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INFORMAL REPORT

AN ORGANIZATIONAL CULTURAL ASSESSMENT OF THE MORGANTOWN ENERGY TECHNOLOGY CENTER

by

Deborah A. Crouch and Sonja B. Haber

June 1991

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EXECUTIVE SUMMARY

An Organizational Cultural Assessment (OCA) was performed at the Morgantown Energy Technology Center (METC) by administering an Organizational Culture Survey (OCS) that queried employees on the subjects of organizational culture, various aspects of communications, employee commitment, work group cohesion, coordination of work, environmental, safety, and health concerns, hazardous nature of work, safety and overall job satisfaction. The purpose of the OCS is to measure in a quantitative and objective way the notion of "culture;" that is, the values, attitudes, and beliefs of the individuals working within the organization. In addition, through the OCS, a broad sample of individuals can be reached that would probably not be interviewed or observed during the course of a typical assessment. The OCA also provides a descriptive profile of the organization at one point in time that can then be compared to a profile taken at a different point in time to assess changes in the culture of the organization.

The OCS administration at METC was the sixth to occur at a Department of Energy (DOE) facility. It was the first OCS administration to survey both DOE and contractor employees due to the organizational structure of the facility. In the previous administrations, only contractor employees have been surveyed. Of the 530 employees working at METC, 475 completed the survey, yielding a response rate of 89.6 percent. Equivalent response rates were obtained from both DOE employees and EG&G contractor employees (80.3 percent and 80.8 percent, respectively). The discrepancy between the response rate obtained for each organization and the overall sample is due to a number of individuals who chose not to categorize themselves by organization. All data from the OCS is presented in group summaries, by organization, department within organization, supervisory level (both overall and within organization), and staff classification (both overall and within organization). Statistically significant differences between groups are identified and discussed.

The organizational profile which emerges from the results of the OCS METC sample is that of a passive-defensive cultural style, as indicated by high mean scores on the Approval (C3), Conventional (C4), and Dependent (C5) Scales. METC employees also perceive it to be important to strive for and succeed in reaching goals, as evidenced by high mean scores on the Perfectionistic (C10) and Achievement (C11) Scales. Behaviors which might be described as indicative of avoiding responsibility or as being oppositional in nature are not perceived to be important to success within the organization by METC employees.

Four aspects of the communication process were assessed in the OCA: Trust, Accuracy, Desire for Interaction, and General Satisfaction. The mean scores on these scales for the METC sample indicated a moderate belief in the accuracy of the information communicated and a desire for interaction within the organization. Trust and General Satisfaction with communication were lower.

While METC employees indicated cohesiveness within their working groups, they scored lower on overall commitment to the organization and on overall job satisfaction. In comparisons of the DOE and EG&G employees, the DOE sample had statistically significant higher mean values on both the Commitment and Job Satisfaction Scales.

The overall METC mean score for the Hazard Scale was low, indicating that employees do not perceive a high amount of hazard in their jobs. The mean scores for the questions dealing with

the potential for onsite and offsite environmental consequences were also low, suggesting that employees do not perceive that poor performance in their working group would result in environmental consequences. Despite this, overall attention to those variables important to safety was high, as were the perceived amount of emphasis management places on environmental, safety, and health issues and the amount of employee awareness on these same issues. No statistically significant differences on these scales were obtained between the DOE and EG&G samples. However, differences on these scales did exist between departments within the two organizations. Specifically, the DOE Office of Technical Management (OTM) was statistically significantly lower than both the Office of Applied Science and Technology (OAST) and the Office of Resource Management (ORM) on the Hazard Scale and on the question of potential for onsite environmental consequences. Within EG&G, the Environmental, Safety, and Health (ESH) Services Department was statistically significantly higher from every other EG&G Department on the questions dealing with the potential for onsite and offsite environmental consequences.

Analyses by staff classification across the METC sample and within each organization also revealed statistically significant differences on the scales/questions related to environmental, safety, and health concerns.

Differences between supervisor and non-supervisor groups were similar to those frequently reported in the literature. One noteworthy result is that supervisors appear to have a greater understanding of the variables believed to be related to safety than did non-supervisors.

In summary, there are distinct differences between the DOE and EG&G samples. Within each of the DOE and EG&G organizations, however, employees seem to be homogenous. The lower mean scores on the dimensions of trust and general satisfaction with communication in the organization is also worth noting, especially in combination with the overall predominately passive/defensive cultural style. These issues may contribute to the lack of perceived potential for hazard and environmental consequences by few groups in the organization outside of the ES&H Services Department in the EG&G Organization.

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ACRONYMS

Organization

DOE	Department of Energy
EGG	EG&G Washington Analytical Services Center, Inc. - METC
METC	Morgantown Energy Technology Center

DOE Departments

OAST	Office of Applied Science and Technology
ORM	Office of Resource Management
OTM	Office of Technical Management

EGG Departments

ESH	Environment, Safety, and Health Services
ENS	Engineering Services
HUR	Human Resources
PIC	Program Integration & Control
PRS	Project Support
TCS	Technical Services

Staff Classifications

ENR	Engineering Research
ESS	Engineering/Scientific Staff
O/C	Office/Clerical
LBR	Laboratory Research
ADM	Administration
PRM	Program Management
OTH	Other

Supervisory Levels

NSU	Non-Supervisory
ADS	Administrative Supervisor
SES	Scientific/Engineering Supervisor
SUP	Supervisor

ACRONYMS (Continued)

Survey Scales

C1	Humanistic-Encouraging
C2	Affiliative
C3	Approval
C4	Conventional
C5	Dependent
C6	Avoidance
C7	Oppositional
C8	Power
C9	Competition
C10	Perfectionistic
C11	Achievement
C12	Self-Actualizing

ACCURACY (CMA)	Perceived Accuracy of Communications
AWARENESS (EMA)	Employee Awareness of Workplace Hazards
COHESION (COH)	Cohesion of Work Group
COMMITMT (COT)	Organizational Commitment
COORD (COD)	Coordination
EMPHASIS (MGE)	Management Emphasis of Environmental Issues
HAZARD (HAZ)	Perceived Hazardous Nature of Work
INTERACT (CMI)	Desirability of Interaction with Others
JOBSAT (JOB)	Overall Job Satisfaction
OFFSITE (OFF)	Consequence to Offsite Environment
ONSITE (ONS)	Consequence to Onsite Environment
SAFETY (SAF)	Attention to Safety
SATISFAC (CMS)	Satisfaction with Communications
TRUST (CMT)	Trust in Communications

ACKNOWLEDGEMENT

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We also extend our appreciation to the efforts of our Brookhaven National Laboratory colleagues, Susan Monteleone, for her help in administering the survey, David Stock, for his statistical assistance and expertise, Sonja Santos, for her proficiency in graph production, and Kathleen Nasta and the "Emergency C&P Team" (Jeanne Danko, Susan Monteleone, and Donna Storan) for their help in preparing this manuscript. In addition, the review, comments, and insights provided by James Higgins were also very much appreciated.

1. INTRODUCTION

An Organizational Cultural Assessment (OCA) was performed at the Morgantown Energy Technology Center (METC) by administering an Organizational Culture Survey (OCS) that queried employees on the subjects of organizational culture, various aspects of communication, employee commitment to METC, work group cohesion, coordination of work, environmental concerns, hazardous nature of work, safety, and overall job satisfaction. A description of each of the scales used to assess these subjects is discussed below.

The primary purpose of administering the survey was to attempt to measure, in a more quantitative and objective way the notion of "organizational culture," that is, the values, attitudes, and beliefs of the individuals working within the organization. In particular, those aspects of the working environment which are believed to be important influences on the operations of a facility and on the safety issues relevant to the organization were assessed.

In addition, by conducting a survey, a broad sampling of the individuals in the organization can be obtained. This is especially important when the survey is utilized in conjunction with an assessment or inspection team which typically has only a limited amount of resources to address many issues. The OCS provides a broad, but more comprehensive picture of the organization by querying a much larger number of individuals than could be reached through the assessment team alone.

Finally, the OCS provides a descriptive profile of the organization at one point in time. This profile can then be used as a baseline point against which comparisons of other points in time can be made. Such comparisons may prove valuable and would help to assess changes in the organizational culture. Comparisons of the profiles can also be made across similar facilities.

2. METHODOLOGY

The Organizational Culture Survey (OCS) was administered to the employees of the Morgantown Energy Technology Center (METC) in large groups. The surveys were administered on April 29 and 30, 1991. Included with the survey was a cover letter explaining the purpose for the survey administration. Prior to the survey administration, a memorandum from the Director of METC was circulated. This memorandum encouraged employees to complete the survey and contained the times at which various groups of employees were to take the survey. A background sheet attached to the survey requested information pertaining to the organization and department in which the respondent was located, the number of years they had been working at METC, their staff classification, and supervisory and educational levels.

Two subject matter experts familiar with the survey were at METC during the survey administration in order to distribute the surveys and to answer any questions which employees may have had while taking the questionnaire. A total of 475 usable surveys were completed, for a response rate of 89.6 percent. The surveys were taken from METC for data entry and analysis.

Overall means, standard errors, and standard deviations were computed for each scale assessed in the OCS. A one-way analysis of variance was also performed on each OCS scale using the scale score as the dependent variable and separate analyses using department, staff classification, and supervisory level as the independent variables. In order to control the false positive rate (Type I error rate), the Bonferroni correction was applied to all the analyses of variance performed for each independent variable. Since there were 26 one-way analyses of variance for each independent variable, the significance level for each analysis of variance was reduced to .05/26 = .0019. Where the analysis of variance showed a significant difference among the group means at the .0019 level, a Tukey HSD (Honestly Significant Difference) (Hays, 1988) procedure was applied to identify those means that were statistically significantly different from each other. Consequently, the results that are reported to be significantly different from each other represent a vary conservative approach in the interpretation of the data analyses performed.

Included in this report are the overall results for METC on each of the scales used in the OCS. In addition, any statistically significant differences between organizations, departments within organizations, staff classifications and supervisory levels, both overall and within organizations are presented.

3. ORGANIZATIONAL DESCRIPTION

The Morgantown Energy Technology Center (METC) is unique from other U.S. Department of Energy (DOE) facilities which have taken the Organizational Culture Survey (OCS). A large number of DOE employees are involved in the primary work flow of the organization. The EG&G contractor employees perform mainly support functions (e.g., Project Support, Environmental, Safety and Health Services, Engineering Services). Within each organization, the organizational units are identified as departments. The demographics sheet used in the administration of the OCS included three departments for DOE, and six departments for EG&G. Unfortunately, the demographic sheet provided by the facility did not include the Directorate Department for DOE and the Group Director's Office and Part-Time Human Resources Departments for EG&G. Therefore, these groups could not be identified in any analyses. The two organizations, their departments and their abbreviations, as used in this report, are presented in Table 3.1. Also presented in this table are the response rates for each organization and department. The response rate is computed by dividing the number of surveys returned by the number of employees in that department.

Both the DOE and the EG&G Organizations had comparable response rates (80.3 percent and 80.8 percent, respectively). Within the departments of the two organizations, response rates varied from a low of 69.4 percent to a high of 131.1 percent for the DOE Departments and a low of 63.6 percent to a high of 125.4 percent for the EG&G Departments. The response rates greater than 100 percent are either due to individuals incorrectly classifying themselves into a department, or are due to incorrect total number of employees provided by the facility.

METC employees were also given seven staff classifications on the demographic sheet in which to categorize themselves. However, it appears that the staff classifications provided were specific to the DOE Organization and not directly applicable to the EG&G Organization. This hypothesis is further supported by the fact that the majority of EG&G employees classified themselves into the "Other" Staff Classification. Because of this discrepancy, EG&G also could not provide exact numbers for each of the seven staff classifications. As a result, in the overall response rates by staff classification, presented in Table 3.2, the Engineering Research, Engineering/Scientific Staff, and Laboratory Staff Classifications were combined into one group. Table 3.2 presents these staff classifications, and their abbreviations, as used in this report. Also presented in this table are the response rates for each staff classification.

The response rates for staff classifications broken down by the two organizations, DOE and EG&G are also presented in Table 3.2. For DOE, response rates for all seven staff classifications are presented. One notable point in this table is the response rate for the Program Management Staff Classification. A great many more respondents classified themselves into this staff classification than the DOE Organization reported should be in this classification.

The staff classifications of Engineering Research, Engineering/Scientific Staff, and Laboratory Research were combined for the EG&G Organization in order to compute response rate. Two noteworthy points in this table are the low response rates for both Administration and Program Management (both are below the fifty percent response rate needed to represent an accurate sample for that group of individuals).

Table 3.1. Response Rate by Organization and Departments for METC

Organization/Department	Number Responses	Number Employees	Response Rate
Department of Energy (DOE)	**233**	**290[2]**	**80.3**
Office of Technical Management (OTM)	85	113	75.2
Office of Resource Management (ORM)	80	61	131.1
Office of Applied Science and Technology (OAST)	76	108	70.4
Office of the Director (DIR)[1]	---	17	---
EG&G Washington Analytical Services Center, Inc. (EGG)	**194**	**240**	**80.8**
Engineering Services (ENS)	49	77	63.6
Environment, Safety and Health Services (ESH)	7	10	70.0
Group Director's Office[1]	---	3	---
Human Resources (HUR)	6	9	66.7
Part-Time Human Resources[1]	---	17	---
Program Integration and Control (PIC)	14	15	93.3
Project Support (PRS)	42	50	84.0
Technical Services (TCS)	74	59	125.4
Unknown	48	---	---
Total:	**475**	**530**	**89.6**

Notes:

[1] The following departments were not included on the background Information Sheet provided by METC: DOE Directorate, EG&G Group Director's Office, and EG&G Part-Time Human Resources. Therefore, response rates for these groups could not be computed.

[2] Number for DOE organization includes ORAUs, students, and part-timers.

Table 3.2. Response Rates by Staff Classification

Staff Classification	OVERALL METC			EG&G			DOE		
	Resps.	Empls.	Rate	Resps.	Empls.	Rate	Resps.	Empls.	Rate
Engineering Research (ENR)*							41	46	89.1
Engineering/Scientific Staff (ESS)*	186	236	78.8	55	63	87.3	40	87	46.0
Laboratory Research (LBR)*							30	40	75.0
Administration (ADM)	58	109	53.2	18	52	34.6	35	57	61.4
Office/Clerical (O/C)	71	88	80.7	38	58	65.5	27	30	90.0
Program Management (PRM)	58	37	156.8	9	27	33.3	44	10	440.0
Other (OTH)	82	73	112.3	65	73	89.0	11	0	---
Unknown	20	---	---	9	---	---	5	---	---

* For the purpose of computing response rates for staff classifications across METC and within the EG&G organization, Engineering Research, Engineering/Scientific Staff, and Laboratory Research are combined into one category as EG&G could not provide numbers broken down for each of these groups.

The OCS demographics questions used at METC also provided three categories of supervisory levels by which an employee could identify him/herself. As indicated in Table 3.3, a greater number of respondents classified themselves as supervisors, either Scientific/Engineering or Administrative, than were indicated by the numbers provided by METC. This may indicate that there are individuals at METC who perceive themselves to be fulfilling supervisory roles, who are not actually supervisors.

Table 3.3 also presents the response rates for supervisory levels broken down by organization. The discrepancy between the organization's reported numbers of supervisors' and respondents' self-identification as supervisors is also evident here. For both Scientific/Engineering and Administrative Supervisors in the DOE Organization, more respondents classified themselves as supervisors than the DOE Organization indicated exist. For the EG&G Organization, this discrepancy is limited to the Administrative Supervisor classification. While EG&G reported that they have no Administrative Supervisors, a total of 16 survey respondents indicated that they are Administrative Supervisors.

Table 3.4 presents information on the number of years the respondents have been at METC. The majority of survey respondents reported that they have been at METC for less than five years. Approximately 41 percent of the respondents reported that they have been at METC between six and fifteen years. Thirty-three individuals, or 6.9 percent of the respondents chose not to indicate the number of years they have been at METC.

Table 3.5 depicts the number of responses and the percent of the total sample by educational level for METC. The majority of respondents at METC indicate they have a college degree or higher educational level, and in fact, the largest percentage of the sample has a graduate degree (38.1 percent).

Table 3.6 presents the modal educational level and mean number of years at METC for the survey respondents, overall and in each department. Overall, the modal educational level was a Graduate Degree. In the DOE Departments, two of the three included on the demographics sheet had a modal educational level of Graduate Degree. The third DOE Department, ORM, had a modal educational level of College Degree. For EG&G, three of the six departments had a modal educational level of Graduate Degree and two had a modal educational level of Some College. The mean number of years at METC overall is 7.2. For the DOE Departments, the OAST Department had the longest tenure with 8.9 years. In the EG&G Departments, the longest mean number of years for a department is 7.5 years in Technical Services. The shortest number of years for any department in EG&G's organization is the Environmental, Safety, and Health Services Department, with an average of 3.4 years at METC. In general, respondents from the DOE Organization had a longer tenure at METC than respondents from the EG&G Organization.

Table 3.3. Response Rates by Supervisory Levels

	OVERALL METC			EG&G			DOE		
Supervisory Level	Resps.	Empls.	Rate	Resps.	Empls.	Rate	Resps.	Empls.	Rate
Scientific/Engineering Supervision (SES)	57	55	103.6	17	26	65.4	37	29	127.6
Administrative Supervision (ADS)	37	16	231.3	16	0	---	17	16	106.3
Non Supervisory (NOS)	364	466	78.1	156	241	64.7	171	225	76.0
Unknown	17	---	---	5	---	---	8	---	---

Table 3.4. Number of Years at METC

Years at METC	Number Responses	Percent of Total Sample
1-5	202	42.5
6-10	136	28.6
11-15	60	12.6
16-20	26	5.5
21-25	10	2.1
26-30	6	1.3
>30	3	0.6
Unknown	33	6.9

Table 3.5. Educational Level of METC Respondents

Educational Level	Number Responses	Percent of Total Sample
Some High School	2	0.4
High School Degree	39	8.2
Some Technical School	15	3.2
2-Year Technical Degree	17	3.6
Some College	67	14.1
College Degree	106	22.3
Some Graduate Work	33	56.9
Graduate Degree	181	38.1
Unknown	15	3.2

Table 3.6. Modal Educational Level and Mean Number of Years at METC Overall and for Each Department

Department	Educational Level[1]	Years at METC
Overall:	**8**	**7.2**
DOE	**8**	**8.6**
OTM	8	8.2
ORM	6	7.8
OAST	8	8.9
EG&G	**8**	**5.9**
Project Support	8	5.2
Engineering Services	8	4.7
Technical Services	6	7.5
ES&H Services	8	3.4
Human Resources	5	4.5
Program Integration & Control	5	5.2
Unknown	8	6.8

Note:

[1] For educational level: 5 = Some College, 6 = College Degree, 7 = Some Graduate School, 8 = Graduate Degree.

4. ORGANIZATIONAL CULTURE SURVEY SCALES AND RESULTS

The Organizational Culture Survey (OCS) administered at Morgantown Energy Technology Center (METC) was comprised of the Organizational Culture Inventory (OCI), consisting of 12 scales describing different organizational cultural styles, and scales assessing communication processes, commitment to the organization, cohesiveness of work group, coordination of work, overall job satisfaction, perceived hazardous nature of work, attention to safety, and questions concerning environmental, safety, and health issues. The results from each of these scales are discussed in the sections that follow. Each section presents the overall results for METC on that scale(s), the results by organization, by department within organization, by staff classification (both overall and within organization), and by supervisory level (both overall and within organization).

4.1 Organizational Culture Inventory

4.1.1 Description

The philosophy of management, the mission of the organization, and the strategic choices management makes determine the culture of the organization (Cooke and Burack, 1987). The aspect of culture most immediately affected by these factors is what is valued by the organization. The extent to which these values are recognized and shared reflects the strength of the organization's culture. Organizational factors, along with these shared values, influence the operating structures of the organization, it's human resource management practices, and the styles of its managers and supervisors. To the extent that these shared values and behavioral norms can be measured and evaluated, data collection of this type is important in understanding the organizational factors that influence performance.

