain documentation for AEWH installations. Therefore, the only information supporting MVPs was the information included in *erIS* by distributors. RSCPS subsequently agreed that distributors should maintain written documentation to support MVPs.

RECOMMENDATIONS

We recommend the Senior Vice President, Marketing, take steps to:

- Ensure adjustments are documented and tracked.
- Ensure MVPs are supported by required *erIS* information. Also, consideration should be given to requiring the participant's name be included in *erIS*.
- Require verification that payments to distributors were made as approved by district specialists.
- Ensure that distributors comply with *energy right* Program documentation guidelines.

MANAGEMENT'S RESPONSE

We have discussed the findings, conclusions, and recommendations with management, and they agree with our report and have taken or plan to take corrective action.

**COMPLIANCE WITH *energy right*[®] PROGRAM
DOCUMENTATION GUIDELINES**

Listed below is a summary for the 120 heat pump transactions we reviewed. This represented 102 heat pumps financed through the *energy right* Program and 18 that did not participate in the TVA financing program. The table lists:

- Required documents for *energy right* Program heat pumps, according to RSCPS, categorized by financed and non-financed.
- The total number that were maintained with participant signature, maintained without participant signature, and nonexistent.

102 Financed Heat Pumps

Necessary Documents	Maintained with Participant Signature		No Participant Signature		No Document	
	Count	Percentage	Count	Percentage	Count	Percentage
Contractor - Customer Affidavit	9	9%	0	0%	93	91%
Heat Pump Plan Work Completion Form	87 ²	85%	2	2%	13	13%
Agreement to Participate	89	87%	0	0%	13	13%
Repayment Agreement	102	100%	0	0%	0	0%
Security Agreement	93	91%	1	1%	8	8%
Notice of Right to Cancel	82	80%	1	1%	19	19%
Settlement Request ¹	59	58%	N/A	N/A	43	42%
UCC Financing Statement ¹	49	48%	N/A	N/A	53	52%

18 Non-Financed Heat Pumps

Necessary Documents	Maintained with Participant Signature		No Participant Signature		No Document	
	Count	Percentage	Count	Percentage	Count	Percentage
Contractor - Customer Affidavit	4	22%	1	6%	13	72%
Heat Pump Plan Work Completion Form	7	39%	6	33%	5	28%

¹ Participant signature not required.

² One item under the financed heat pumps counted as "Maintained with Participant Signature" had a New Home Work Completion Form, which has no place for signatures, instead of a Heat Pump Plan Work Completion Form.