



Memorandum from the Office of the Inspector General

September 29, 2006

Thomas D. Cosby, LP 6A-C

**FINAL REPORT – INSPECTION 2006-518I – CONCERNS RESOLUTION PROGRAM –
TVA NUCLEAR 2006**

Attached is the subject final report for your review. This report does not include any recommendations and is to be used for informational purposes only. Accordingly, no response is necessary.

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 Michael A. Driver, Senior Auditor, at (423) 751-8158 or Gregory C. Jaynes, Deputy Assistant Inspector General, Inspections, at (423) 751-7821. We appreciate the courtesy and cooperation received from your staff during this review.

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Attachment

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OIG File No. 2006-518I



Tennessee Valley Authority
Office of the Inspector General

Inspection Report

CONCERNS RESOLUTION PROGRAM - TVA NUCLEAR 2006

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2006-518I
September 29, 2006

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EXECUTIVE SUMMARY

The Tennessee Valley Authority Nuclear (TVAN) Concerns Resolution Program (CRP) is responsible for addressing nuclear safety and quality issues. We assessed the effectiveness of the program in achieving its fundamental mission by (1) surveying 335 TVAN and contractor employees concerning their willingness to report nuclear safety and quality issues, (2) reviewing closed case files, and (3) tracking the number of allegations recorded by the Nuclear Regulatory Commission (NRC) involving Tennessee Valley Authority's (TVA) nuclear program. In summary, we determined the:

- TVAN workforce (i.e., TVA employees and contractor employees with unescorted access to TVA's nuclear facilities) generally felt free to raise nuclear safety and quality issues. However, many of the responses were not as affirmative as the prior survey. For example, the percentages of TVA employees and contractor employees who felt confident in the effectiveness of the Problem Evaluation Reports and Corrective Action Program declined significantly (see page 4).
- Issues associated with the closed files were generally addressed. However, we found a procedural error for TVA's CRP at Browns Ferry Nuclear Plant. In four instances employees had been granted confidentiality, but the corresponding agreement could not be located. The reason for this occurrence resulted from the concerned individual contacting Concerns Resolution Staff by telephone and not appearing in person to sign the confidentiality agreement form.
- Number of allegations made directly to NRC by TVAN's workforce has increased in the last three years. Despite this increase, the number of allegations remains lower than the high years 1996 - 1997 (see page 6).

Based on these findings, we believe the fundamental mission of the CRP is being met.

BACKGROUND

The Tennessee Valley Authority Nuclear (TVAN) Concerns Resolution Program's (CRP) fundamental mission is to help ensure all Tennessee Valley Authority (TVA) and contractor employees supporting TVAN "are free to express safety issues, concerns, or differing views to TVAN management without fear of reprisal, and all such concerns and issues are investigated and resolved in a timely manner."

TVAN's Concerns Resolution Staff (CRS), which is responsible for implementing the CRP, "provides an alternate avenue for the resolution of differing views and opinions related to the safe operation of TVAN plants." While the primary responsibility of the CRS is the resolution of nuclear safety and quality issues, other issues may be handled by the CRS at the discretion of TVA management and the applicable CRS site representative.

Larger managed task contractors have an Employee Concerns Program (ECP), a program for contractor employees with a mission analogous to the CRS mission for TVAN employees.¹ While contractor employees are encouraged to use the ECP, these employees may also express concerns or issues directly to the CRS. The ECPs are subject to CRS' oversight.

In 1986, TVA committed to the Nuclear Regulatory Commission (NRC) that TVA's Office of the Inspector General would periodically review the CRP. Since 1994, we have assessed program effectiveness using a standardized approach of (1) surveying TVAN's workforce and (2) reviewing closed case files. These measures enable us to compare and trend survey results. Our previous review was issued in August 2004.

This report addresses the results of our overall assessment. Also, at the request of TVA management, we are issuing a separate report addressing the willingness of Browns Ferry Nuclear (BFN) employees and contractors to report nuclear safety and quality issues (Inspection 2006-519I).

We plan to summarize the comments volunteered by responders into categories and forward the results to management for consideration.²

¹ At the time of our review, Stone & Webster Construction, Inc. (SWCI), and Bechtel Corporation (Bechtel) were the TVA contractors that had an ECP at TVA.

² We will not categorize any comments in such a way that the confidentiality of the survey respondent will be lost.

OBJECTIVE, SCOPE, AND METHODOLOGY

Our objective was to determine if the CRP was effectively accomplishing its fundamental mission. To achieve our objective, we:

- Reviewed applicable CRS and ECP policies and procedures.
- Randomly selected and interviewed 335 of the 7,294 TVAN and contractor employees who had access to TVA's nuclear plants as of May 24, 2006, to determine to what extent TVAN's workforce was willing to report nuclear safety and quality issues. Our sample size allowed us to achieve a 95 percent confidence level. We set our error rate at 31 percent.³
- Surveyed 181 TVAN employees and 154 contractor employees located at TVAN Corporate offices in Chattanooga, BFN, Watts Bar Nuclear Plant (WBN), and Sequoyah Nuclear Plant (SQN). Not all of the respondents answered each question in a quantifiable manner. We used the complete and quantifiable responses for each question to calculate the percentages reported within this report. We also requested each interviewee to complete an anonymous feedback form, thus giving the surveyed employees another opportunity to provide additional information about the program or any other concerns.
- Reviewed all case files (126 CRS and 122 ECP) provided to us by the CRS and ECP representatives as being closed from June 1, 2004, to May 1, 2006. We assessed each file to determine whether it contained evidence that the CRS and ECP representatives had properly addressed the issues.
- Obtained historical data on the number of allegations recorded by NRC relative to TVA and total TVAN employment for calendar years 1996 through May 2006. Based on the number of allegations through June 2006, we annualized a projection for the year 2006. The numbers of allegations are reported without reference to the subject matter or the identity of the concerned individuals. We did not attempt to verify this data.