The Organizational Culture Inventory (OCI) (Human Synergistics, 1987) is a paper-and-pencil diagnostic system for measuring the aspects of organizational culture that have the greatest impact on the activities of members and the functioning of the organization. Respondents are asked to review 120 statements which describe some of the thinking and behavioral styles that members of an organization may be expected to adopt in carrying out their work and in interacting with others. These statements measure 12 different cultural styles, some of which are indicative of a positive and supportive environment, while others are useful in identifying potentially dysfunctional environments. All of the styles measured by the OCI are related to, and result from, organizational structural variables, reward systems, managerial styles and philosophies, and other factors that can be changed, at least to some extent, by those in leadership positions.

The 12 organizational culture styles, with examples of the items used to assess each one, are described below.

C1: HUMANISTIC-ENCOURAGING: Organizations which are managed in a participative and person-centered way. Members are expected to be supportive, constructive, and open to influence in their dealings with one another.

- Involving subordinates in decisions;
- Showing concern for the needs of others;
- Giving positive rewards to others.

C2: AFFILIATIVE: Organizations which place high priority on constructive personal relations. The members are expected to be friendly, open, and sensitive to the satisfaction of their work group.

- Thinking in terms of the group satisfaction;
- Using good human relations skills;
- Motivating others with friendliness.

C3: APPROVAL: Organizations in which conflicts are avoided and personal relations are pleasant, at least superficially. Members feel they should agree with and gain approval of others.

- Staying on the good side of superiors;
- Making sure people accept you;
- Setting goals that please others.

C4: CONVENTIONAL: Organizations that are conservative, traditional, and bureaucratically controlled. Members are expected to conform, follow rules, and make a good impression.

- Always following policies and practices;
- Avoiding confrontations;
- Fitting into the "mold."

C5: DEPENDENT: Organizations that are hierarchically controlled and non-participative. Centralized decision-making leads members to do only what they are told and to clear all decisions with superiors.

- Accepting goals without questioning them;
- Never challenging superiors;
- Willingly obeying orders.

C6: AVOIDANCE: Organizations that do not reward success but punish failures. Negative rewards leads members to shift responsibility to others and avoid being blamed for mistakes.

- Taking few chances;
- Laying "low" when things get tough;
- Pushing decisions upward.

C7: OPPOSITIONAL: Organizations in which confrontation prevails and negativism is rewarded. Members gain status and influence by being critical and are encouraged to oppose the ideas of others.

- Pointing out flaws;
- Remaining aloof from the situation;
- Playing the role of the "loyal opposition".

C8: POWER: Non-participative organizations which are structured on the basis of authority in members' positions. Members expect to take charge, control subordinates, and respond to demands of superiors.

- Demanding loyalty;
- Acting forceful;
- Maintaining unquestioned authority.

C9: COMPETITION: Organizations where winning is valued and rewards are given for out-performing others. Members operate in a "win-lose" framework and work against their peers to be noticed.

- Always trying to be right;
- Out-performing one's peers;
- Turning the job into a contest.

C10: PERFECTIONISTIC: Organizations in which persistence, hard work, and perfectionism are highly valued. Members feel they must avoid all mistakes, keep track of everything, and work long hours to attain specific objectives.

- Setting unrealistically high goals;
- Viewing work as more important than anything else;
- Persisting, enduring.

C11: ACHIEVEMENT: Organizations that do things well and value members who set and accomplish their own goals. Members set challenging, but realistic goals, and plan and pursue them with enthusiasm.

- Exploring alternatives before acting;
- Pursuing a standard of excellence;
- Openly showing enthusiasm.

C12: SELF-ACTUALIZING: Organizations that value creativity, quality over quantity, tasks, and individual growth. Members are encouraged to gain satisfaction from their work, develop themselves, and take on new activities.

- Thinking in unique and independent ways;
- Communicating ideas;
- Being spontaneous.

From these twelve scales, three cultural styles are described. The first style is comprised of the Humanistic-Encouraging Scale (C1), the Affiliative Scale (C2), the Achievement Scale (C11), and the Self-Actualizing Scale (C12). These scales are considered "Constructive;" in other words, organizations which score high on these four scales tend to promote behaviors which are conducive to the satisfaction of the organizational members.

The second cultural style is the "Passive/Defensive Style." This style is made up of the Approval Scale (C3), the Conventional Scale (C4), the Dependent Scale (C5), and the Avoidance Scale (C6). In organizations which score high on these scales, a culture exists which leads employees of the organization to act and react in a defensive way and at the same time, act in a way which does not pose a threat to one's own security within that organization.

A third cultural style is made up of the Oppositional Scale (C7), the Power Scale (C8), the Competitive Scale (C9), and the Perfectionistic Scale (C10). Organizations which score high on these scales often expect members to act in a way that is both forceful and which protects one's position and status. In other words, members adopt an "Aggressive/Defensive Style" in order to be successful within the organization.

4.1.2 Overall Profile

The overall mean scores on the OCI scales for the entire sample of METC employees who responded to the Organizational Culture Survey (OCS) are depicted in Figure 4.1. The scales are identified by number and are described in the preceding section. The scores represent the mean score for the entire sample where the score 1 equals *not at all* and the score 5 equals *to a great extent.*

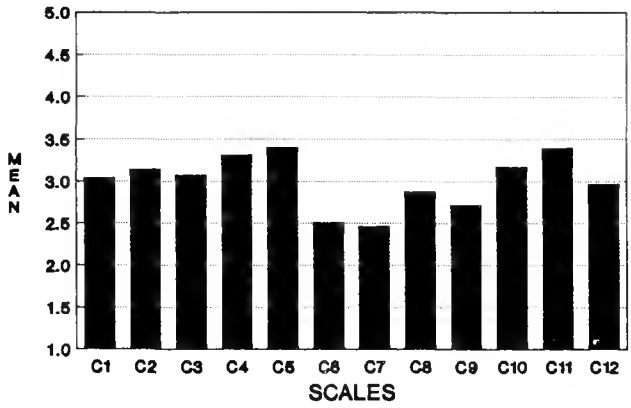

Figure 4.1. Overall mean values on OCI for METC

Based on the sample of METC employees who responded to the OCS, the organizational profile reflected on the OCI is best described by the passive/defensive cultural style. This style is comprised of the Approval (C3), Conventional (C4), Dependent (C5), and Avoidance (C6) Scales. The style for METC is best exemplified by the high mean scores on the Approval, Conventional and Dependent Scales. This indicates that respondents believe that the behaviors which are important to success in the organization are those which are defensive, and also passive (i.e., "Setting goals that please others," "Avoiding confrontations," "Never challenging superiors"). METC employees also exhibit some high scores on the "constructive" scales, especially on the Achievement (C11) Scale. Additionally, the mean score obtained on the Perfectionistic (C10) Scale indicates that employees believe persistence, hard work, and perfectionism are valued by the METC organization.

Figure 4.1a depicts the mean profiles for the overall METC Organization and for the DOE and EG&G Organizations. Statistically significant differences between the DOE and EG&G Organizations are discussed below.

4.1.3 Differences Between Organizations on the OCI

This section presents the statistically significant differences obtained between the DOE and EG&G Organizations in the METC sample. The mean scores for each organization on each scale are presented in Appendix A.

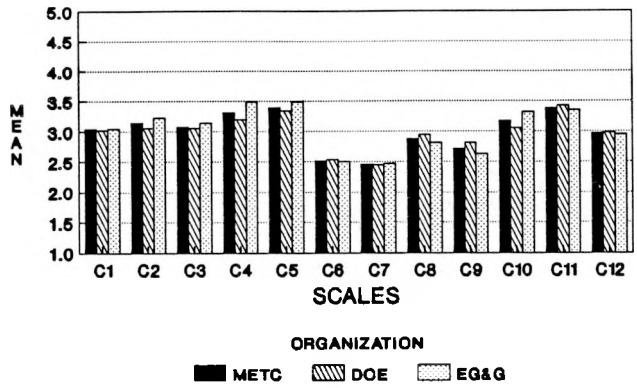

Figure 4.1a. Comparison of METC overall, DOE and EG&G on the OCI scales

As indicated in Figure 4.2, the mean score for the EG&G Organization is statistically significantly higher than the mean score for the DOE Organization on the Conventional Scale (C4). Thus, respondents in the EG&G Organization have a stronger belief that behaving in a more conventional manner will lead to success in the organization than do respondents in the DOE Organization.

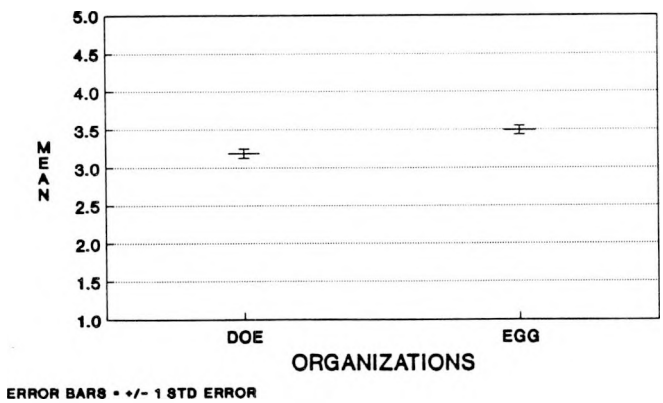

Figure 4.2. Significant differences between organizations on the conventional scale

Significant differences between organizations on the Perfectionistic Scale (C10) are shown in Figure 4.3. The DOE Organization has a statistically significantly lower mean score on the Perfectionistic Scale than the EG&G Organization, indicating that respondents in the EG&G Organization believe that Perfectionism is more important to their success in the METC Organization than do respondents from the DOE Organization.

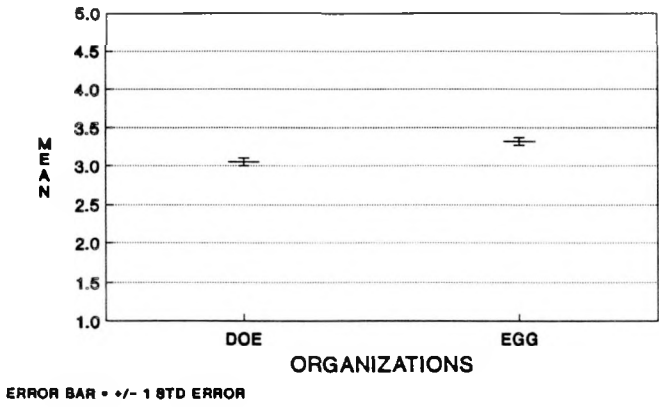

Figure 4.3. Significant differences between organizations on the perfectionistic scale

No other statistically significant differences between organizations were present on the OCI scales.

Appendix J contains figures which compare each organization to the overall mean value of the METC sample on each of the OCI scales. Appendix Q contains figures which compare the mean for each DOE Department to the Overall DOE Mean on each of the OCI scales. Appendix P contains figures which compare each EG&G mean to the overall mean value of the EG&G sample on each of the OCI scales.

4.1.4 Differences Between DOE Departments on the OCI

Statistically significant differences between DOE Departments were not obtained on any of the scales of the OCI. Appendix B presents the mean values for each DOE Department on each scale.

4.1.5 Differences Between EG&G Departments on the OCI

Statistically significant differences between EG&G Departments were not obtained on any of the OCI scales. Appendix C presents the mean values for each EG&G Department on each scale.

4.1.6 Differences Between Staff Classifications on the OCI

Since there are two separate organizations within the METC Organization, DOE and EG&G, staff classification analyses were conducted across the entire METC sample, and within each organization.

Over the entire METC sample, statistically significant differences between staff classifications were found on two of the OCI scales, Affiliative (C2) and Achievement (C11). The Laboratory Research Staff Classification had a statistically significantly lower mean score on the Affiliative (C2) Scale than the Engineering Research, Office/Clerical, and Other Staff Classifications (Figure 4.4). The Office/Clerical Staff Classification had the highest mean value of all the staff classifications on this scale.

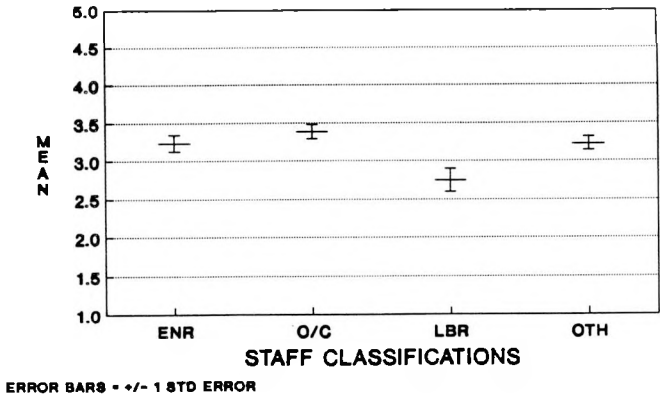

Figure 4.4. Significant differences between staff classifications on the affiliative scale

On the Achievement (C11) Scale, the Laboratory Research Staff Classification had the lowest mean value (Figure 4.5). They were statistically significantly different from the Engineering Research, Office/Clerical, Administration, and Program Management Staff Classifications. The Program Management Staff Classification had the highest mean value on this scale.

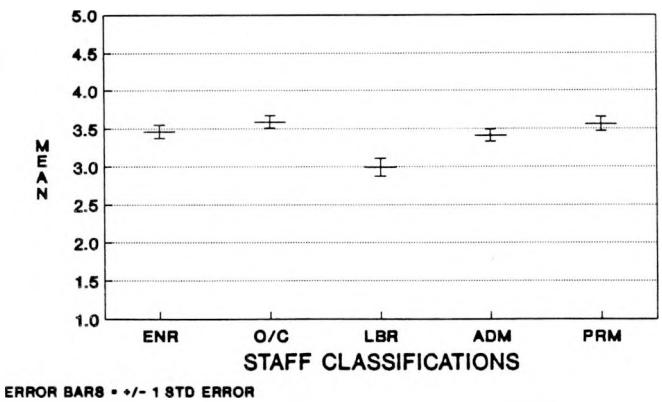

Figure 4.5. Significant differences between staff classifications on the achievement scale

Appendix D presents the mean values on all of the OCI scales obtained for each staff classification across the entire sample of METC respondents.

When staff classifications were analyzed within each organization, differences between staff classifications on the OCI scales were obtained only for the DOE Organization on the Humanistic-Encouraging (C1) Scale. No statistically significant differences between staff classifications were

obtained for the EG&G Organization on the OCI scales. As depicted in Figure 4.6, the Laboratory Research Staff Classification had the lowest mean value on the Humanistic-Encouraging (C1) Scale within the DOE Organization. They were statistically significantly different from the Office/Clerical and Program Administration Staff Classifications. The Office/Clerical Staff Classification had the highest mean value on this scale.

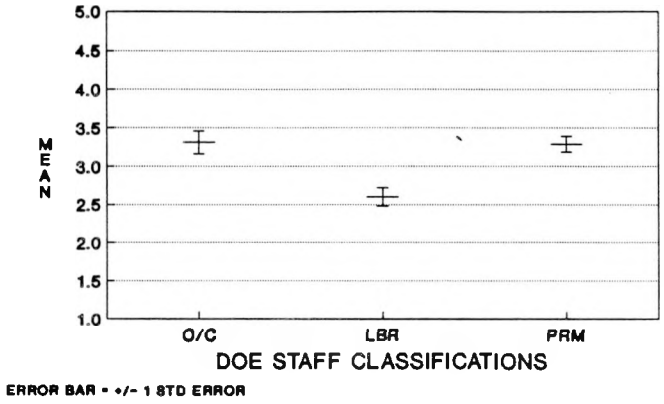

Figure 4.6. Significant differences between DOE staff classifications on the humanistic-encouraging scale

No other statistically significant differences between staff classifications were obtained on the OCI scales in the METC sample. Appendix E presents the mean values obtained for each staff classification within the DOE sample. Appendix F presents the mean values obtained for each staff classification within the EG&G sample.

4.1.7 Differences Between Supervisory Levels on the OCI

Significant differences between supervisory levels were assessed in two ways. The first way utilized the three supervisory levels listed on the demographics sheet: Non-Supervisors, Administrative Supervisors, and Scientific/Engineering Supervisors. The second way involved analyses of all supervisors versus non-supervisors. Supervisors were defined as those individuals who selected either Administrative Supervisors or Scientific/Engineering Supervisors on the background information sheet, and Non-Supervisors are those who classified themselves as such. In addition, analyses were conducted which compared the three levels of supervisors in the two organizations: DOE and EG&G.

No statistically significant differences between the three supervisory levels were found for the overall METC organization on any of the OCI scales. Appendix G presents the mean values for each of the three supervisory levels on the scales used in the OCA.

When the two supervisory levels were combined into one group and compared to the Non-Supervisors statistically significant differences were found on two of the OCI scales, Humanistic-Encouraging (C1) and Achievement (C11). On the Humanistic-Encouraging Scale, Supervisors had a

statistically significantly higher mean score than Non-Supervisors (Figure 4.7). On the Achievement Scale, Supervisors again had a statistically significantly higher mean score than Non-Supervisors (Figure 4.8). Neither of these differences are unexpected between supervisory levels.

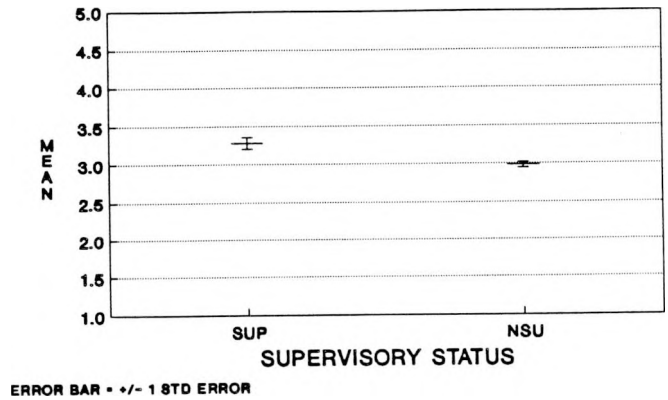

Figure 4.7. Significant differences between supervisors and non-supervisors on the humanistic-encouraging scale

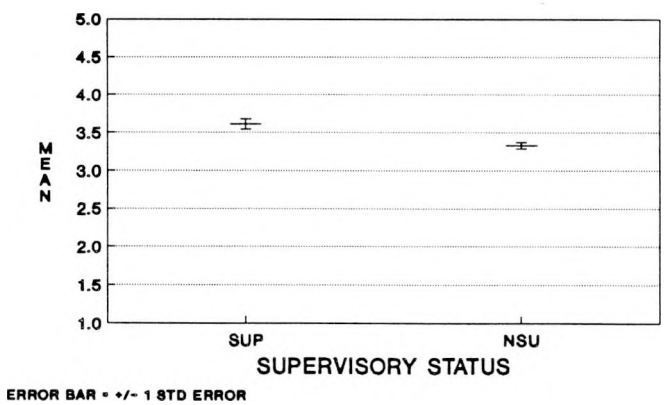

Figure 4.8. Significant differences between supervisors and non-supervisors on the achievement scale

Appendix G presents the mean values on all scales for both Supervisors and Non-Supervisors.

No statistically significant differences between the three levels of supervisors were found when supervisory levels were compared within the DOE Organization or within the EG&G Organization. Appendices H and I present the mean values on each scale for supervisory levels within these two organizations.

4.2 Communication Scales

4.2.1 Description

Communication is a critical process for effective operations in any organization. However, because it is a process rather than a variable, it is very difficult to measure. The scales used in the questionnaire administered at METC were developed by Roberts and O'Reilly (1974). They have been administered to various organizations with good reliability and success in analyzing several facets of the communication process.

Four communication scales were administered and are described below. The range on each scale is from a low score of 1 to a high score of 7.

TRUST: Freedom to discuss the problems and difficulties in the job with an immediate supervisor without jeopardy.

ACCURACY: Perception of the accuracy of information received from other organizational levels (superior, same, and subordinate levels).

INTERACT: Desirability of frequent contact with others in the organization (superiors, same, and subordinate).

SATISFAC: Overall satisfaction with the communication process in the organization.

4.2.2 Overall METC Results

The overall means for METC on each of the communication scales described above are presented in Figure 4.9. For the Trust in Communication and Overall Satisfaction with Communication Scales, moderate mean values were obtained for the METC sample. The mean value on the Perceived Accuracy of Communication Scale was slightly higher. Employees also desire a moderately high amount of interaction with others in the organization, as evidenced by the mean score on the Desire for Interaction Communication Scale.

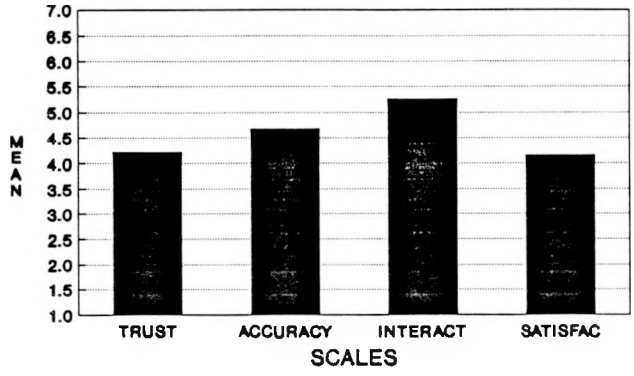

Figure 4.9. Overall mean values on communication scales for METC

Figure 4.9a compares the overall mean scores for the entire METC sample to the mean scores for the DOE and the EG&G Organizations on the communication scales. Statistically significant differences between these organizations are discussed below.

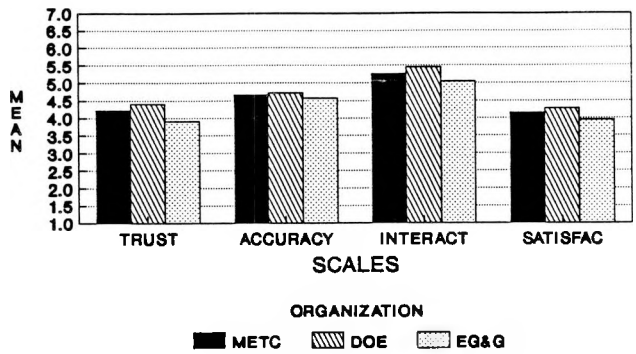

Figure 4.9a. Comparison of METC overall, DOE, and EG&G on the communication scales

4.2.3 Differences Between Organizations on the Communication Scales

Statistically significant differences between organizations occurred on two of the communication scales. The interested reader is referred to Appendix A for the mean values for each organization on each of the communication scales. In addition, Appendix K contains figures which compare each organization to the overall mean value of the METC sample on each of the communication scales.

Figure 4.10 depicts the statistically significant differences between the DOE and EG&G Organizations at METC on the Communication - Trust Scale. The DOE Organization has the higher mean value on this scale and is significantly different from the EG&G Organization. The EG&G Organization has a mean value on this scale which is below the midpoint of the scale range, suggesting that the respondents from EG&G have below average trust in the communications which occur at METC.

Statistically significant differences between the DOE and EG&G Organizations at METC also occur on the Communication - Interaction Scale (Figure 4.11). The pattern is similar to the difference found in the Communication - Trust Scale, with the DOE Organization having a statistically significantly higher mean value on this scale than the EG&G Organization.

Comparisons of each DOE Department to the overall mean for DOE on each communication scale are depicted in Appendix Q. Appendix R compares the mean for each EG&G Department to the overall EG&G mean on each communication scale.

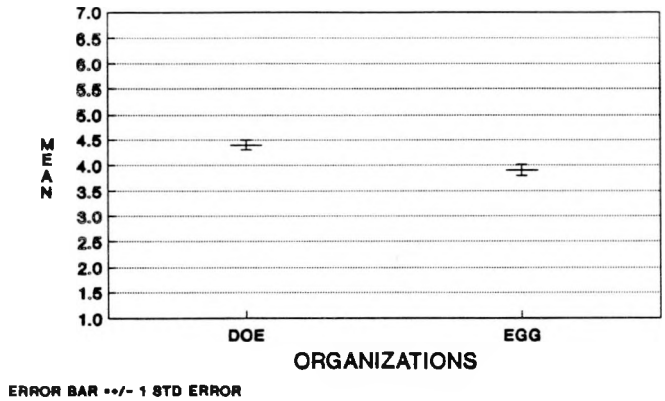

Figure 4.10. Significant differences between organizations on the communication-trust scale

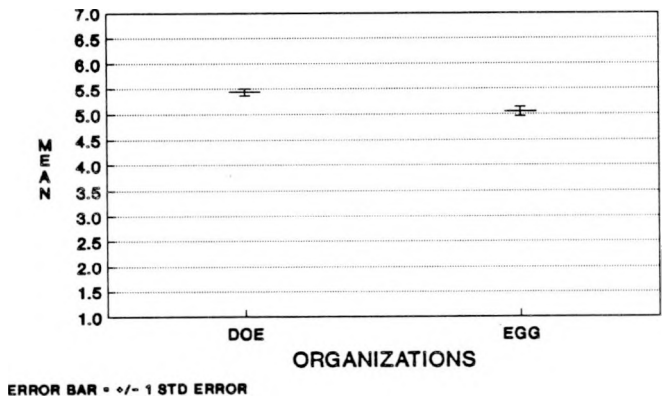

Figure 4.11. Significant differences between organizations on the communication-interaction scale

4.2.4 Differences Between DOE Departments on the Communication Scales

No statistically significant differences between DOE Departments on the communication scales occurred in the METC sample. Appendix B presents the mean values for each DOE Department on each of the communication scales.

4.2.5 Differences Between EG&G Departments on the Communication Scales

No statistically significant differences between EG&G Departments on the communication scales occurred in the METC sample. Appendix C presents the mean values for each EG&G Department on each of the communication scales.

4.2.6 Differences Between Staff Classifications on the Communication Scales

Statistically significant differences between staff classifications were assessed for the overall METC sample, as well as within each organization, DOE and EG&G. Statistically significant differences between staff classifications for the overall METC sample were obtained on one of the communication scales, Communication - Trust (Figure 4.12). The Other Staff Classification had a statistically significantly lower mean value on this scale than both the Program Management and the Engineering Research Staff Classifications. The Program Management Staff Classification had the highest mean value on this scale. Appendix D presents the mean values on each scale for the staff classifications at METC.

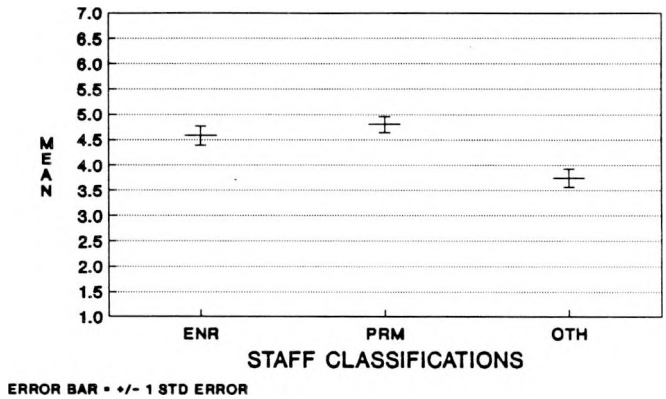

Figure 4.12. Significant differences between staff classifications on the communication-trust scale

No statistically significant differences between staff classifications were found for either the DOE Organization or the EG&G Organization on any of the communication scales. Appendices E and F present the mean values for each staff classification within each organization on the communication scales.

4.2.7 Differences Between Supervisory Levels on the Communication Scales

It will be recalled that supervisory level was analyzed in two different ways. The first involved utilizing those categories included on the demographics sheet for Non-Supervisors, Scientific/Engineering Supervisors, and Administrative Supervisors. The second analysis consisted of combining Scientific/Engineering with Administrative Supervisors into one group called Supervisors and comparing this group to the Non-Supervisors. In addition, the three supervisory levels were analyzed within each organization at METC, DOE and EG&G.

Statistically significant differences between supervisory levels for the overall METC sample were obtained on one of the communication scales. Figure 4.13 depicts the statistically significant differences between the three supervisory levels on the Communication - Interaction Scale for the overall METC

sample. The Scientific/Engineering Supervisors had the highest mean value on this scale and, along with the Administrative Supervisors, were statistically significantly different from the Non-Supervisors.

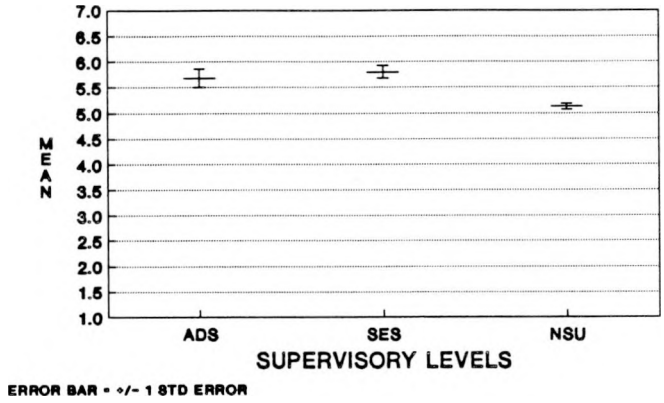

Figure 4.13. Significant differences between supervisory levels on the communication-interaction scale

When the two groups of supervisors were combined into one group and compared to non-supervisors, statistically significant differences were also obtained on the Communication-Interaction Scale. Supervisors had a statistically significantly higher mean value on this scale than did the Non-Supervisors (Figure 4.14).

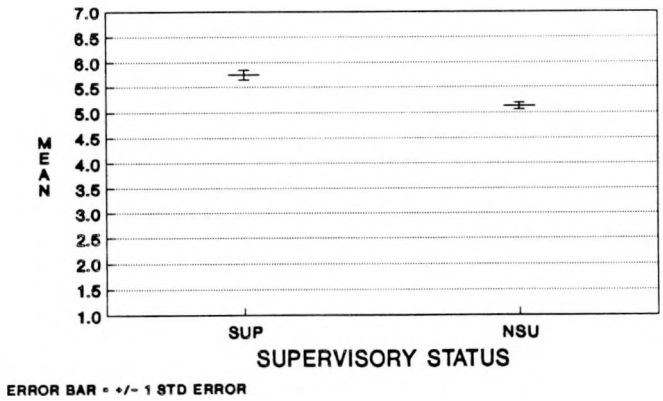

Figure 4.14. Significant differences between supervisors and non-supervisors on communication-interaction scale

As discussed above, supervisory levels were also analyzed within each organization at METC. No statistically significant differences between supervisory levels occurred within the EG&G organization on the communication scales. Figure 4.15 depicts the statistically significant differences between supervisory levels on the Communication-Interaction Scale for the DOE Organization. The Administrative Supervisors had the highest mean value on this scale, and along with the Scientific/Engineering Supervisors, were statistically significantly different from the Non-Supervisors.

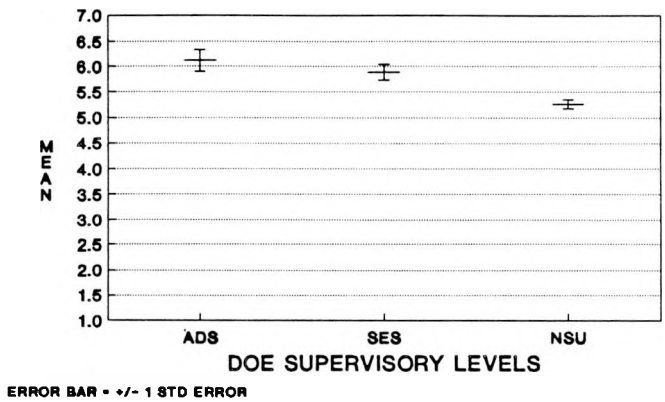

Figure 4.15. Significant differences between DOE supervisory levels on the communication-interaction scale

No other statistically significant differences between supervisory levels within the DOE Organization were obtained on the communication scales.

4.3 Commitment Scale

4.3.1 Scale Description

The Commitment Scale is defined as the relative strength of an individual's identification with and involvement in a particular organization (Mowday & Steers, 1979). This commitment extends to the goals of the organization and the desire to maintain membership in the organization to facilitate these goals. The range on this scale is from a low score of 1 (low commitment) to a high score of 7 (high commitment).

4.3.2 Overall METC Results

The mean score for the METC sample on the Commitment Scale was 3.87, as shown in Figure 4.16. This mean is below the midpoint of the Commitment Scale. Thus, it appears that METC employees who completed the survey have low to moderate commitment to the METC organization. Mean scores for additional scales are also shown in this figure and will be discussed later.

The mean values on the Commitment Scale for the overall METC sample and for the DOE and EG&G organizations within METC are presented in Figure 4.16a. Statistically significant differences between organizations on this scale are discussed below.

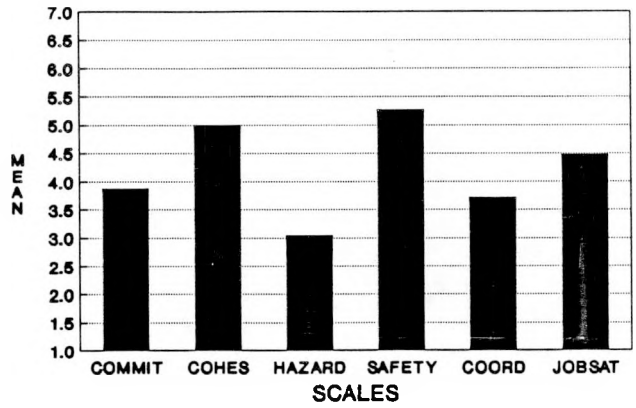

Figure 4.16. Overall mean values on additional scales for METC

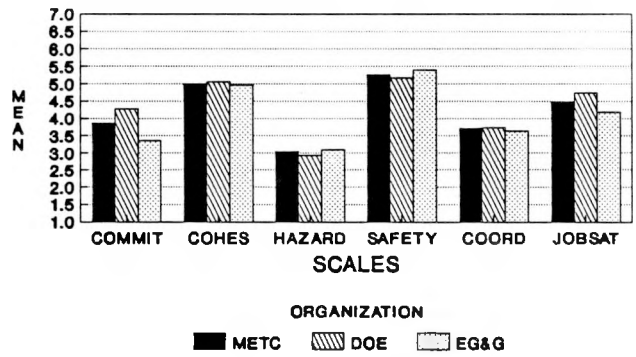

Figure 4.16a. Comparison of METC overall, DOE, and EG&G on the additional scales

4.3.3 Differences Between Organizations on the Commitment Scale

The two organizations at METC, DOE and EG&G, were not statistically significantly different from each other on the Commitment Scale. Appendix A presents the mean values for each organization on the Commitment Scale.

Appendix L contains figures which compare each organization to the overall mean value of the METC sample for each of the scales presented in Figure 4.16. Figures comparing the overall DOE mean for each scale presented in Figure 4.16 to each DOE department are contained in Appendix S.

Appendix T compares the mean for each EG&G department to the overall EG&G mean on each of these scales.

4.3.4 Differences Between DOE Departments on the Commitment Scale

No statistically significant differences between DOE Departments were obtained on the Commitment scale. Appendix B presents the mean values for each of the DOE Departments on the Commitment Scale.

4.3.5 Differences Between EG&G Departments on the Commitment Scale

No statistically significant differences between EG&G Departments were obtained on the Commitment scale. Appendix C presents the mean values for each of the EG&G Departments on the Commitment Scale.

4.3.6 Differences Between Staff Classifications on the Commitment Scale

When staff classifications were compared, regardless of organizational affiliation, statistically significant differences between classifications were found on the Commitment Scale (Figure 4.17). Both the Engineering Research and Program Management Staff Classifications had the highest mean values on the Commitment Scale, and were statistically significantly different from the Engineering/Scientific Staff, Laboratory Research, and Other Staff Classifications. The Other Staff Classification had the lowest mean value on this scale. Other statistically significant differences between staff classifications, as well as the mean value for each staff classification on the Commitment Scale, are presented in Appendix D.

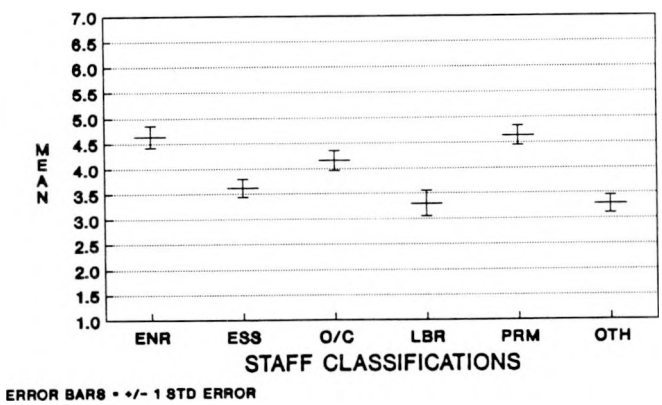

Figure 4.17. Significant differences between staff classifications on the commitment scale

When staff classifications within each organization were compared on the Commitment Scale, statistically significant differences were found between staff classification in the DOE Organization, but not in the EG&G Organization. Figure 4.18 indicates that the Laboratory Research Staff Classification had the lowest mean value on this scale, and along with the Other Staff Classification, was statistically

significantly different from the Office/Clerical, Engineering Research, and Program Management Staff Classifications. The Office/Clerical Staff Classification had the highest mean value on this scale.

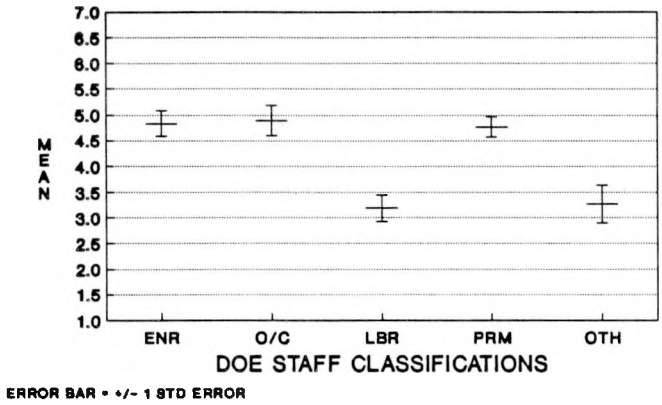

Figure 4.18. Significant differences between DOE staff classifications on the commitment scale

4.3.7 Differences Between Supervisory Levels on the Commitment Scale

Regardless of the way in which supervisory levels were analyzed, no statistically significant differences between any levels were obtained on the Commitment Scale. Appendices G through I contain the mean values for the supervisory levels on the Commitment Scale.

4.4 Cohesion Scale

4.4.1 Scale Description

The Cohesion Scale is very similar to the Commitment Scale except that it is defined as the relative strength of an individual's identification and involvement in a particular work group (Seashore, 1954; Price & Muller, 1972). The range on this scale is from a low score of 1 (weak cohesiveness) to a high score of 7 (strong cohesiveness).

4.4.2 Overall METC Results

The overall mean score for the METC sample on the Cohesion Scale was 5.00 (Figure 4.16), higher than the mean score for the same sample on the Commitment Scale. In general, employees of METC who responded to the survey identify to a moderately high extent with their own work groups. Thus, it appears that employees of METC identify to a greater extent with their own working groups, than with the organization as a whole.

Figure 4.16a compares the mean values for METC overall, DOE, and EG&G organizations on the Cohesion scale. As discussed below, no substantial differences were obtained between these groups.

4.4.3 Differences Between Organizations on the Cohesion Scale

No statistically significant differences between the DOE and EG&G Organizations were obtained on the Cohesion Scale.