We did not assess CRS' effectiveness relative to current issues or open files. We performed this inspection in accordance with the "Quality Standards for Inspections."

³ We determined the error rate by using the greatest number of negative responses to any single critical question in the 2004 TVAN CRP review. In this case, question 17 of the 2004 TVAN employee survey had 31 percent of respondents answering in the negative.

FINDINGS

In our opinion, the CRS and ECP are effectively achieving the fundamental mission of TVA's CRP. In summary:

- Our 2006 survey results demonstrate TVAN's workforce generally felt free to raise nuclear safety and quality issues. However, many of the responses were not as affirmative as the prior survey. For example, the percentages of TVA employees and contractor employees who felt confident in the effectiveness of the Problem Evaluation Reports (PER) and Corrective Action Program (CAP) declined significantly.
- The CRS and ECP representatives generally addressed issues in the case files we reviewed. However, we found a procedural error for TVA's CRP at BFN. In four instances employees had been granted confidentiality, but no corresponding confidentiality agreement form was located. The reason for this occurrence resulted from the concerned individual contacting CRS by telephone and not appearing in person to sign the confidentiality agreement form.
- The number of allegations made directly to NRC by TVAN's workforce has increased in the last three years. Despite this increase, the number of allegations remains lower than the high years 1996 - 1997.

SURVEY RESULTS

Our survey results indicate TVAN's workforce generally felt free to raise nuclear safety and quality issues. However, many of the responses were not as affirmative as the prior survey. For example, the percentages of TVA employees and contractor employees who felt confident in the effectiveness of the problem resolution process declined significantly (see Appendices A and B). Specifically, we determined:

- 98.8 percent of TVAN employees and contractors said they would report nuclear safety or quality problems through some avenue. Also, 88.9 percent of TVAN employees and 89.6 percent of contractor employees said they would report a nuclear safety or quality problem to their primary concerns program (i.e., CRS or ECP). Additionally, of the contractor employees who were aware the CRS existed, 80.9 percent would report a nuclear safety or quality problem to the CRS.

- 98.3 percent of TVAN employees and 94.1 percent of TVAN contractor employees were aware the CRS existed as a mechanism for reporting employee concerns. In addition, 93 percent of contractor employees knew their company had an ECP. At the time of our review, SWCI and Bechtel were the only contractors that had an ECP at TVA.
- 89.5 percent of TVAN employees and 85.7 percent of TVAN contractor employees who were aware of their respective programs felt free to raise intimidation and harassment concerns to either the CRS or ECP. Of the 16 TVAN employees who did not respond affirmatively to this question, two felt the CRS would not effectively address their problems, two said they would handle it personally, five feared reprisal, six had a nonnegative reason, and one said they would report it elsewhere. Of the 11 contractor employees who did not respond affirmatively to this question, three felt the CRS or ECP would not effectively address their problems, three feared reprisal, one said they would handle it personally, one said it would hurt their career, one said they would report it elsewhere, and two had a nonnegative reason.
- 94.5 percent of TVAN employees and 93.5 percent of TVAN contractors would report a problem unrelated to nuclear safety or quality to their supervisors.
- 81.2 percent of TVAN employees and 86.4 percent of TVAN contractors felt free to express an unpopular view without hurting their careers.

On the question pertaining to the effectiveness of PERs and the CAP, we found that both TVA employees and contractor employees were less confident in the process to effectively address issues than in any other survey we have done. Specifically, 60.2 percent of TVAN employees and 59.1 percent of TVAN contractors believed PERs and the CAP are effective in correcting issues. These affirmative rates are substantially lower than the 69 percent and 68 percent affirmative rates for TVA employees and contractors, respectively, calculated in our 2004 survey.

If an employee's answers are not affirmative, we asked them if they would explain their reluctance. On the issue of the PER program's effectiveness, we observed that 59.4 percent of those who work in TVAN believe the program is effective. Many people claimed that PERs are written too often, or PERs are written on insignificant matters or issues that should be addressed elsewhere. The other criticisms were for matters such as:

- The electronic CAP system leads to inefficiency.
- Sometimes the root cause of the problem is not determined.
- Sometimes PERs are written punitively against people.

CLOSED FILES

We reviewed the 126 CRS files and 122 ECP files that were closed through May 1, 2006, to determine if the CRS fulfilled its responsibility for ensuring concerns are properly addressed. In our opinion, based on the information included in the 248 files, the CRS and ECP representatives generally addressed the issues. However, we noted that the documentation for SWCI ECP at both WBN and SQN were not as detailed as the ECP for BFN. File closure sheets which identify the date and reason for the file closure were not found in several files.

In addition, we found a procedural error for TVA's CRP at BFN. In four instances employees had been granted confidentiality, but no corresponding confidentiality agreement form was located. The reason for this occurrence resulted from the concerned individual contacting CRS by telephone and not appearing in person to sign the confidentiality agreement form.

ALLEGATIONS MADE TO NRC

As illustrated in Figure 1, the number of allegations recorded by NRC has increased in the last three years.