4.4.4 Differences Between DOE Departments on the Cohesion Scale

No statistically significant differences between departments within the DOE Organization were obtained on the Cohesion Scale.

4.4.5 Differences Between EG&G Departments on the Cohesion Scale

No statistically significant differences between departments within the EG&G Organization were obtained on the Cohesion Scale.

4.4.6 Differences Between Staff Classifications on the Cohesion Scale

No statistically significant differences between staff classifications were obtained on the Cohesion Scale, regardless of whether the analyses were conducted across the entire METC sample, or within one of the organizations at METC.

4.4.7 Differences Between Supervisory Levels on the Cohesion Scale

No statistically significant differences between supervisory levels were obtained on the Cohesion Scale, regardless of the way in which the supervisory levels were defined or whether the analyses were conducted within one of the organizations at METC.

4.5 Coordination Scale

4.5.1 Scale Description

The Coordination Scale assesses the employee's perception of the degree to which the subunits of an organization operate according to the requirements of each other and of the total organization (Georgopoulos & Mann, 1962). The range on this scale is from a low score of 1 (low coordination) to a high score of 7 (high coordination).

4.5.2 Overall METC Results

The overall mean score on this scale for the METC sample was 3.71 (see Figure 4.16). This indicates that METC personnel perceive a moderate amount of coordination to exist between the work activities in their organization.

Figure 4.16a depicts the overall mean scores for METC, DOE, and EG&G Organizations. As discussed below, no statistically significant differences exist between these groups.

4.5.3 Differences Between Organizations on the Coordination Scale

No statistically significant differences between organizations were obtained on the Coordination Scale for the METC sample.

4.5.4 Differences Between DOE Departments on the Coordination Scale

No statistically significant differences were obtained between departments within the DOE Organization on the Coordination Scale.

4.5.5 Differences Between EG&G Departments on the Coordination Scale

No statistically significant differences between departments within the EG&G Organization were obtained on the Coordination Scale.

4.5.6 Differences Between Staff Classifications on the Coordination Scale

No statistically significant differences between staff classifications for the overall METC sample were obtained on the Coordination Scale.

When staff classifications were examined within the DOE Organization, a statistically significant difference was found (Figure 4.19). The Program Management Staff Classification perceives there to be statistically significantly more coordination among work activities than does the Other Staff Classification.

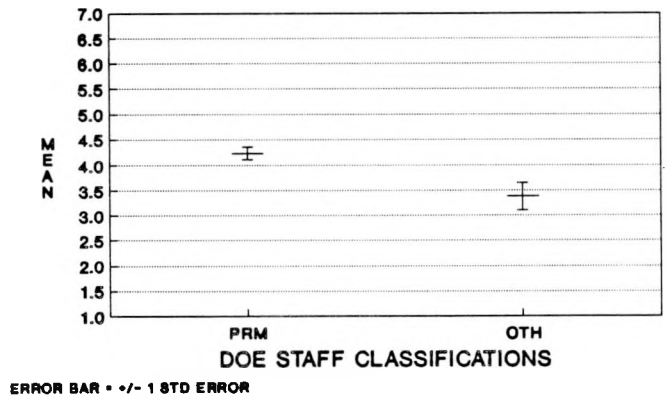

Figure 4.19. Significant differences between DOE staff classifications on the coordination scale

No statistically significant differences between staff classification within the EG&G Organization were obtained on the Coordination Scale.

4.5.7 Differences Between Supervisory Levels on the Coordination Scale

No statistically significant differences between supervisory levels were obtained on the Coordination Scale regardless of the way in which supervisory levels were analyzed, and whether the analyses were over the entire METC sample or within the DOE or EG&G Organizations.

4.6 Job Satisfaction

4.6.1 Description of Scale

The Job Satisfaction Scale (Kunin, 1955) refers to employees' overall satisfaction with their jobs. While it is not able to point to specific aspects of the working environment which people are satisfied or dissatisfied with, it can help to determine if employee satisfaction is something which needs further consideration by management. The scale ranges from a low score of 1 (very dissatisfied) to a high score of 7 (very satisfied).

4.6.2 Overall METC Results

Overall, METC employees were moderately satisfied with their jobs. The mean value for the METC sample on this scale was 4.48 (see Figure 4.16).

The mean values for METC overall, DOE, and EG&G on the job satisfaction scale are presented in Figure 4.16a. Statistically significant differences between the DOE and EG&G Organizations are discussed below.

4.6.3 Differences Between Organizations on the Job Satisfaction Scale

Survey respondents from the DOE Organization were statistically significantly more satisfied with their jobs than were survey respondents from the EG&G Organization (Figure 4.20).

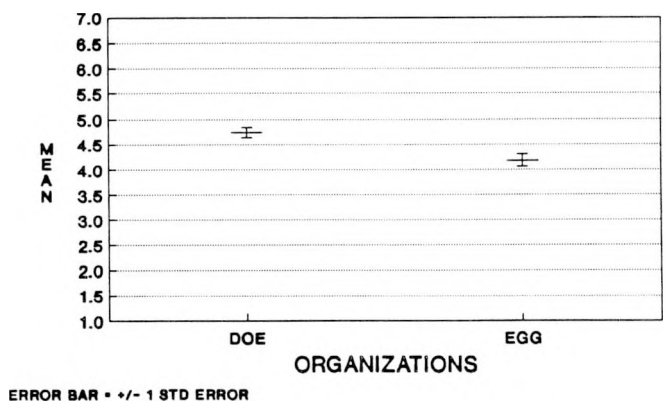

Figure 4.20. Significant differences between organizations on the job satisfaction scale

4.6.4 Differences Between DOE Departments on the Job Satisfaction Scale

No statistically significant differences on the Job Satisfaction Scale were obtained between DOE Departments in the METC sample.

4.6.5 Differences Between EG&G Departments on the Job Satisfaction Scale

No statistically significant differences between EG&G Departments on the Job Satisfaction scale were obtained.

4.6.6 Differences Between Staff Classifications on the Job Satisfaction Scale

Whether staff classifications were analyzed over the entire METC sample or within each organization, no statistically significant differences were obtained on the Job Satisfaction Scale.

4.6.7 Differences Between Supervisory Levels on the Job Satisfaction Scale

No statistically significant differences between supervisory levels were obtained on the Job Satisfaction Scale.

4.7 Hazard Scale

4.7.1 Scale Description

The Hazard Scale is used to identify people's perception of the hazardous nature of their work (K.H. Roberts, 1990, personal communication). The scale ranges from a low score of 1 (not hazardous) to a high score of 7 (very hazardous).

4.7.2 Overall METC Results

The overall METC mean score on this scale was 3.04 (see Figure 4.16). Thus, METC employees do not perceive there to be a great amount of hazard in their work.

Comparisons of METC overall, DOE, and EG&G organizations on the Hazard Scale are presented in Figure 4.16a. The statistical comparison of the DOE and EG&G organizations on this scale is presented below.

4.7.3 Differences Between Organizations on the Hazard Scale

No statistically significant differences between organizations on the Hazard Scale were found in the METC sample.

4.7.4 Differences Between DOE Departments on the Hazard Scale

Statistically significant differences between DOE Departments on the Hazard Scale are depicted in Figure 4.21. The OTM Department had the lowest mean value on this scale and was statistically significantly different from both the OAST and ORM Departments. The OAST Department had the highest mean value on this scale.

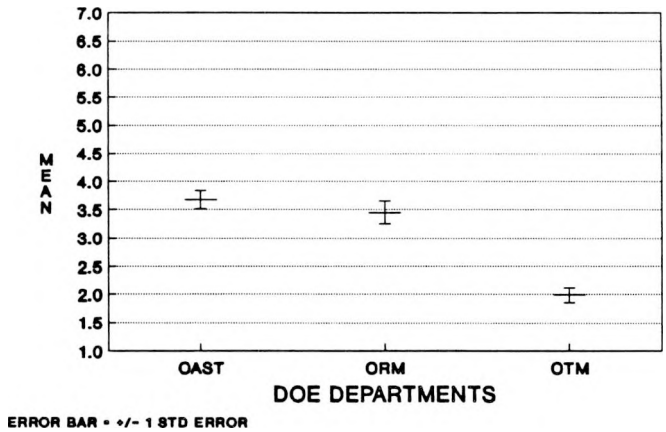

Figure 4.21. Significant differences between DOE departments on the hazard scale

4.7.5 Differences Between EG&G Departments on the Hazard Scale

No statistically significant differences between EG&G Departments were obtained on the Hazard Scale, despite the fact that in some instances, the mean scores between departments exceeded two points (see Appendix C). The lack of statistically significant differences between these departments is due to the variability in responses within each department on this scale.

4.7.6 Differences Between Staff Classifications on the Hazard Scale

Statistically significant differences between staff classifications across the entire METC sample are depicted in Figure 4.22. The Laboratory Research Staff Classification had the highest mean value on this scale, and was statistically significantly different from the Engineering/Scientific Staff, Administration, Office/Clerical, and Program Management Staff Classifications. The Program Management Staff Classification had the lowest mean value on this scale. Other statistically significant differences between staff classifications on the Hazard Scale for the entire METC sample are presented in Appendix D.

When staff classifications within the DOE Organization were compared on the Hazard Scale, statistically significant differences were obtained (Figure 4.23). The Laboratory Research Staff Classification had the highest mean value on this scale and was statistically significantly different from the Office/Clerical, Administration, and Program Management Staff Classifications. The Program Management Staff Classification had the lowest mean value on this scale. Other statistically significant differences on the Hazard Scale between staff classifications in the DOE Organization are presented in Appendix E.

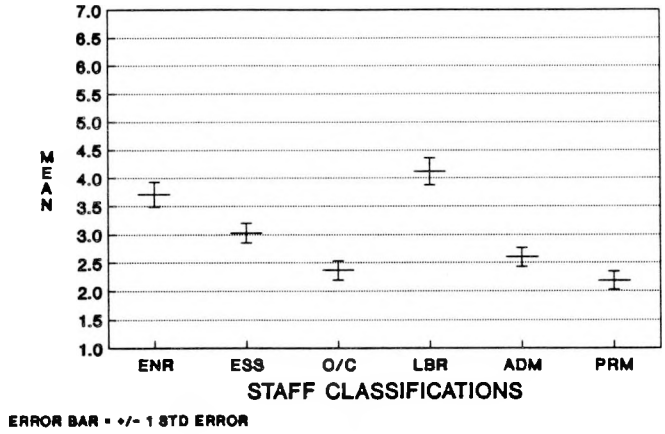

Figure 4.22. Significant differences between staff classifications on the hazard scale

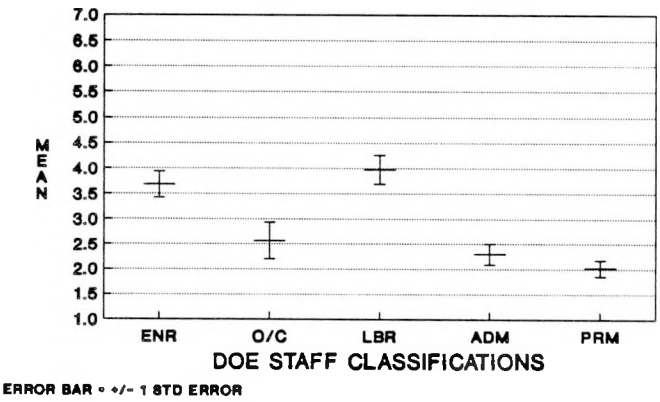

Figure 4.23. Significant differences between DOE staff classifications on the hazard scale

Statistically significant differences between staff classifications on the Hazard Scale within the EG&G Organization are presented in Figure 4.24. The Laboratory Research Staff Classification once again had the highest mean value on this scale and was statistically significantly different from the Office/Clerical, Administration, and Program/Management Staff Classifications. The Office/Clerical Staff Classification had the lowest mean value on this scale within the EG&G Organization.

4.7.7 Differences Between Supervisory Levels on the Hazard Scale

No statistically significant differences between supervisory levels on the Hazard Scale were obtained regardless of the way in which supervisory level was analyzed. Additionally, no statistically significant differences were found between supervisory levels within either the DOE or the EG&G Organizations.

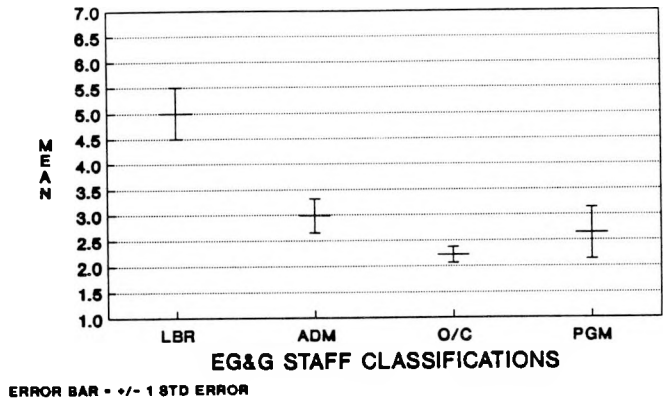

Figure 4.24. Significant differences between EG&G staff classifications on the hazard scale

4.8 Safety Scale

4.8.1 Scale Description

The Safety Scale, developed by researchers at the University of California at Berkeley (K. H. Roberts, 1989, personal communication), is used to assess an individual's perception of the importance of safety to success in an organization. Safety is defined as operating in a manner to ensure that the probability of making a mistake is low, because the consequences of making a mistake are high. Organizations typically viewed as operating in this manner are nuclear reactors, naval aircraft carriers and air traffic control centers. The safety scale consists of 40 items which range from a low score of 1 (does not help at all) to a high score of 7 (helps a great deal).

4.8.2 Overall METC Results

The overall mean score for the METC sample on the Safety Scale was 5.27 (see Figure 4.16). Thus, it appears that the employees of METC do understand those behaviors which are important to safe operations.

Figure 4.16a depicts the mean scores for the overall METC sample and for the DOE and EG&G Organizations on the Safety Scale. The statistical comparison of the DOE and EG&G Organizations on the Safety Scale is presented below.

4.8.3 Differences Between Organizations on the Safety Scale

No statistically significant differences between organizations at METC were obtained on the Safety Scale.

4.8.4 Differences Between DOE Departments on the Safety Scale

No statistically significant differences between DOE Departments on the Safety Scale were obtained at METC.

4.8.5 Differences Between EG&G Departments on the Safety Scale

No statistically significant differences between EG&G Departments on the Safety Scale were obtained at METC.

4.8.6 Differences Between Staff Classifications on the Safety Scale

Regardless of the way in which staff classifications were analyzed, no statistically significant differences were obtained on the Safety Scale.

4.8.7 Differences Between Supervisory Levels on the Safety Scale

Despite the fact that no statistically significant differences were obtained between supervisory levels on the Safety Scale for METC overall, statistically significant differences between supervisory levels were obtained when the two supervisory levels were combined into one group and compared to the Non-Supervisors.

Figure 4.25 depicts the results that METC Supervisors have statistically significantly higher mean values on the Safety Scale than do Non-Supervisors.

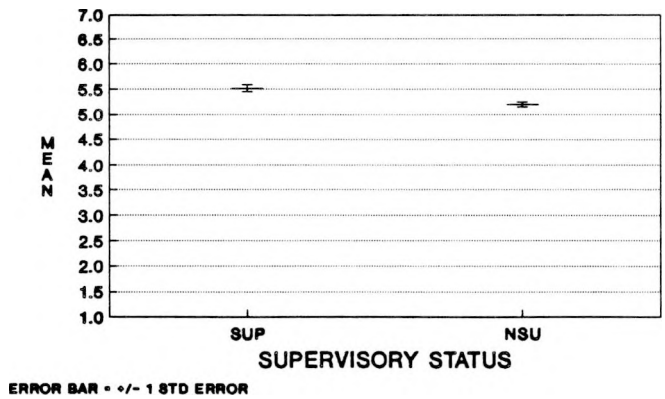

Figure 4.25. Significant differences between supervisors and non-supervisors on the safety scale

When the three types of supervisory levels are compared within the DOE Organization, a statistically significant difference is found (Figure 4.26). DOE Non-Supervisors have statistically significantly lower mean values on the Safety Scale than both the Administrative and the Scientific/Engineering Supervisors. The Administrative Supervisors have the highest mean value on this scale.

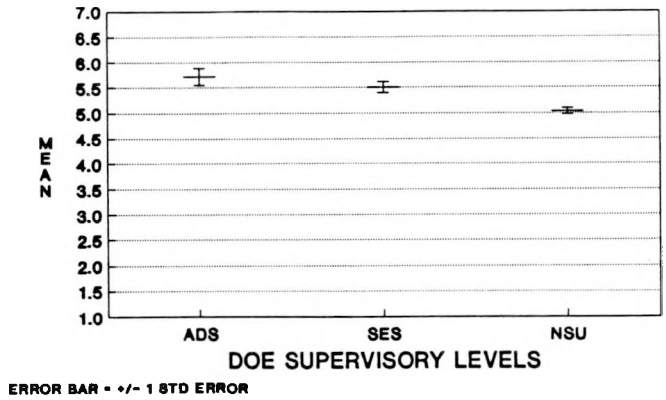

Figure 4.26. Significant differences between DOE supervisory levels on the safety scale

4.9 Environmental, Safety, and Health Questions

4.9.1 Question Descriptions

The administration of the Organizational Culture Survey (OCS) at METC included four questions pertaining to environmental, safety and health issues. Each question ranges from a low score of 1 (not at all or little) to a high score of 7 (very likely or a lot).

The first environmental, safety and health question deals with the likelihood of serious offsite environmental damages/consequences due to improper or substandard performance by a work group. The second question deals with the likelihood of serious onsite environmental damages/consequences due to improper or substandard performance by a work group. The third environmental, safety, and health question asks employees to assess the amount of emphasis they believe management places on environmental issues. Finally, the fourth question asks employees for their perception of how well informed they are of possible risks in their work environment.

4.9.2 Overall METC Results

For the first environmental, safety, and health question, a mean value of 2.45 (Figure 4.27) was obtained for the METC sample. Thus, METC employees believe that if improper or substandard work was performed by their working group, the potential for serious offsite environmental consequences is low.

The mean value for the METC sample on the second question was 2.45 (Figure 4.27). This indicates that respondents believe the potential for onsite environmental consequences to be equivalent to the potential for offsite environmental consequences.

The mean value obtained for the third environmental, safety, and health question was 5.09 (Figure 4.27). METC employees believe management places a fairly high amount of emphasis on environmental issues.

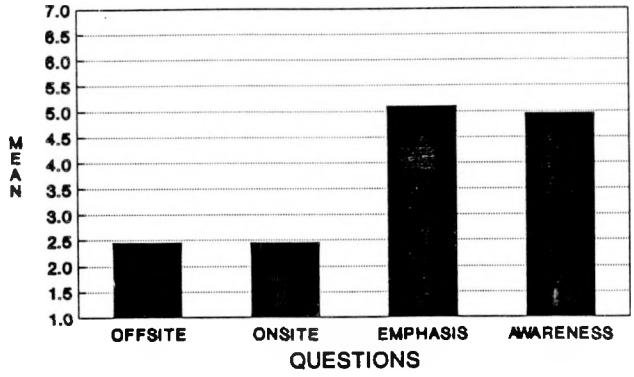

Figure 4.27. Overall means on environmental, safety, and health questions

The mean value obtained for the fourth environmental, safety, and health question was 4.95, slightly lower than the previous question (Figure 4.27). METC employees believe themselves to be fairly well informed concerning the risks in their work environment.

Figure 4.27a compares overall METC, DOE, and EG&G Organizations on the four environmental, safety, and health questions. As discussed below, the DOE and EG&G Organizations do not differ substantially in their mean responses to any of the four questions.

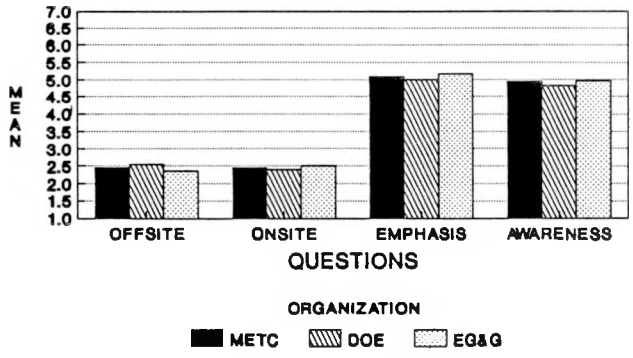

Figure 4.27a. Comparison of METC overall, DOE, and EG&G on the environmental, safety, and health questions

4.9.3 Differences Between Organizations on the Environmental, Safety, and Health Questions

No statistically significant differences were obtained between METC Organizations on any of the environmental, safety, or health questions. Appendix M presents graphs which compare each organization to the overall mean for METC on each of the environmental, safety, and health questions. Appendix U presents graphs which compare each DOE Department to the overall mean for DOE on each of the Environmental, Safety, and Health questions. Similar graphs, appropriate to EG&G, are contained in Appendix V.

4.9.4 Differences Between DOE Departments on the Environmental, Safety, and Health Questions

Statistically significant differences between DOE Departments were obtained on one of the four environmental, safety, and health questions. Figure 4.28 presents the statistically significant differences between the three DOE Departments on the Onsite Environmental, Safety, and Health Question. The OTM Department had the lowest mean value on this question and was statistically significantly different from both the OAST and the ORM Departments. The OAST Department had the highest mean value on this question.

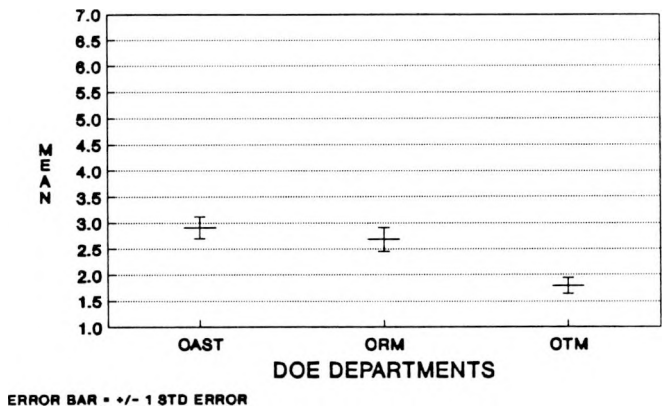

Figure 4.28. Significant differences between DOE departments on onsite environmental, safety, and health question

4.9.5 Differences Between EG&G Departments on the Environmental, Safety, and Health Questions

Statistically significant differences between EG&G Departments were obtained on two of the environmental, safety, and health questions. The ES&H Services Department had a statistically significantly higher mean value on the Offsite Environmental, Safety, and Health Question than every other EG&G Department (Figure 4.29). The Program Integration and Control Department had the lowest mean value of the EG&G Departments on this question.

Statistically significant differences between EG&G Departments were also obtained on the Onsite Environmental, Safety, and Health Question (Figure 4.30). The ES&H Services Department again had a statistically significantly higher mean value on this question than every other EG&G Department. In addition, the Program Integration and Control Department again had the lowest mean value on this question of all the EG&G Departments.

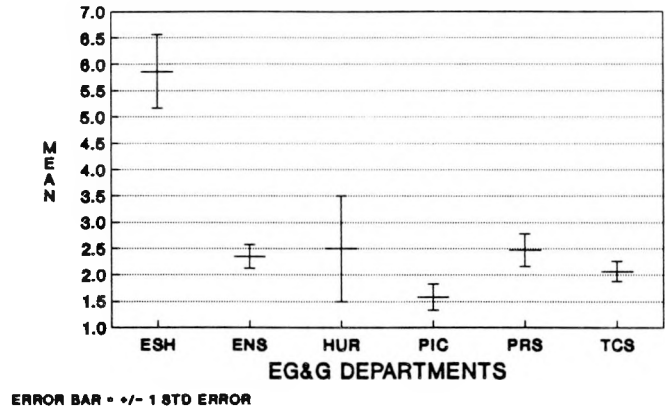

Figure 4.29. Significant differences between EG&G departments on offsite environmental, safety, and health question

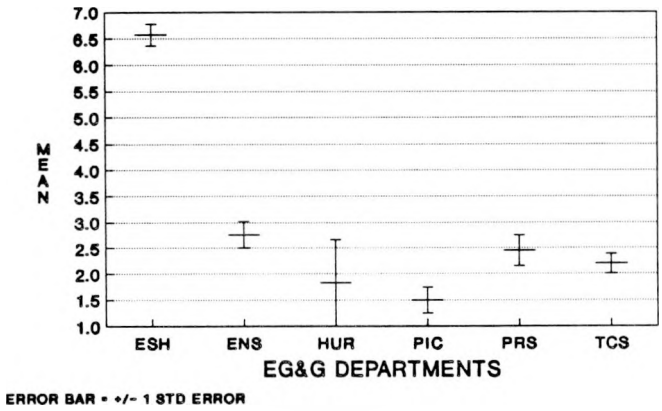

Figure 4.30. Significant differences between EG&G departments on onsite environmental, safety, and health question

4.9.6 Differences Between Staff Classifications on the Environmental, Safety, and Health Questions

Statistically significant differences between staff classifications at METC were obtained on two of the four environmental, safety, and health questions. Figure 4.31 depicts the statistically significant differences between staff classifications on the Onsite Environmental, Safety, and Health Question. The Laboratory Research Staff Classification believes their work involves significantly greater potential for onsite environmental consequences than do the Office/Clerical and Program Management Staff Classifications (which have equivalent mean values on this question).

Statistically significant differences between staff classifications for the overall METC population were also found on the Employee Awareness Question (Figure 4.32). The Engineering/Scientific Staff

had a statistically significantly lower mean value on this question than did the Engineering Research and Program Management Staff Classifications. The Program Management Staff Classification had the highest mean value on this question.

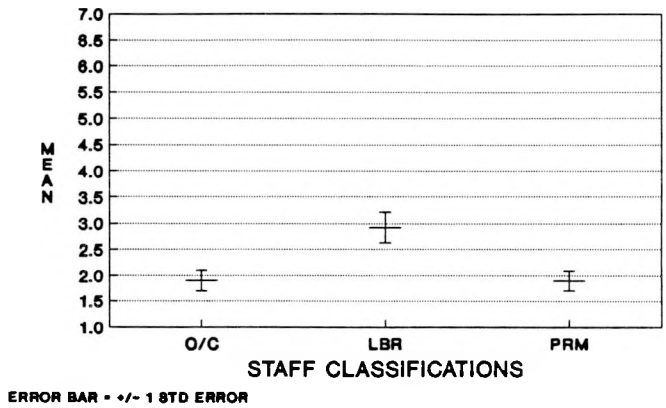

Figure 4.31. Significant differences between staff classifications on the onsite environmental, safety, and health question

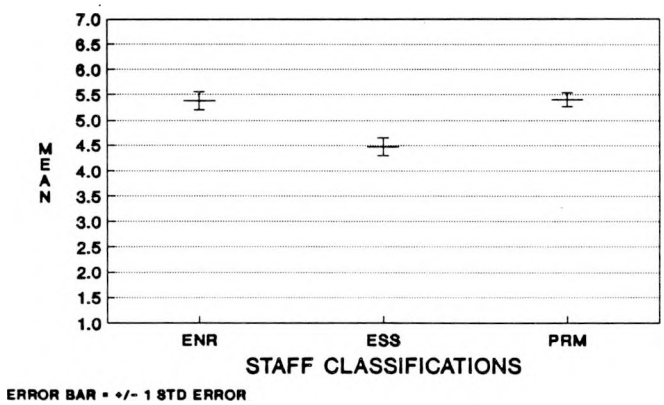

Figure 4.32. Significant differences between staff classifications on the employee awareness question

When differences between staff classifications in the DOE Organization on the environmental, safety, and health questions were assessed, statistically significant differences were found only on the Employee Awareness Question (Figure 4.33). The Program Management Staff Classification had the highest mean value in the DOE Organization and were statistically significantly different from both the Engineering/Scientific Staff and Other Staff Classifications. The Other Staff Classification had the lowest mean value on this question. Other statistically significant differences between the DOE Organization Staff Classifications are presented in Appendix E.

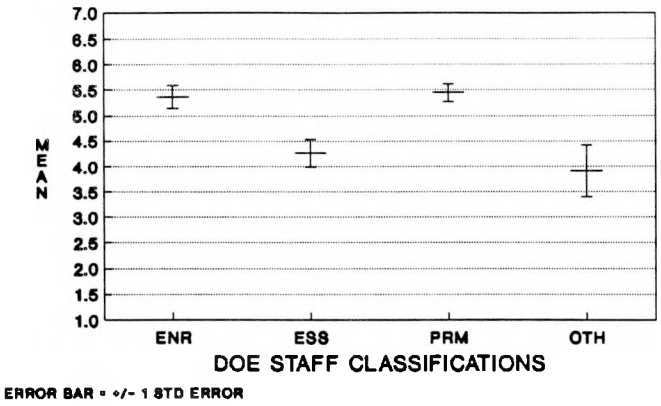

Figure 4.33. Significant differences between DOE staff classifications on the employee awareness question

No statistically significant differences between staff classifications within the EG&G Organization were found on any of the environmental, safety, and health questions.

4.9.7 Differences Between Supervisory Levels on the Environmental, Safety, and Health Questions

No statistically significant differences between supervisory levels, regardless of the way in which they were analyzed, were obtained for the overall METC sample, or within either of the organizations on any of the environmental, safety, and health questions.

5. CONCLUSIONS

The Organizational Culture Assessment (OCA) which took place at the Morgantown Energy Technology Center (METC) on April 29 and 30, 1991, was the sixth to occur at a U.S. Department of Energy (DOE) facility. The facility differed somewhat from previous sites, utilizing both DOE and EG&G contractor employees to operate the facility. Just over half of the employees are DOE.

All 530 employees received notice of the OCA administration. A total of 475 employees actually completed the survey, yielding a very high response rate of 89.6 percent. Within the two organizations, DOE and EG&G, comparable response rates were obtained, 80.3 percent and 80.8 percent, respectively.

The overall organizational cultural profile which emerges from the results of the METC OCA is indicative of an organization which deals with issues in a passive, yet defensive manner. This is indicated by the high mean values on the Approval (C3), Conventional (C4), and Dependent (C5) scales. The profile also indicates an organization which feels the pressure to achieve high standards, as seen in the high mean values obtained on the Perfectionistic (C10) and Achievement (C11) scales.

On the communication scales, the METC Organization had moderate to moderately high mean values. The organization scored lowest on the Trust in Communication and Satisfaction with Communication Scales.

While members of the organization describe their working groups as being cohesive, they indicate a lower commitment to the organization and low coordination between organizational units. In general, METC employees do not believe their jobs to be highly hazardous; however, they do believe the attributes of safety to be important. Employees also do not perceive a large potential for either offsite or onsite environmental consequences from their jobs; however, both management emphasis and employee awareness of environmental, safety, and health issues are perceived to be moderately high.

Some statistically significant differences exist between the DOE and EG&G Organizations on the OCA. Employees of the METC Organization perceive the two organizations to be separate entities; however, they do not exhibit very different profiles. The organizational differences that do exist, however, portray a consistent theme, with DOE being statistically significantly lower on the Conventional (C4) and Perfectionistic (C10) Scales, and statistically significantly higher on the Communication - Trust, Communication - Interaction, Commitment, and Job Satisfaction Scales.

Consideration of departments within each organization yields few statistically significant differences. Those differences which do exist are all relevant to hazard and environmental, safety, and health issues. In DOE, the OTM department is statistically significantly lower than OAST and ORM on both the Hazard Scale and the Potential for Onsite Environmental Consequences Question. Within EG&G, the ES&H Services Department is statistically significantly different from every other EG&G Department on the Potential for Offsite and for Onsite Environmental Consequences Questions.

As discussed earlier, the staff classifications provided on the background information sheet were more relevant for the DOE Organization than for the EG&G Organization. This was further supported by the fact that the majority of EG&G respondents categorized themselves into the "Other" Staff Classification. Therefore, any discussion of statistically significant differences between staff classifications must be done cautiously.

The Engineering Research and the Program Management Staff Classifications have similar cultural profiles. Both are high (relative to other staff classifications) on the Achievement (C11), Commitment, Communication - Trust Scales, and on their perception of management's emphasis on environmental, safety, and health issues. The Laboratory Research Staff Classification's profile is decidedly different in that it is low on the Affiliative (C2), Achievement (C11), and Commitment Scales, yet high on the perception of the hazardous nature of job and the potential for onsite environmental consequences due to substandard performance in their work group.

When the staff classifications are analyzed within the two organizations, DOE and EG&G the majority of statistically significant differences occur within the DOE Staff Classifications. This again may be a reflection of the inadequacy of the staff classifications used on the background information sheet for the EG&G employees. In general, the results obtained for staff classifications within the DOE and the EG&G Organizations are consistent with the profiles found for staff classifications across the entire METC Organization.

The results obtained for supervisory levels are not inconsistent with what might be expected and is often reported in the literature. When the three supervisory levels are considered over the entire METC organization, statistically significant differences are found only on the Communication - Interaction Scale, with the Non-Supervisors scoring statistically significantly lower than both the Administrative and Scientific/Engineering Supervisors. When the two supervisory levels are collapsed into one and compared to the Non-Supervisors, the Supervisors have statistically significantly higher mean values than the Non-Supervisors on the Humanistic-Encouraging (C1), Achievement (C11), Communication - Interaction, and Safety Scales. No statistically significant differences between supervisory levels were found within the EG&G Organization. Within the DOE Organization, the Non-Supervisors had statistically significantly lower mean values on the Communication - Interaction and Safety Scales than both the Administrative and Scientific/Engineering Supervisors.

In summary, the METC population, as represented by those who completed the OCA, appears to be somewhat uncertain about the values, beliefs, and goals of their organization. This appears to be more true of the EG&G population than of the DOE Organization. Employees indicate they often "go along" with what they are told to do and often react in a defensive manner. Commitment and overall job satisfaction are not high within the organization and may be a further reflection of the uncertainty being felt by all organizational members. Despite the fact that METC employees view DOE and EG&G as two separate organizations, there are few statistically significant differences between these groups. However, the differences which do exist are consistent and may be indicative of some problematic areas between the two organizations.

6. REFERENCES

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APPENDIX A

SIGNIFICANT DIFFERENCES BETWEEN ORGANIZATIONS ON OCA SCALES

Code	Organization	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12
1	DOE	3.02	3.05	3.05	3.19	3.34	2.54	2.45	2.94	2.82	3.05	3.43	2.98
					2						2		
2	EG&G	3.04	3.23	3.14	3.49	3.49	2.50	2.47	2.82	2.63	3.32	3.35	2.94
					1						1		

Code	Organization	COT	COH	HAZ	SAF	COD	JOB	CMT	CMA	CMI	CMS
1	DOE	4.28	5.05	2.93	5.17	3.73	4.74	4.40	4.72	5.44	4.27
		2					2	2		2	
2	EG&G	3.35	4.97	3.10	5.40	3.63	4.18	3.90	4.57	5.04	3.93
		1					1	1		1	

Code	Organization	OFF	ONS	MGE	EMA
1	DOE	2.53	2.38	5.00	4.82
2	EG&G	2.35	2.50	5.16	4.97

First line of each box = mean for organization on that scale.
Second and third line of each box = those organizations (coded by number) that the organization is significantly different from.

APPENDIX B

SIGNIFICANT DIFFERENCES BETWEEN DOE DEPARTMENTS ON OCA SCALES

Code	DOE Departments	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12
1	OAST	2.79	2.92	3.16	3.41	3.42	2.73	2.48	3.13	3.04	3.06	3.32	2.88
2	ORM	3.11	3.08	3.02	3.14	3.27	2.56	2.45	2.79	2.65	3.06	3.41	3.00
3	OTM	3.14	3.13	2.94	3.08	3.33	2.37	2.44	2.88	2.78	3.06	3.55	3.05

Code	DOE Departments	COT	COH	HAZ	SAF	COD	JOB	CMT	CMA	CMI	CMS
1	OAST	4.07	5.06	3.71	5.11	3.61	4.50	4.64	4.85	5.48	4.20
				3							
2	ORM	4.16	5.08	3.43	5.23	3.47	4.81	4.30	4.58	5.37	4.23
				3							
3	OTM	4.51	5.00	1.93	5.11	4.00	4.87	4.52	4.72	5.48	4.35
				1,2							

Code	DOE Departments	OFF	ONS	MGE	EMA
1	OAST	2.51	2.96	4.95	5.03
			3		
2	ORM	2.36	2.61	4.90	4.56
			3		
3	OTM	2.82	1.76	5.23	4.97
			1,2		

First line of each box = mean for DOE department on that scale.
Second and third line of each box = those DOE departments (coded by number) that the DOE department is significantly different from.

NOTE: Does not include Directorate Department as Background Information Sheet excluded this department.

APPENDIX C

SIGNIFICANT DIFFERENCES BETWEEN EG&G DEPARTMENTS ON THE OCA

Code	EG&G Department	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12
1	ES&H Services	2.73	2.71	3.07	3.14	3.57	2.69	2.76	3.36	3.19	3.54	2.90	2.74
2	Engineering Services	3.14	3.20	3.00	3.34	3.43	2.28	2.36	2.71	2.59	3.21	3.48	2.95
3	Human Resources	3.65	3.62	3.42	3.75	3.38	2.70	2.78	3.30	3.01	3.88	3.77	3.08
4	Program Integration and Control	3.26	3.31	3.12	3.23	3.25	2.40	2.65	2.73	2.61	3.08	3.55	3.12
5	Project Support	3.07	3.35	3.31	3.61	3.56	2.60	2.53	2.96	2.77	3.47	3.36	2.96
6	Technical Services	2.95	3.18	3.11	3.58	3.53	2.58	2.44	2.74	2.52	3.29	3.26	2.89

First line of each box = mean for EG&G department on that scale.
Second and third line of each box = those EG&G departments (coded by number) that the EG&G department is significantly different from.

Code	EG&G Department	COT	COH	HAZ	SAF	COD	JOB	CMT	CMA	CMI	CMS
1	ES&H Services	3.43	5.49	4.93	5.52	3.55	4.29	3.29	5.14	5.62	4.29
2	Engineering Services	3.62	5.08	3.09	5.42	3.83	4.26	4.04	4.91	5.49	4.04
3	Human Resources	4.06	4.93	2.81	5.45	2.78	4.00	4.08	4.17	4.39	4.00
4	Program Integration and Control	3.67	5.11	2.52	5.65	4.19	4.77	4.65	4.79	4.97	4.46
5	Project Support	3.80	4.95	2.98	5.43	3.61	4.35	4.03	4.37	4.74	4.28
6	Technical Services	2.95	4.91	3.04	5.33	3.52	3.97	3.59	4.42	4.93	3.57

First line of each box = mean for EG&G department on that scale.
Second and third line of each box = those EG&G departments (coded by number) that the EG&G department is significantly different from.

Code	EG&G Department	OFF	ONS	MGE	EMA
1	ES&H Services	5.86	6.57	3.43	5.00
		2,3,4,5,6	2,3,4,5,6		
2	Engineering Services	2.20	2.63	5.37	5.15
		1	1		
3	Human Resources	2.50	1.83	4.50	4.33
		1	1		
4	Program Integration and Control	1.54	1.46	5.77	5.62
		1	1		
5	Project Support	2.49	2.46	5.49	4.90
		1	1		
6	Technical Services	2.07	2.20	4.96	4.90
		1	1		

First line of each box = mean for EG&G department on that scale.
Second and third line of each box = those EG&G departments (coded by number) that the EG&G department is significantly different from.