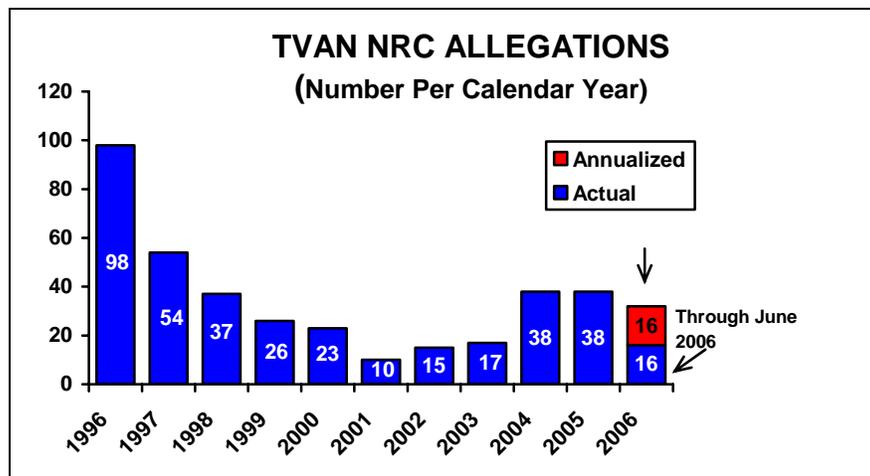


Figure 1

Much of the decrease in Figure 1 from 1996 through 2003 has been attributed to reduced employment in TVAN's workforce. Similarly, an increase in TVAN's workforce associated with the Browns Ferry Unit 1 restart project may be related to the recent increase in allegations.

**SUMMARY OF SURVEY RESPONSES
FROM TVA NUCLEAR EMPLOYEES**

Year of Concerns Resolution Program Survey	<u>2006</u>	<u>2004</u>	<u>2002</u>	<u>2000</u>	<u>1998</u>	<u>1996</u>
TVA Nuclear Employees Interviewed	181	173	180	194	235	203
	Affirmative Response Results¹					
	(Percentages)					
1. Would report a nuclear safety or quality problem.	99.4	100	99.4	100	100	97.5
2. Would report a nuclear safety or quality problem to supervisor.	99.4	99.4	98.9	97.9	100	99.5
3. Would report a nuclear safety or quality problem to supervisor <u>first</u> .	90.6	94	93	92	92	92
4. Immediate supervisor would be among top three choices for reporting nuclear safety or quality problems.	93.9	97	94	94	97	96
5. Aware that TVA has a Concerns Resolution Staff (CRS) for reporting employee concerns.	98.3	96	100	99	99	99
6. Would report nuclear safety or quality problems to the CRS. ²	88.9	93	91	94	94	93
7. Have used the CRS program.*	10.5	12	13	11	9	17
8. Would report a problem unrelated to nuclear safety or quality to supervisor.	94.5	97	98	97	98	97
9. Would feel free to express an unpopular view without hurting career.	81.2	87	88	85	86	78
10. Have initiated a Problem Evaluation Report (PER) within the last two years.*	66.3	65	62	55	---	---
11. Believe the PER/Corrective Action Program is effective in correcting issues.	60.2	69	80	81	91	---

¹ The affirmative response percentages were calculated by dividing the yes answers by the sum of all the answers.

² These questions were asked only to employees who were aware TVA had a CRS.

* Questions 7 and 10 ask for responses that depend greatly on the individual's unique circumstances. We made no effort to evaluate these responses.

**SUMMARY OF SURVEY RESPONSES
FROM TVA NUCLEAR EMPLOYEES**

12. What do you consider to be among the primary purposes of TVA's CRS?³

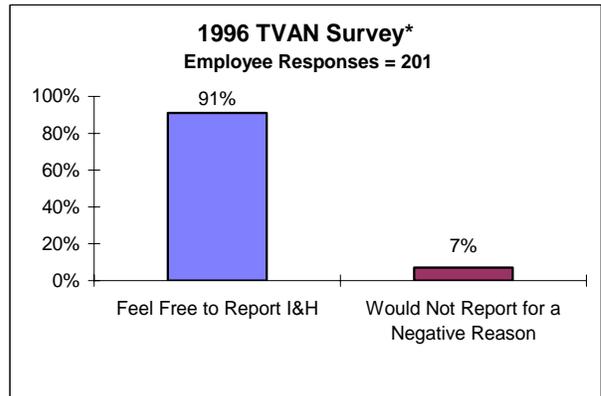
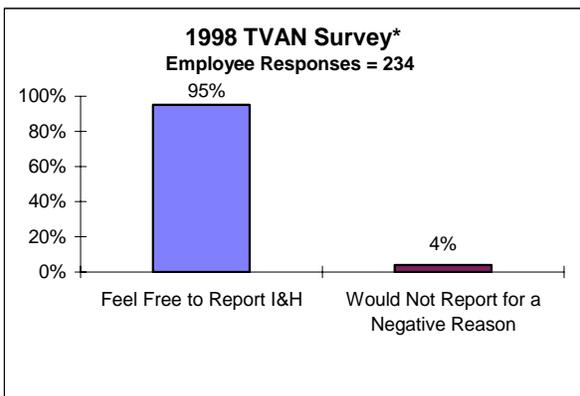
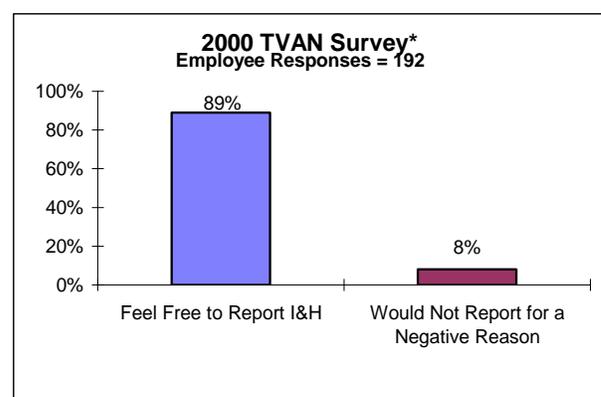
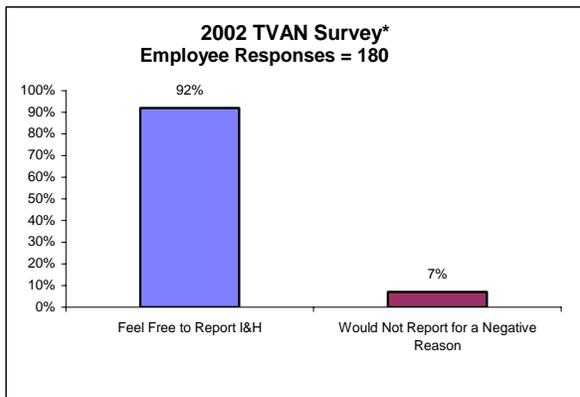
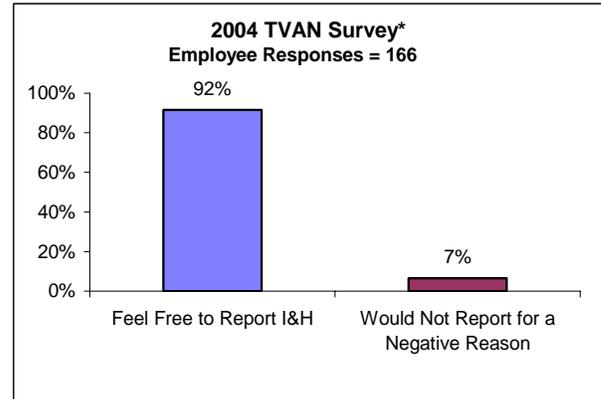
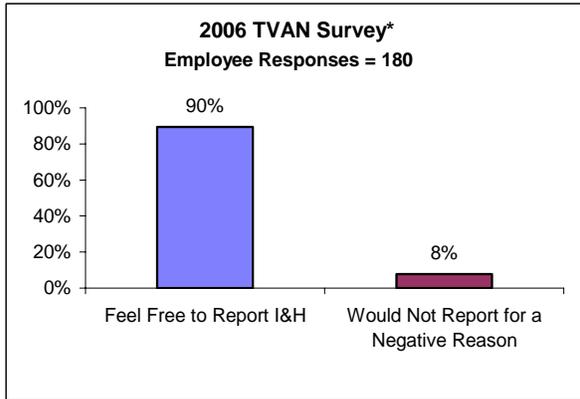
Primary Purpose	Calendar Year					
	2006	2004	2002	2000	1998	1996
Alternate / Additional path to line management	46.4%	47%	43%	42%	28%	48%
Investigate / Record nuclear safety concerns	22.6%	21%	13%	9%	18%	15%
Provide a safe harbor to register concerns	10.5%	8%	4%	14%	9%	10%
Catch concerns before they become problems	2.7%	7%	5%	2%	8%	6%
Handle management and personnel issues	4.4%	5%	3%	2%	3%	4%
Other reasons	13.4%	12%	32%	31%	34%	17%

Number Interviewed	181	166	180	194	235	203
Number of Responses	251	193	233	235	274	250

³ These questions were asked only to employees who were aware TVA had a CRS.