APPENDIX D

SIGNIFICANT DIFFERENCES BETWEEN STAFF CLASSIFICATIONS ON THE OCA

Code	Staff Classification	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12
1	Engineering Research	3.08	3.24	2.88	3.24	3.19	2.46	2.37	2.59	2.55	2.91	3.46	3.05
			4									4	
2	Engineering/ Scientific Staff	2.95	3.01	3.08	3.38	3.50	2.57	2.43	3.00	2.71	3.13	3.27	2.80
3	Office/Clerical	3.26	3.39	3.09	3.33	3.34	2.41	2.56	2.81	2.55	3.24	3.59	3.14
			4									4	
4	Laboratory Research	2.65	2.75	3.26	3.50	3.61	2.82	2.53	3.24	3.12	3.12	2.99	2.71
			3,1,7									3,6,1,5	
5	Administration	3.00	2.98	3.11	3.23	3.41	2.58	2.51	3.06	2.88	3.32	3.41	2.99
												4	
6	Program Management	3.26	3.16	2.90	2.96	3.20	2.27	2.44	2.80	2.72	3.04	3.56	3.13
												4	
7	Other	3.01	3.23	3.20	3.52	3.54	2.59	2.39	2.81	2.68	3.33	3.30	2.89
			4										

First line of each box = mean for staff on that scale.
Second and third line of each box = those staffs (coded by number) that the staff is significantly different from.

Code	Staff Classification	COT	COH	HAZ	SAF	COD	JOB	CMT	CMA	CMI	CMS
1	Engineering Research	4.64	5.07	3.71	5.28	3.81	4.81	4.58	4.87	5.29	4.57
		2,4,7		5,3,6				7			
2	Engineering/ Scientific Staff	3.62	4.98	3.03	5.12	3.53	4.14	4.11	4.81	5.39	3.95
		6,1		5,6							
3	Office/Clerical	4.16	5.22	2.37	5.40	3.98	4.79	4.29	4.50	5.18	4.42
		7		5,1							
4	Laboratory Research	3.31	5.18	4.12	5.10	3.63	4.17	4.38	4.83	5.35	3.81
		6,1		2,5,3,6							
5	Administration	3.78	4.78	2.59	5.36	3.47	4.42	4.11	4.58	5.41	4.07
				5,1							
6	Program Management	4.64	4.99	2.19	5.26	4.09	4.98	4.80	4.80	5.51	4.59
		2,4,7		5,1,2				7			
7	Other	3.28	4.86	3.46	5.29	3.56	4.28	3.74	4.49	5.01	3.80
		6,1,3						6,1			

First line of each box = mean for staff on that scale.
Second and third line of each box = those staffs (coded by number) that the staff is significantly different from.

Code	Staff Classification	OFF	ONS	MGE	EMA
1	Engineering Research	2.38	2.84	5.53	5.38
					2
2	Engineering/ Scientific Staff	2.57	2.64	4.70	4.47
					6,1
3	Office/Clerical	2.14	1.90	5.36	5.06
			4		
4	Laboratory Research	2.53	2.92	5.08	5.08
			3,6		
5	Administration	2.17	2.10	4.82	4.60
6	Program Management	2.84	1.90	5.50	5.40
			4		2
7	Other	2.60	2.83	4.83	4.73

First line of each box = mean for staff on that scale.
Second and third line of each box = those staffs (coded by number) that the staff is significantly different from.

APPENDIX E

SIGNIFICANT DIFFERENCES BETWEEN DOE STAFF CLASSIFICATIONS ON THE OCA

Code	DOE Staff Classification	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12
1	Engineering Research	3.08	3.20	2.90	3.20	3.11	2.51	2.39	2.66	2.63	2.93	3.49	3.06
2	Engineering/ Scientific Staff	2.84	2.81	2.97	3.17	3.39	2.63	2.55	3.01	2.78	2.89	3.33	2.78
3	Office/Clerical	3.31	3.40	3.00	3.10	3.21	2.32	2.48	2.84	2.63	3.14	3.72	3.26
		4											
4	Laboratory Research	2.59	2.73	3.26	3.50	3.65	2.89	2.52	3.28	3.25	3.06	3.04	2.67
		3,6											
5	Administration	3.00	2.96	3.11	3.15	3.35	2.48	2.45	2.96	2.81	3.19	3.49	3.05
6	Program Management	3.29	3.16	2.91	2.92	3.19	2.25	2.41	2.79	2.74	3.01	3.55	3.13
		4											
7	Other	2.89	3.14	3.52	3.64	3.94	3.10	2.20	3.48	3.05	3.40	3.31	2.77

First line of each box = mean for DOE staff classification on that scale.
Second and third line of each box = those DOE staff classifications (coded by number) that the DOE staff classification is significantly different from.

Code	DOE Staff Classification	COT	COH	HAZ	SAF	COD	JOB	CMT	CMA	CMI	CMS
1	Engineering Research	4.83	5.23	3.68	5.25	3.83	4.93	4.58	4.78	5.34	4.56
		7,4		5,6							
2	Engineering/ Scientific Staff	4.25	4.93	2.95	4.98	3.44	4.53	4.23	4.74	5.43	4.20
3	Office/Clerical	4.89	5.30	2.57	5.17	3.96	5.15	4.50	4.66	5.43	4.67
		7,4		4							
4	Laboratory Research	3.19	5.21	3.97	5.07	3.44	4.17	4.39	4.70	5.31	3.80
		3,1,6		3,5,6							
5	Administration	3.84	4.74	2.30	5.32	3.52	4.71	4.13	4.56	5.63	4.11
				4,1							
6	Program Management	4.77	5.04	2.02	5.28	4.23	5.07	4.86	4.90	5.74	4.64
		7,4		4,1		7					
7	Other	3.27	4.84	3.16	4.85	3.38	4.09	3.48	4.32	4.94	3.00
		3,1,6				6					

First line of each box = mean for DOE staff classification on that scale.
Second and third line of each box = those DOE staff classifications (coded by number) that the DOE staff classification is significantly different from.

Code	DOE Staff Classification	OFF	ONS	MGE	EMA
1	Engineering Research	2.41	3.00	5.39	5.37
					7
2	Engineering/ Scientific Staff	2.50	2.38	4.59	4.26
					6
3	Office/Clerical	3.00	2.48	4.88	4.42
4	Laboratory Research	2.33	2.73	4.87	5.00
5	Administration	1.91	1.83	4.68	4.32
6	Program Management	3.09	1.86	5.59	5.45
					2,7
7	Other	2.36	2.45	4.45	3.91
					6,1

First line of each box = mean for DOE staff classification on that scale.
Second and third line of each box = those DOE staff classifications (coded by number) that the DOE staff classification is significantly different from.

APPENDIX F

SIGNIFICANT DIFFERENCES BETWEEN EG&G STAFF CLASSIFICATIONS ON THE OCA

Code	EG&G Staff Classifications	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12
1	Engineering Research	3.13	3.46	3.03	3.47	3.52	2.46	2.29	2.54	2.37	2.87	3.46	3.13
2	Engineering/Scientific Staff	2.99	3.13	3.11	3.52	3.58	2.48	2.35	2.93	2.60	3.29	3.22	2.80
3	Office/Clerical	3.23	3.44	3.15	3.49	3.40	2.45	2.62	2.76	2.49	3.31	3.54	3.09
4	Laboratory Research	2.57	2.17	3.37	3.67	3.43	2.83	2.40	2.90	2.37	3.27	2.57	2.30
5	Administration	3.05	3.04	3.22	3.52	3.61	2.81	2.66	3.41	3.18	3.73	3.26	2.91
6	Program Management	3.39	3.31	2.75	2.84	2.96	1.90	2.56	2.71	2.71	2.99	3.99	3.25
7	Other	2.97	3.21	3.21	3.57	3.53	2.54	2.44	2.72	2.64	3.36	3.26	2.85

First line of each box = mean for EG&G staff classification on that scale.
Second and third line of each box = those EG&G staff classifications (coded by number) that the EG&G staff classification is significantly different from.

Code	EG&G Staff Classifications	COT	COH	HAZ	SAF	COD	JOB	CMT	CMA	CMI	CMS
1	Engineering Research	3.79	4.44	3.82	5.40	4.02	4.45	4.33	4.91	5.06	4.36
2	Engineering/Scientific Staff	3.04	5.01	3.05	5.35	3.56	3.80	3.82	4.83	5.34	3.61
3	Office/Clerical	3.68	5.20	2.22	5.59	4.94	4.58	4.12	4.35	4.95	4.29
4	Laboratory Research	3.11	4.67	5.00	5.28	4.11	4.67	3.50	5.22	6.00	4.00
				5,6,3							
5	Administration	3.50	4.87	2.99	5.37	3.20	3.47	4.06	4.63	5.11	3.76
				4							
6	Program Management	4.81	5.18	2.64	5.78	3.81	5.44	4.81	4.74	5.22	4.78
7	Other	3.19	4.86	3.53	5.32	3.57	4.23	3.70	4.33	4.94	3.80

First line of each box = mean for EG&G staff classification on that scale.
Second and third line of each box = those EG&G staff classifications (coded by number) that the EG&G staff classification is significantly different from.

Code	EG&G Staff Classifications	OFF	ONS	MGE	EMA
1	Engineering Research	2.45	2.55	5.82	5.09
2	Engineering/Scientific Staff	2.59	2.80	4.76	4.56
3	Office/Clerical	1.61	1.55	5.73	5.51
4	Laboratory Research	3.33	3.67	6.67	4.67
5	Administration	2.61	2.67	4.94	4.89
6	Program Management	1.56	1.56	5.22	4.89
7	Other	2.66	2.88	4.85	4.82

First line of each box = mean for EG&G staff classification on that scale.
Second and third line of each box = those EG&G staff classifications (coded by number) that the EG&G staff classification is significantly different from.

APPENDIX G

SIGNIFICANT DIFFERENCES BETWEEN SUPERVISORY LEVELS ON THE OCA

Code	Supervisory Level	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12
1	Administrative Supervision	3.15	3.04	3.05	3.15	3.33	2.40	2.60	3.21	3.04	3.40	3.63	3.09
2	Scientific/Engineering Supervision	3.37	3.24	2.82	3.04	3.21	2.32	2.43	2.80	2.73	3.09	3.60	3.14
3	Non-Supervisory	2.98	3.13	3.12	3.38	3.44	2.55	2.45	2.87	2.69	3.16	3.33	2.93

Code	Supervisory Level	COT	COH	HAZ	SAF	COD	JOB	CMT	CMA	CMI	CMS
1	Administrative Supervision	3.76	5.14	3.04	5.50	3.43	4.44	4.51	4.59	5.68	4.03
										3	
2	Scientific/Engineering Supervision	4.37	5.38	3.37	5.53	3.81	4.68	4.63	4.92	5.80	4.70
										3	
3	Non-Supervisory	3.81	4.94	2.97	5.20	3.72	4.46	4.15	4.66	5.13	4.08
										2,1	

Code	Supervisory Level	OFF	ONS	MGE	EMA
1	Administrative Supervision	3.14	2.86	5.30	5.14
2	Scientific/Engineering Supervision	2.65	2.82	5.56	5.35
3	Non-Supervisory	2.35	2.33	4.99	4.85

First line of each box = mean for supervisory level on that scale.
Second and third line of each box = those supervisory levels (coded by number) that the supervisory level is significantly different from.

APPENDIX H

SIGNIFICANT DIFFERENCES BETWEEN SUPERVISORS AND NONSUPERVISORS AT METC

Code	Organization	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12
1	Supervisors	3.28	3.16	2.91	3.09	3.26	2.35	2.50	2.96	2.85	3.21	3.61	3.12
		2										2	
2	Non-Supervisors	2.98	3.13	3.12	3.38	3.44	2.55	2.45	2.87	2.69	3.16	3.33	2.93
		1										1	

Code	Organization	COT	COH	HAZ	SAF	COD	JOB	CMT	CMA	CMI	CMS
1	Supervisors	3.04	5.28	3.24	5.52	3.66	4.59	4.58	4.79	5.75	4.44
					2					2	
2	Non-Supervisors	3.81	4.94	2.97	5.20	3.72	4.46	4.15	4.66	5.12	4.08
					1					1	

Code	Organization	OFF	ONS	MGE	EMA
1	Supervisors	2.84	2.84	5.46	5.26
2	Non-Supervisors	2.35	2.33	4.99	4.85

First line of each box = mean for supervisors/non-supervisors on that scale.
Second and third line of each box = those supervisors/non-supervisors (coded by number) that the supervisor/non-supervisor is significantly different from.

APPENDIX I

SIGNIFICANT DIFFERENCES BETWEEN DOE SUPERVISORY LEVELS ON THE OCA

Code	DOE Supervisory Levels	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12
1	Administrative Supervisors	3.11	3.03	3.05	3.03	3.39	2.34	2.60	3.27	3.21	3.22	3.74	3.22
2	Scientific/Engineering Supervisors	3.34	3.17	2.78	2.94	3.06	2.41	2.45	2.79	2.81	2.95	3.58	3.14
3	Non-Supervisors	2.94	3.03	3.11	3.27	3.41	2.58	2.45	2.95	2.79	3.06	3.37	2.92

Code	DOE Supervisory Levels	COT	COH	HAZ	SAF	COD	JOB	CMT	CMA	CMI	CMS
1	Administrative Supervisors	3.56	4.87	2.63	5.72	3.54	4.82	4.51	4.35	6.12	4.47
					3					3	
2	Scientific/Engineering Supervisors	4.68	5.43	3.25	5.51	3.82	4.78	4.67	4.97	5.89	4.76
					3					3	
3	Non-Supervisors	4.25	4.98	2.88	5.03	3.71	4.70	4.34	4.71	5.26	4.14
					1,2					1,2	

Code	DOE Supervisory Levels	OFF	ONS	MGE	EMA
1	Administrative Supervisors	3.18	2.59	4.88	4.82
2	Scientific/Engineering Supervisors	2.59	2.81	5.64	5.58
3	Non-Supervisors	2.45	2.23	4.86	4.65

First line of each box = mean for DOE supervisory level on that scale.
Second and third line of each box = those DOE supervisory levels (coded by number) that the DOE supervisory level is significantly different from.

APPENDIX J

SIGNIFICANT DIFFERENCES BETWEEN EG&G SUPERVISORY LEVELS ON THE OCA

Code	EG&G Supervisory Level	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12
1	Administrative Supervisors	3.10	2.88	3.07	3.41	3.29	2.57	2.61	3.31	3.06	3.58	3.53	2.85
2	Scientific/Engineering Supervisors	3.36	3.34	2.97	3.24	3.48	2.28	2.48	2.81	2.63	3.28	3.58	3.08
3	Non-Supervisors	3.02	3.26	3.17	3.53	3.50	2.51	2.46	2.78	2.60	3.29	3.31	2.93

Code	EG&G Supervisory Level	COT	COH	HAZ	SAF	COD	JOB	CMT	CMA	CMI	CMS
1	Administrative Supervisors	3.50	5.31	3.33	5.24	3.11	3.87	4.23	4.65	5.27	3.40
2	Scientific/Engineering Supervisors	3.63	5.24	3.56	5.55	3.59	4.29	4.52	4.60	5.67	4.59
3	Non-Supervisors	3.34	4.90	3.02	5.41	3.71	4.24	3.84	4.56	4.96	3.92

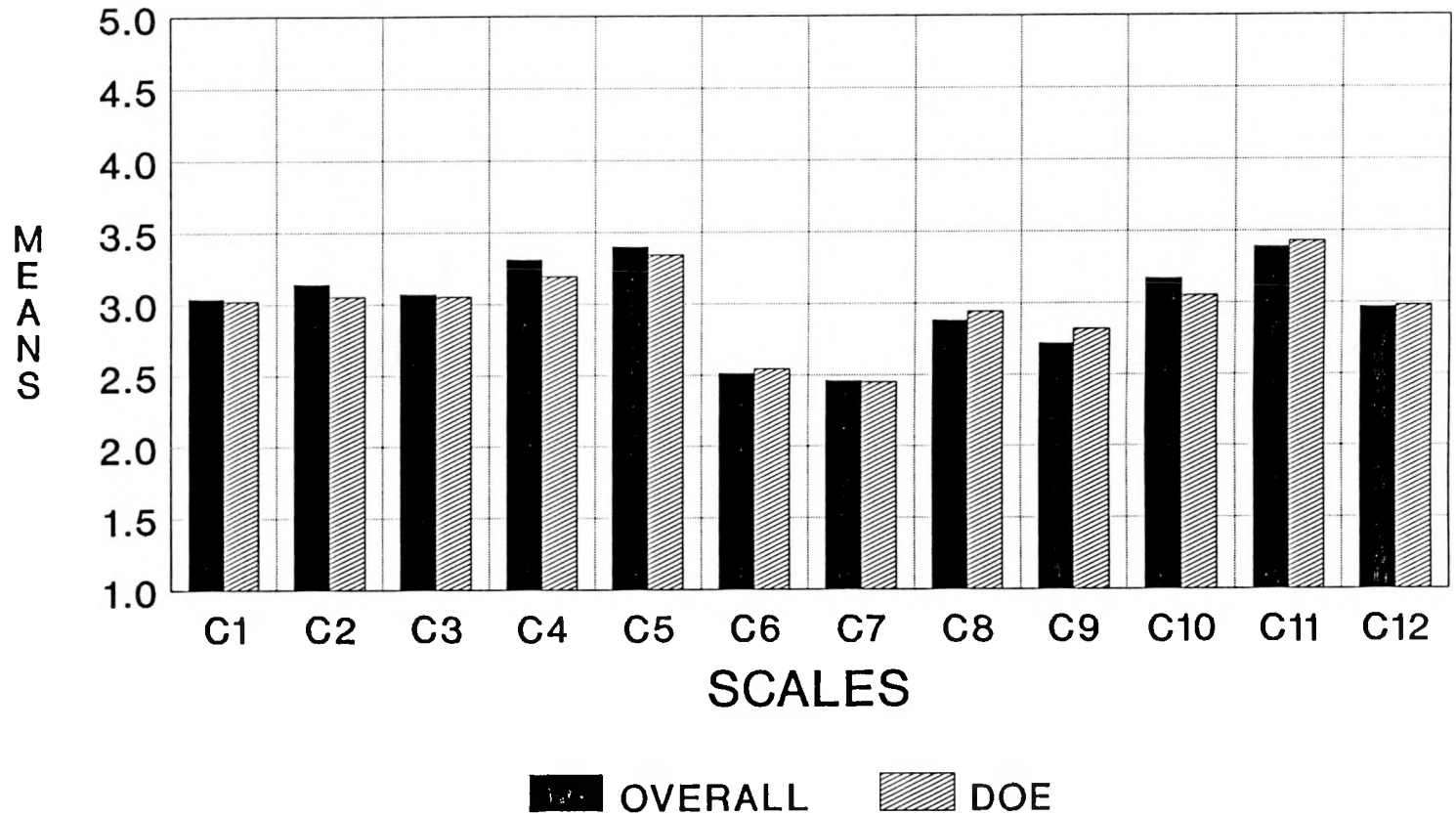
Code	EG&G Supervisory Level	OFF	ONS	MGE	EMA
1	Administrative Supervisors	3.31	3.38	5.69	5.25
2	Scientific/Engineering Supervisors	2.76	2.82	5.35	4.71
3	Non-Supervisors	2.22	2.38	5.07	4.95

First line of each box = mean for EG&G supervisory level on that scale.
Second and third line of each box = those EG&G supervisory levels (coded by number) that the EG&G supervisory level is significantly different from.