**SUMMARY OF SURVEY RESPONSES
FROM TVA NUCLEAR EMPLOYEES**

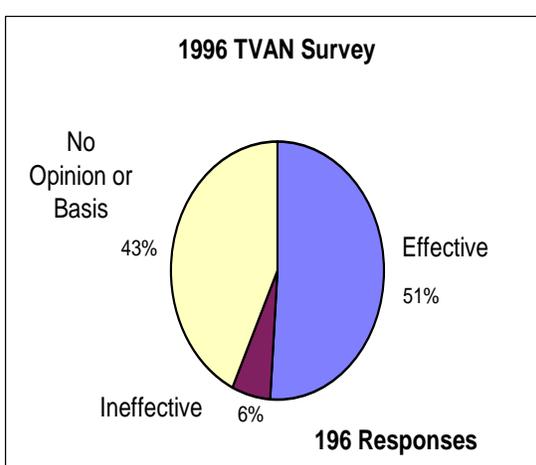
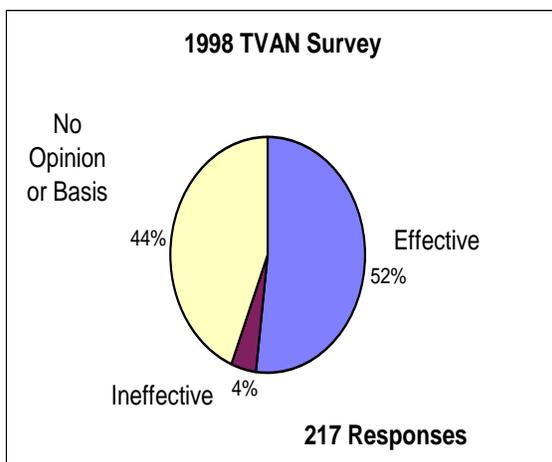
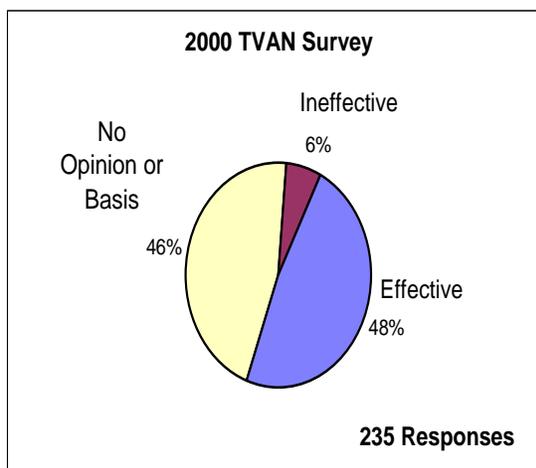
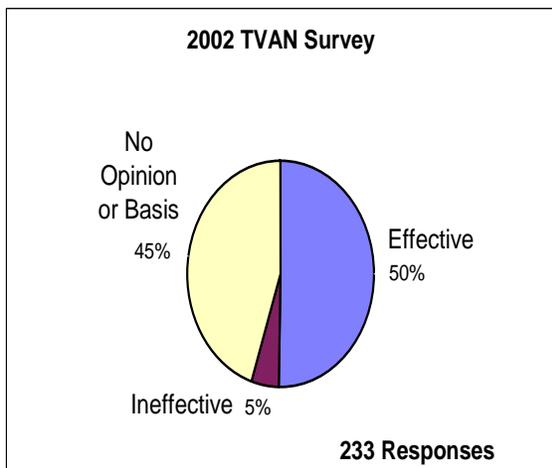
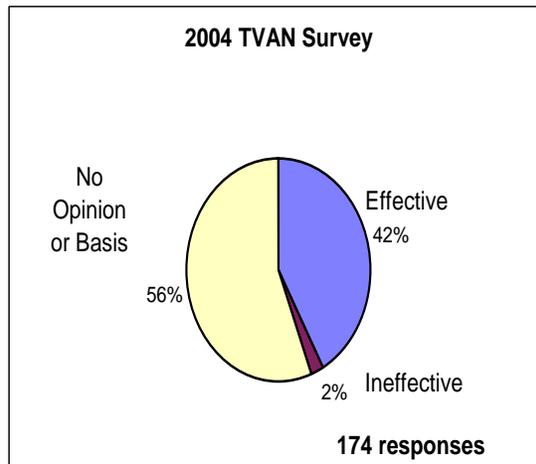
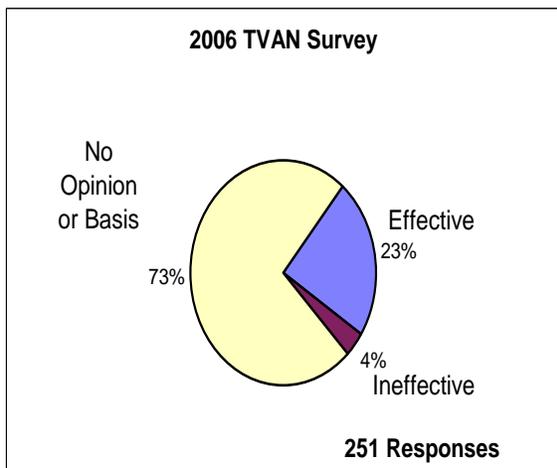
13. Do you feel free to raise Intimidation and Harassment (I&H) concerns with the CRS?⁴



⁴ These questions were asked only to employees who were aware TVA had a CRS.

**SUMMARY OF SURVEY RESPONSES
FROM TVA NUCLEAR EMPLOYEES**

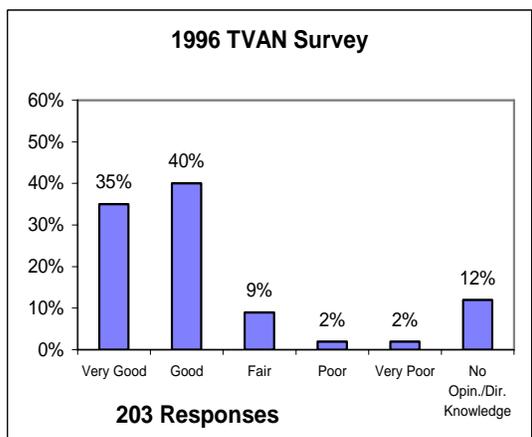
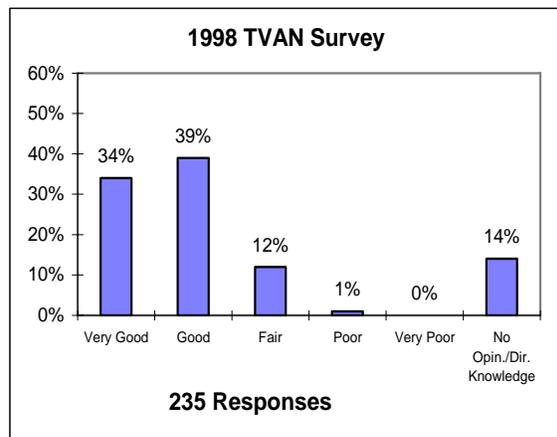
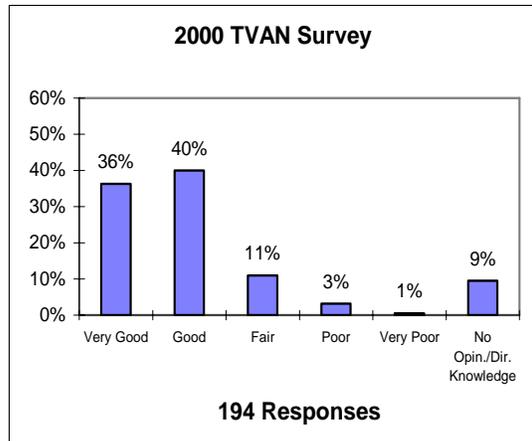
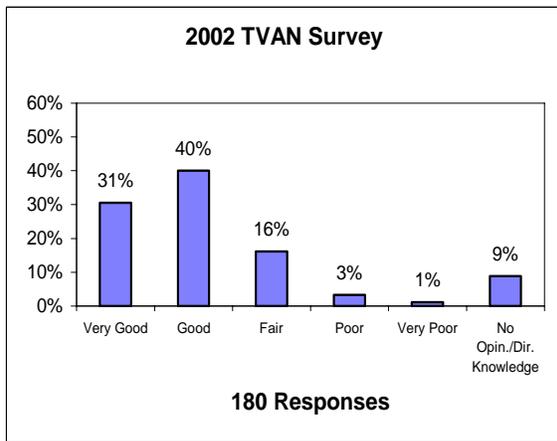
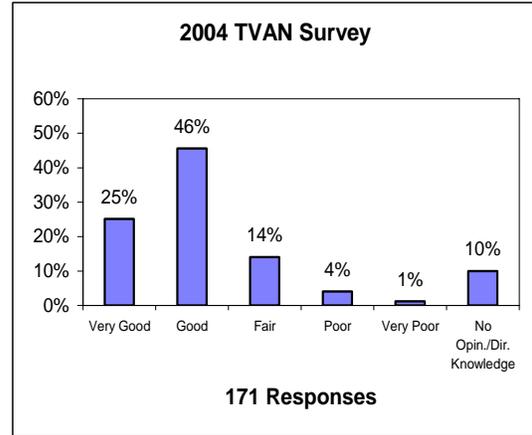
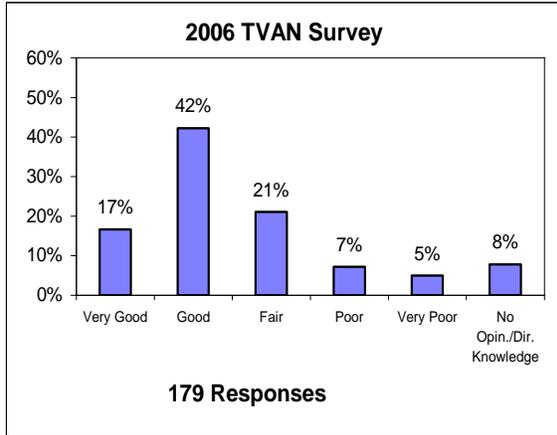
14. Do you feel the CRS is effective?⁵



⁵ These questions were asked only to employees who were aware TVA had a CRS.

**SUMMARY OF SURVEY RESPONSES
FROM TVA NUCLEAR EMPLOYEES**

15. In your judgment, how well are problems being resolved at your site?



**SUMMARY OF SURVEY RESPONSES
FROM TVA NUCLEAR CONTRACTOR EMPLOYEES**

Contractor Employees Interviewed	154	64	95	55	78	53
	Affirmative Response Results¹					
	(Percentages)					
1. Would report a nuclear safety or quality problem.	98.1	100	98.9	100	100	100
2. Would report a nuclear safety or quality problem to supervisor.	97.4	100	98.9	100	100	100
3. Would report a nuclear safety or quality problem to supervisor <u>first</u> .	82.5	94	89	87	92	83
4. Immediate supervisor would be among top three choices for reporting nuclear safety or quality problems.	92.2	97	89	91	97	85
5. Aware that TVA has a Concerns Resolution Staff (CRS) for reporting employee concerns.	94.1	97	95	95	96	100
6. Aware that TVA contract employer has an Employee Concerns Program (ECP) for reporting employee concerns.	93	100	97	100	99	100
7. Would report nuclear safety or quality problems to CRS/ECP. ^{2,3}	89.6	94	96	98	90	98
8. Would report nuclear safety or quality problems to CRS (contractors with an ECP). ²	80.9	97	100	100	89	96
9. Have used the CRS program.*	11.3	8	9	4	9	13
10. Have used the ECP program.*	8.4	9	6	11	7	12
11. Would report a problem unrelated to nuclear safety or quality to supervisor.	93.5	95	96	100	94	96
12. Would feel free to express an unpopular view without hurting career.	86.4	86	88	89	82	89

¹ The affirmative response percentages were calculated by dividing the yes answers by the sum of all the answers.

² These questions were asked only to those who were aware of the CRS/ECP.

³ The primary program for TVA employees is the CRS, whereas the primary program for contractor employees is the ECP. Contractor employees who do not have an ECP use the CRS as their primary program.

* Questions 9 and 10 ask for responses that depend greatly on the individual's unique circumstances. We made no effort to evaluate these responses.