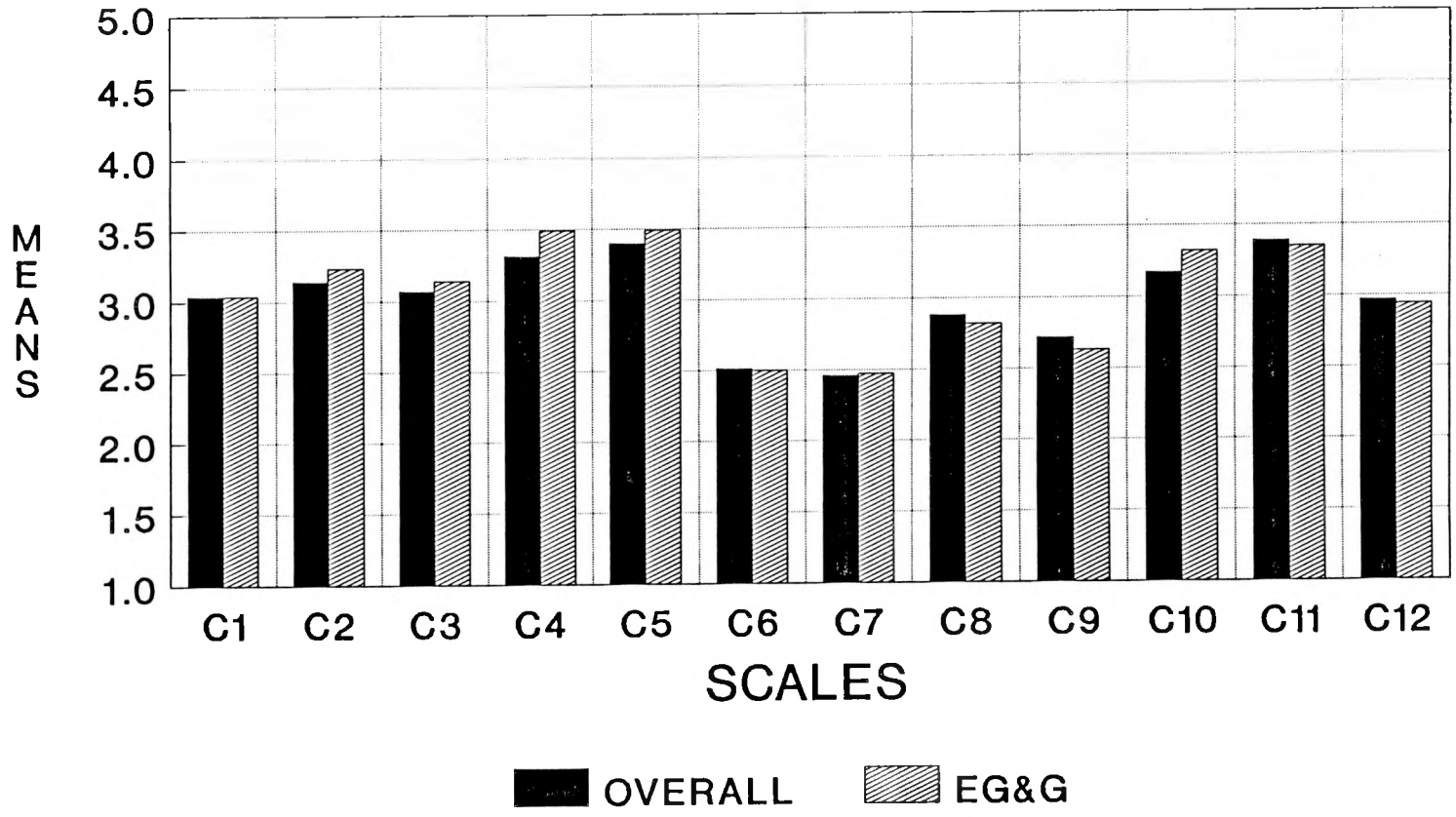
APPENDIX K

COMPARISON OF METC ORGANIZATIONS TO OVERALL METC MEAN VALUES ON THE OCA SCALES

DOE ORGANIZATION COMPARED TO METC OVERALL MEANS ON THE OCI SCALES



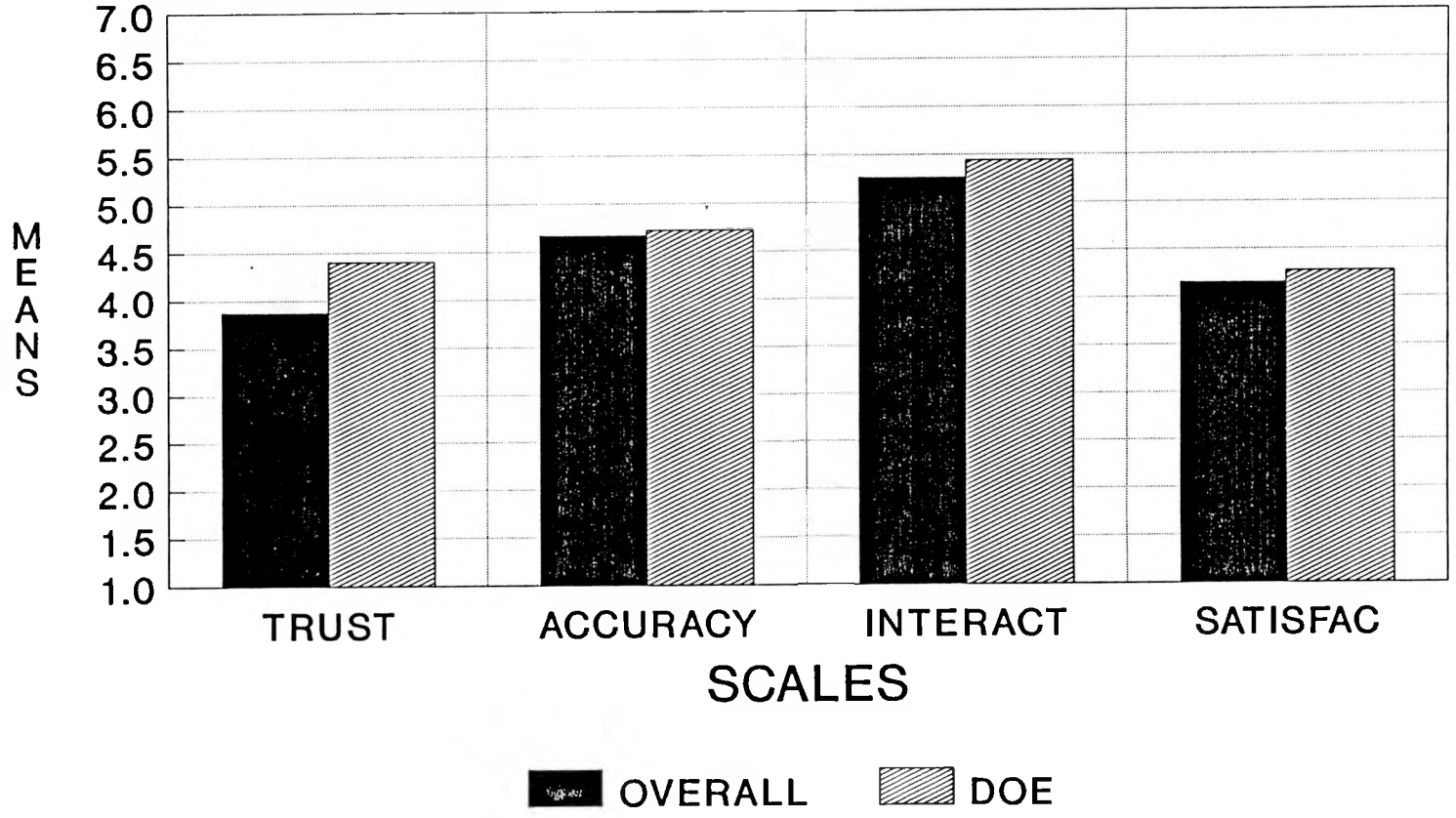
EG&G ORGANIZATION COMPARED TO THE METC OVERALL MEANS ON THE OCI SCALES



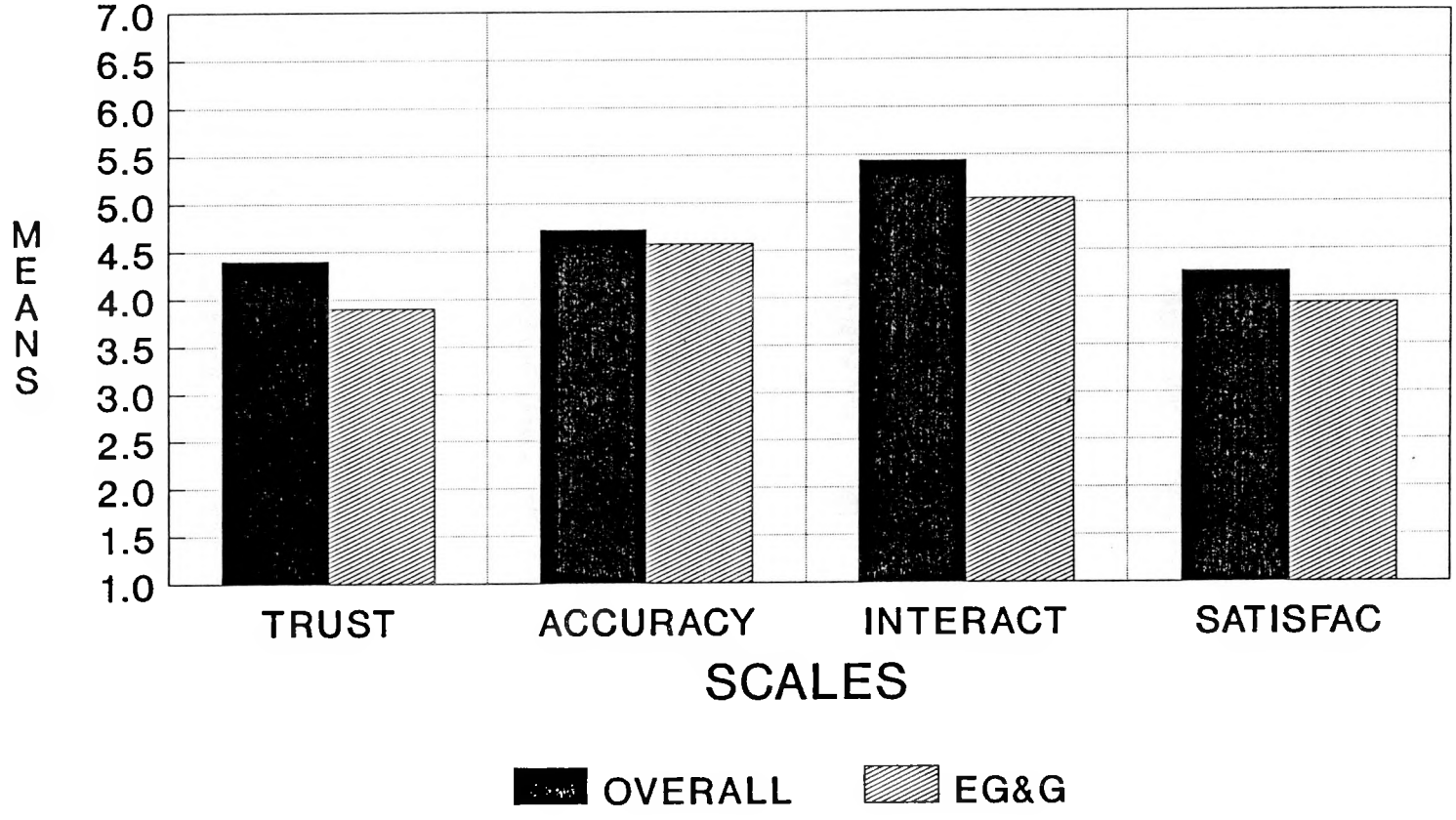
APPENDIX L

COMPARISON OF METC ORGANIZATIONS TO OVERALL METC MEAN VALUES ON THE COMMUNICATION SCALES

DOE ORGANIZATION COMPARED TO METC OVERALL MEANS ON COMMUNICATION SCALES



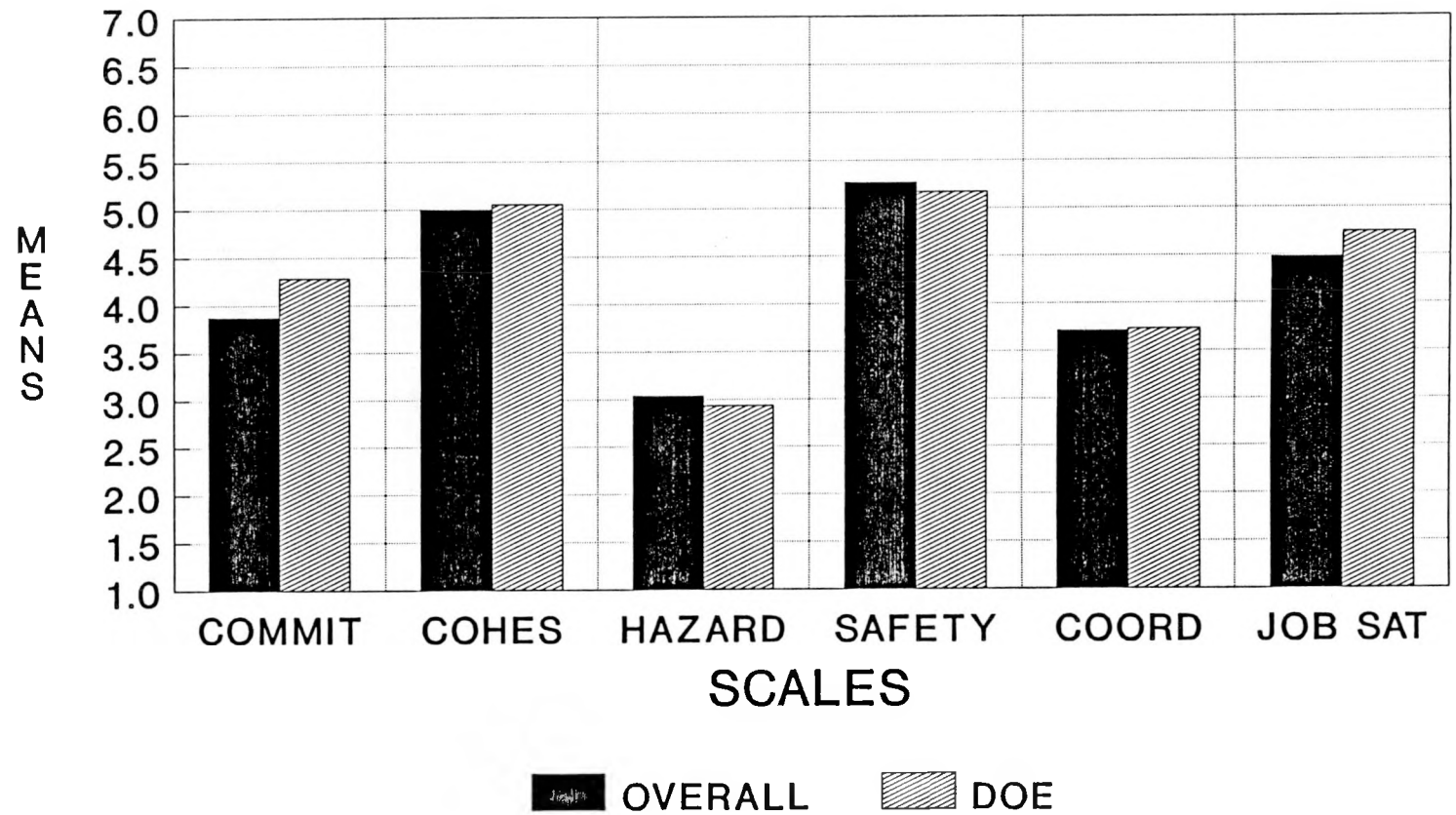
EG&G ORGANIZATION COMPARED TO METC OVERALL MEANS ON COMMUNICATION SCALES



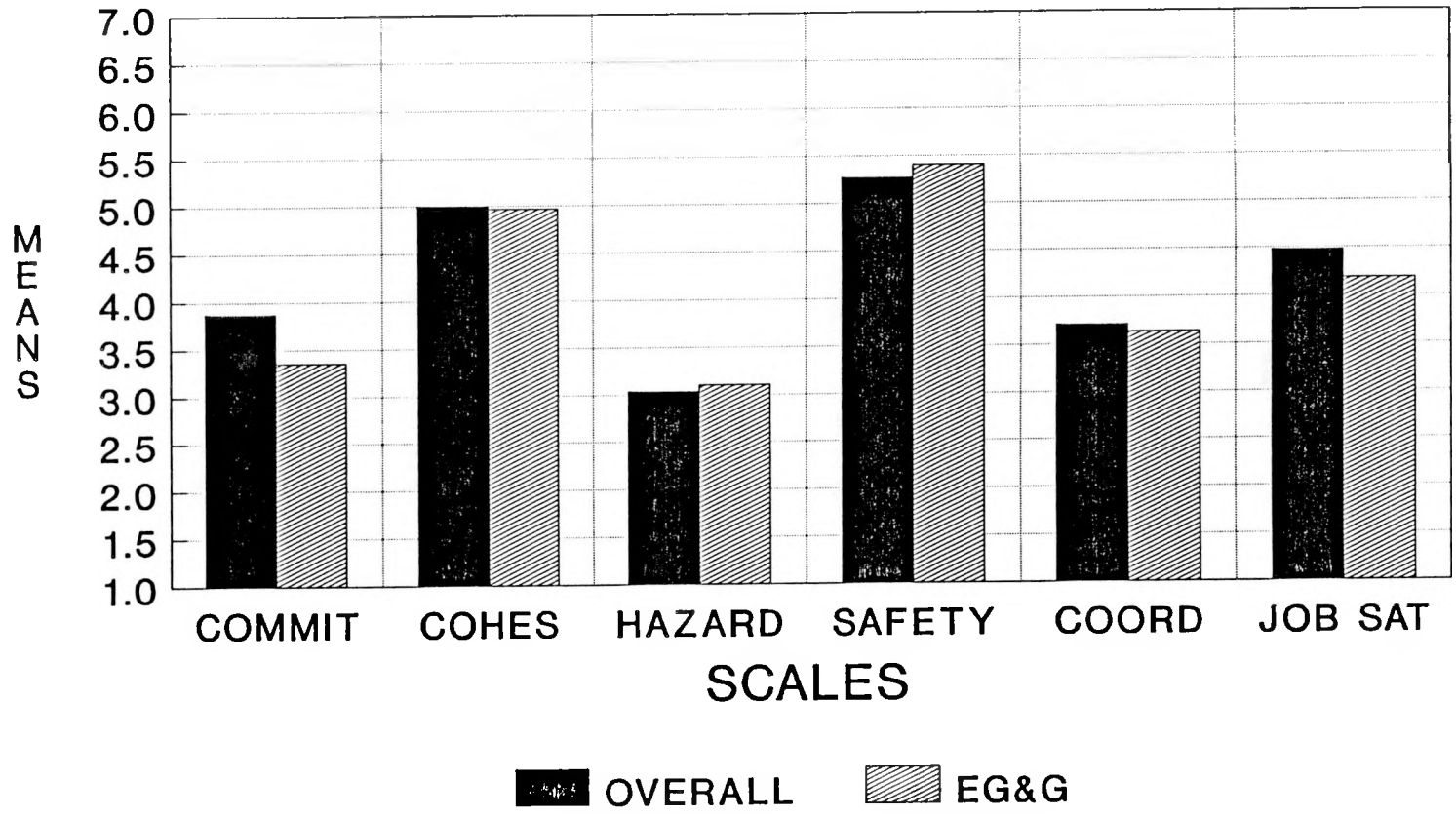
APPENDIX M

COMPARISON OF METC ORGANIZATIONS TO OVERALL METC MEAN VALUES ON THE ADDITIONAL SCALES

DOE ORGANIZATION COMPARED TO METC OVERALL MEANS ON ADDITIONAL SCALES



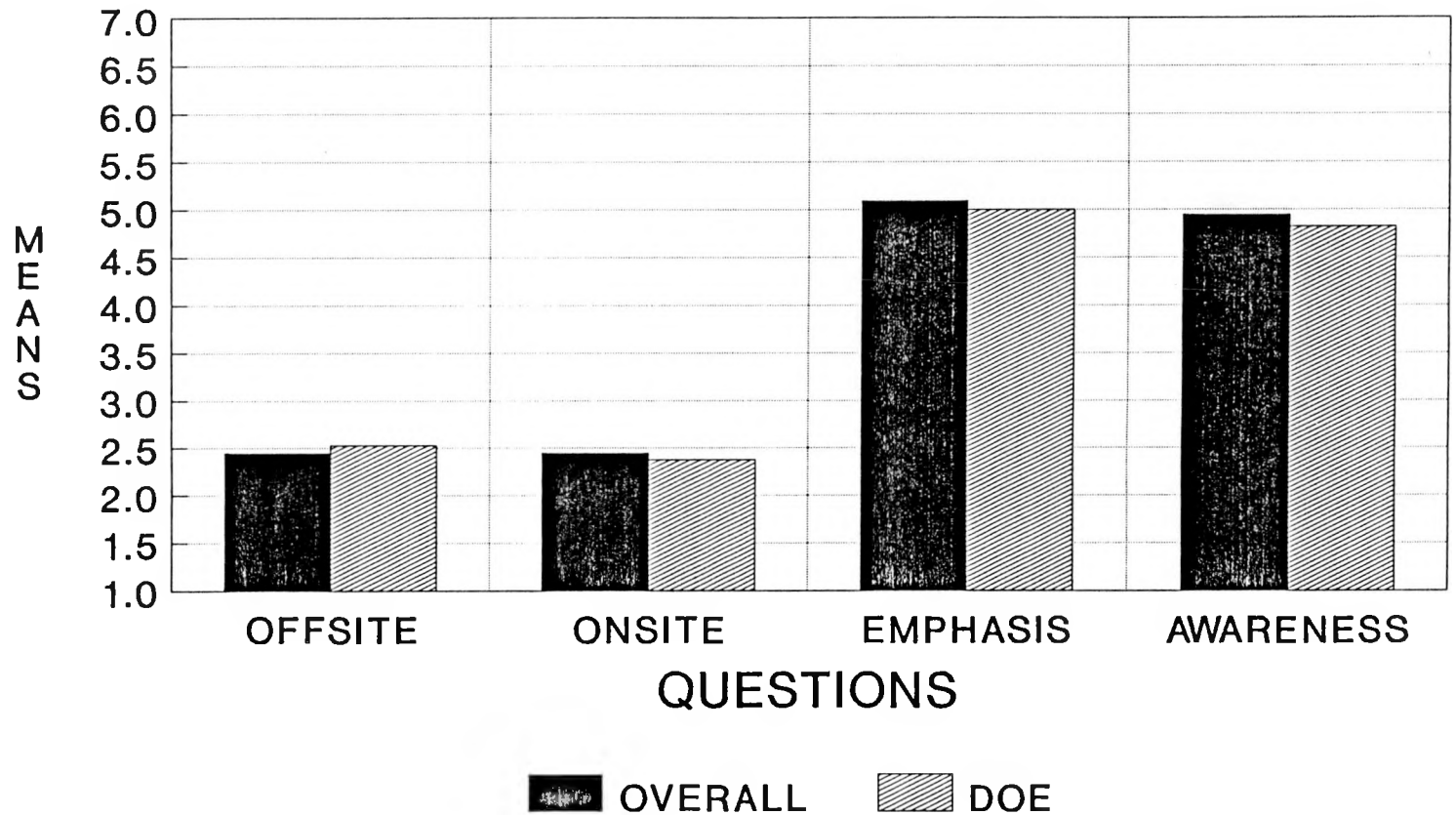
EG&G ORGANIZATION COMPARED TO THE METC OVERALL MEANS ON ADDITIONAL SCALES



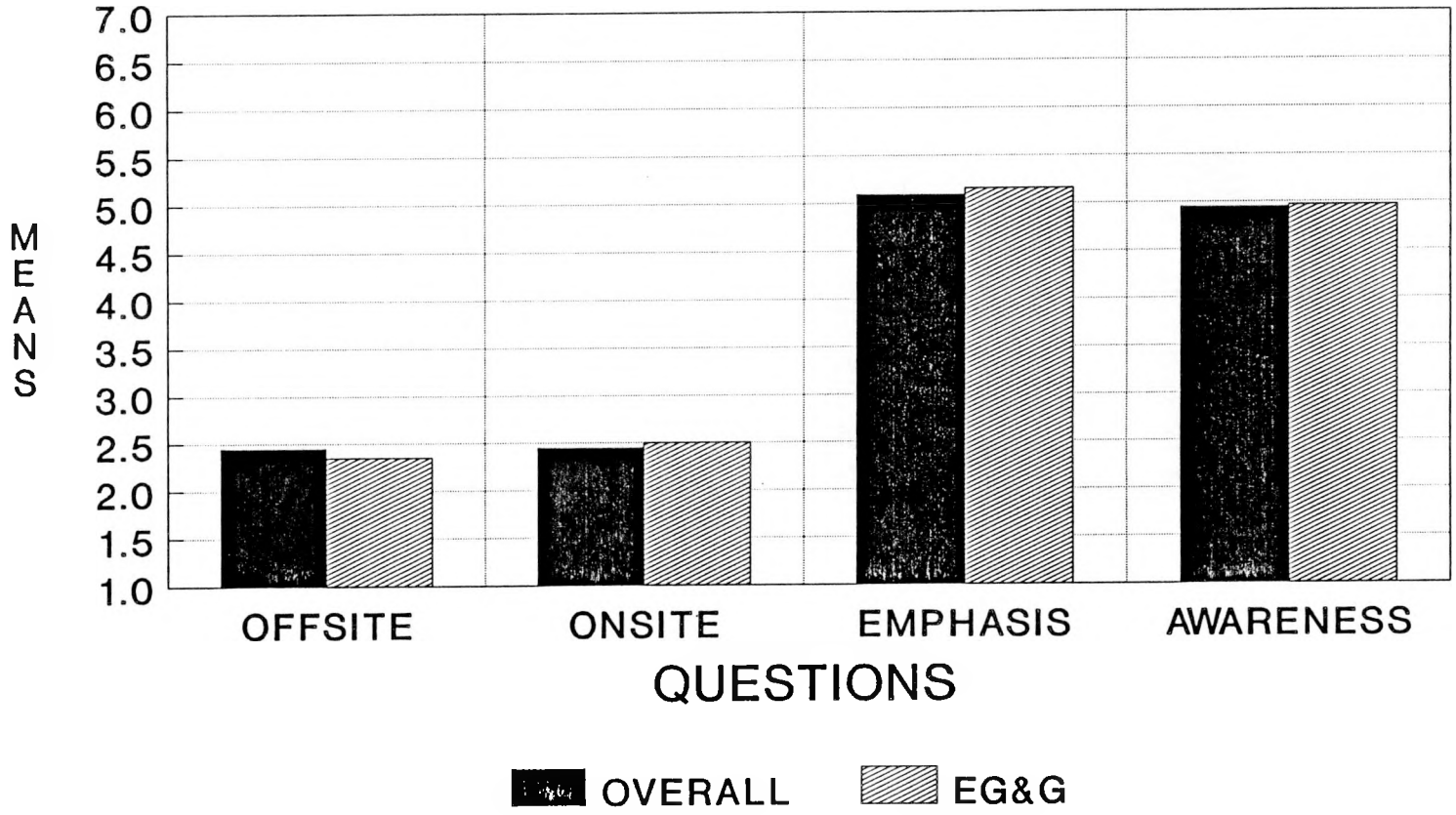
APPENDIX N

COMPARISON OF METC ORGANIZATIONS TO THE OVERALL METC MEAN VALUES ON THE ENVIRONMENTAL, SAFETY, AND HEALTH QUESTIONS

DOE ORGANIZATION COMPARED TO METC OVERALL MEANS ON ENVIRONMENT SAFETY AND HEALTH QUESTIONS



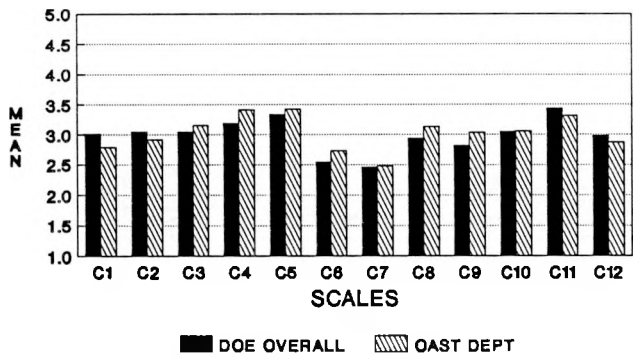
EG&G ORGANIZATION COMPARED TO METC OVERALL MEANS ON ENVIRONMENT SAFETY AND HEALTH QUESTIONS



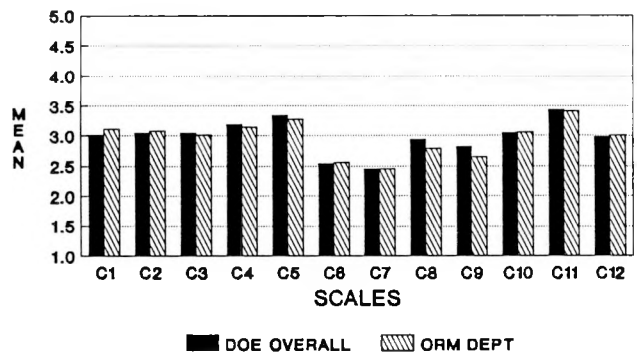
APPENDIX O

COMPARISON OF DOE DEPARTMENTS TO THE OVERALL DOE MEAN VALUES ON THE OCI

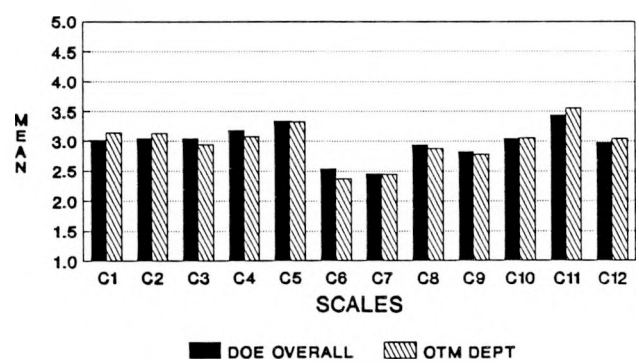
COMPARISON OF OVERALL MEANS
FOR DOE ON OCI SCALES TO MEANS
FOR THE OAST DEPARTMENT