**SUMMARY OF SURVEY RESPONSES
FROM TVA NUCLEAR CONTRACTOR EMPLOYEES**

Year of Concerns Resolution Program Survey	<u>2006</u>	<u>2004</u>	<u>2002</u>	<u>2000</u>	<u>1998</u>	<u>1996</u>
Contractor Employees Interviewed	154	64	95	55	78	53

Affirmative Response Results
(Percentages)

13. Have initiated a Problem Evaluation Report (PER) within the last two years.*	22.7	20	16	16	---	---
14. Believe the PER/Corrective Action Program is effective in correcting issues.	59.1	68	84	87	89	---
15. What do you consider to be among the primary purposes of the CRS/ECP? ⁴						

Primary Purpose	Calendar Year					
	2006	2004	2002	2000	1998	1996
Alternate / Additional path to line management	27.2%	27%	28%	33%	22%	24%
Investigate / Record nuclear safety concerns	23.4%	24%	16%	20%	25%	22%
Provide a safe harbor to register concerns	11.6%	13%	4%	15%	11%	10%
Catch concerns before they become problems	7.8%	10%	10%	11%	7%	5%
Handle management and personnel issues	3.9%	1%	4%	3%	9%	10%
Other reasons	26.1%	24%	38%	18%	26%	29%

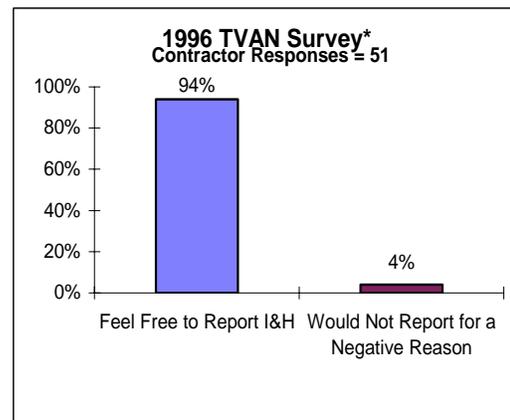
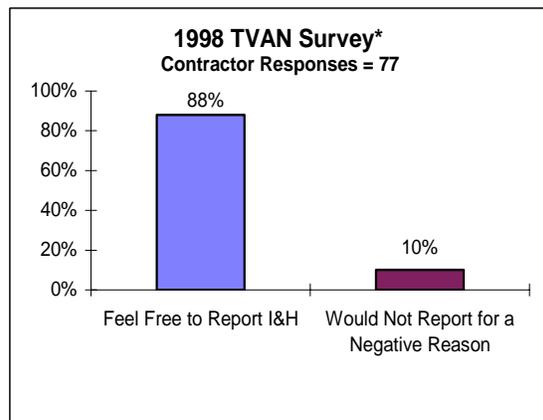
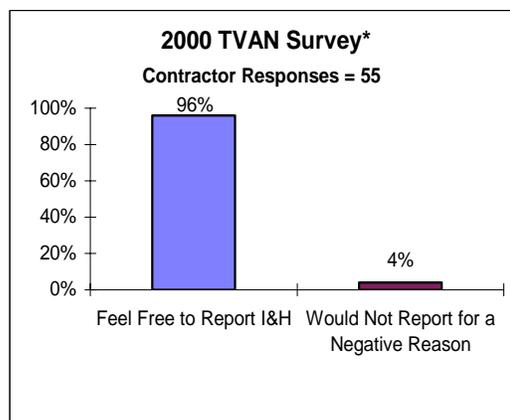
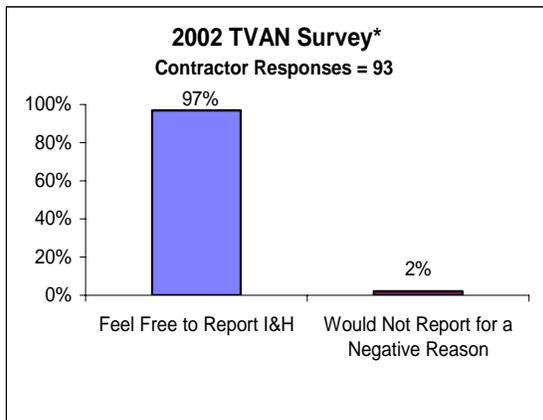
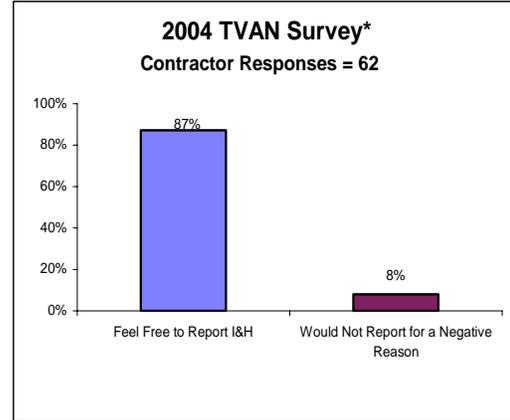
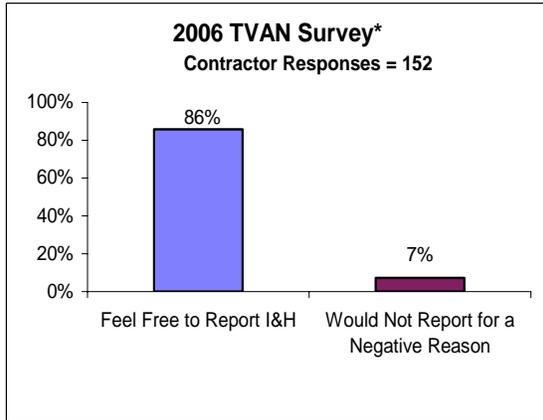
Number Interviewed	154	64	95	55	78	53
Number of Responses	123	78	117	61	102	59

⁴ These questions were asked only to those who were aware of the CRS/ECP.

* Question 13 ask for responses that depend greatly on the individual's unique circumstances. We made no effort to evaluate these responses.

SUMMARY OF SURVEY RESPONSES FROM TVA NUCLEAR CONTRACTOR EMPLOYEES

16. Do you feel free to raise Intimidation and Harassment (I&H) concerns with CRS/ECP?⁵

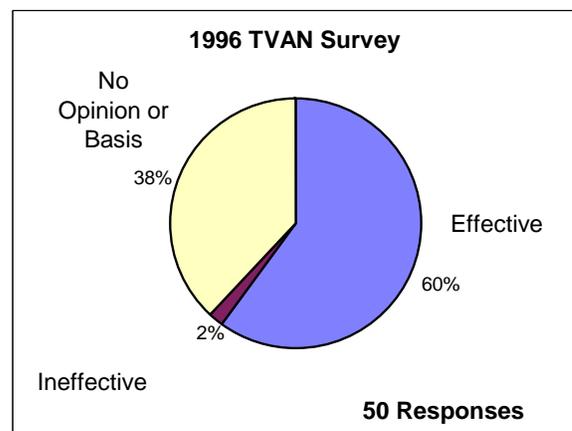
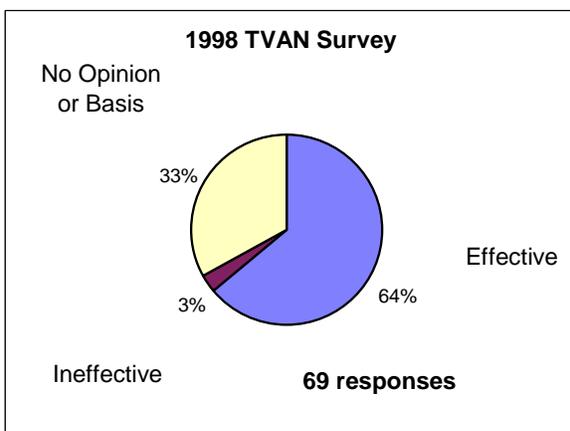
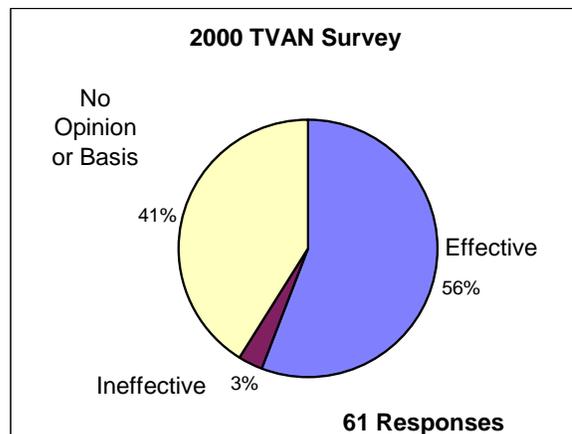
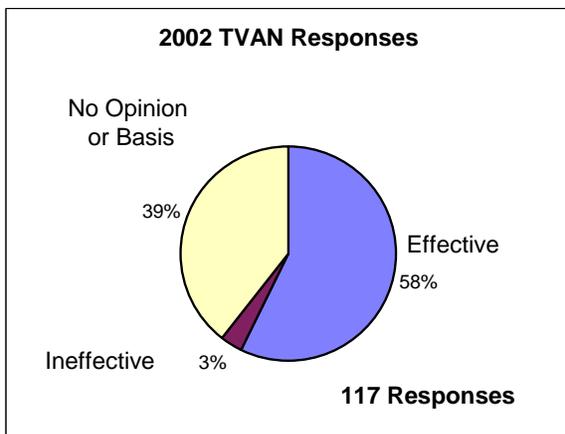
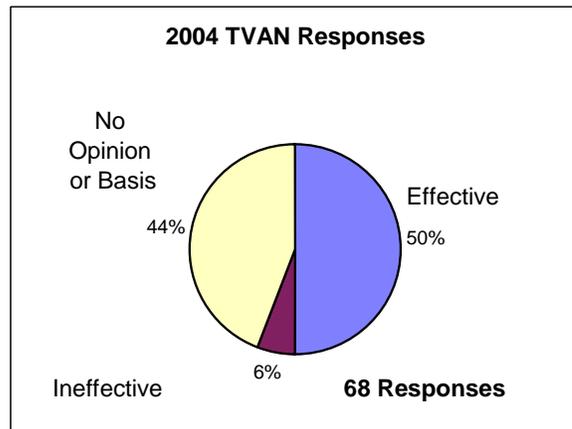
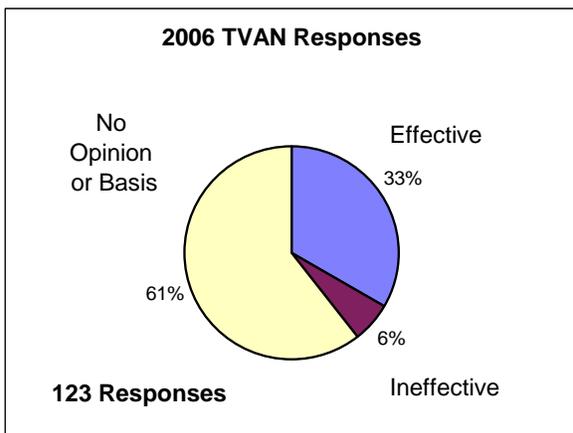


⁵ These questions were asked only to those who were aware of the CRS/ECP.

* Some interviewees gave a neutral response to the question. Those responses were not included in the graph.

**SUMMARY OF SURVEY RESPONSES
FROM TVA NUCLEAR CONTRACTOR EMPLOYEES**

17. Do you feel the CRS/ECP is effective?⁶



⁶ These questions were asked only to those who were aware of the CRS/ECP.

**SUMMARY OF SURVEY RESPONSES
FROM TVA NUCLEAR CONTRACTOR EMPLOYEES**

18. In your judgment, how well are problems being resolved at your site?