COMPARISON OF OVERALL MEANS
FOR DOE ON OCI SCALES TO MEANS
FOR THE ORM DEPARTMENT



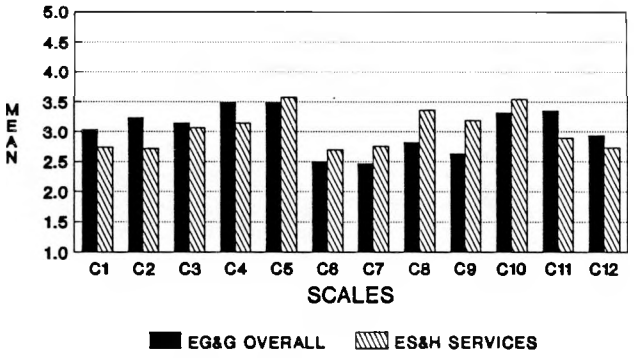
COMPARISON OF OVERALL MEANS
FOR DOE ON OCI SCALES TO MEANS
FOR THE OTM DEPARTMENT



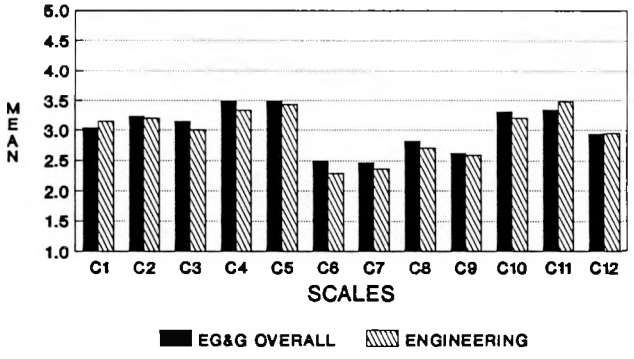
APPENDIX P

COMPARISON OF EG&G DEPARTMENTS TO THE OVERALL EG&G MEAN VALUES ON THE OCI

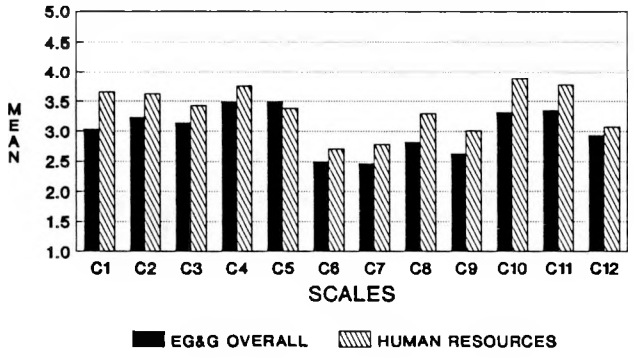
COMPARISON OF OVERALL MEANS FOR EG&G ON OCI SCALES TO MEANS FOR THE ES&H SERVICES DEPARTMENT



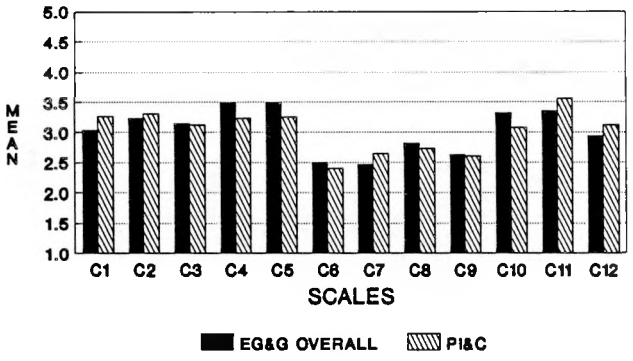
COMPARISON OF OVERALL MEANS FOR EG&G ON OCI SCALES TO MEANS FOR THE ENGINEERING SERVICES DEPARTMENT



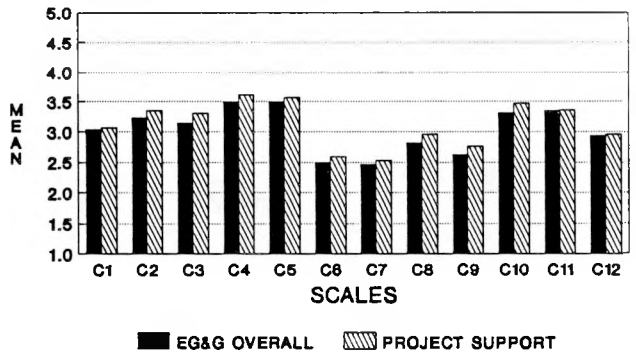
COMPARISON OF OVERALL MEANS FOR EG&G ON OCI SCALES TO MEANS FOR THE HUMAN RESOURCES DEPARTMENT



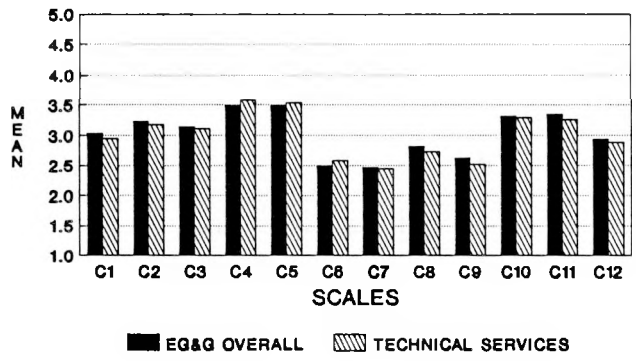
COMPARISON OF OVERALL MEANS FOR EG&G ON OCI SCALES TO MEANS FOR THE PROGRAM INTEGRATION & CONTROL



COMPARISON OF OVERALL MEANS FOR EG&G ON OCI SCALES TO MEANS FOR THE PROJECT SUPPORT DEPARTMENT



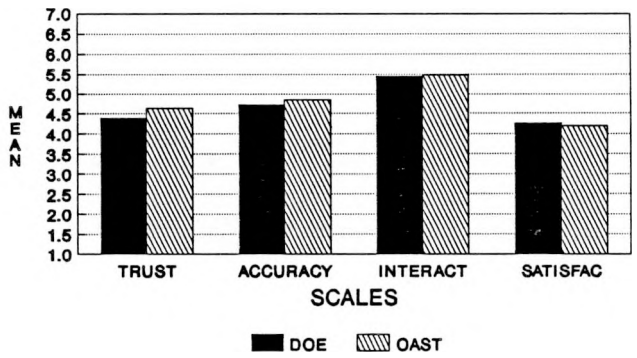
COMPARISON OF OVERALL MEANS FOR EG&G ON OCI SCALES TO MEANS FOR THE TECHNICAL SERVICES DEPARTMENT



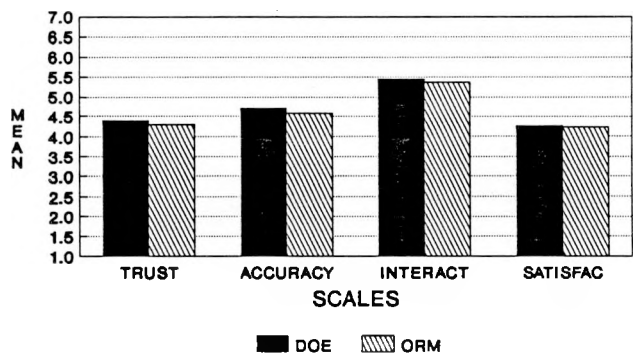
APPENDIX Q

COMPARISON OF DOE DEPARTMENTS TO THE OVERALL DOE MEAN VALUES ON THE COMMUNICATION SCALES

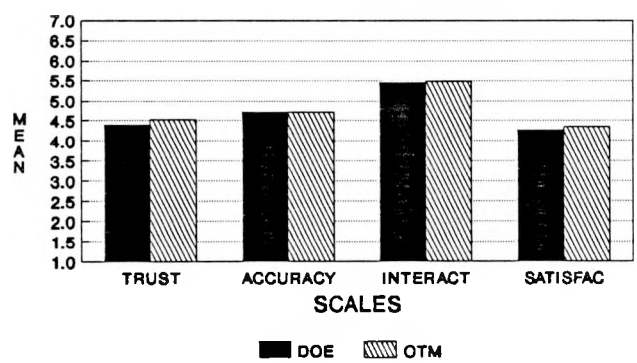
COMPARISON OF OVERALL MEANS FOR DOE ON COMMUNICATION SCALES TO MEANS FOR THE OAST DEPARTMENT



COMPARISON OF OVERALL MEANS FOR DOE ON COMMUNICATION SCALES TO MEANS FOR THE ORM DEPARTMENT



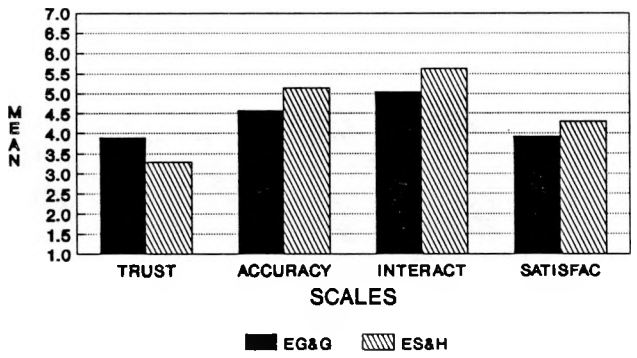
COMPARISON OF OVERALL MEANS FOR DOE ON COMMUNICATION SCALES TO MEANS FOR THE OTM DEPARTMENT



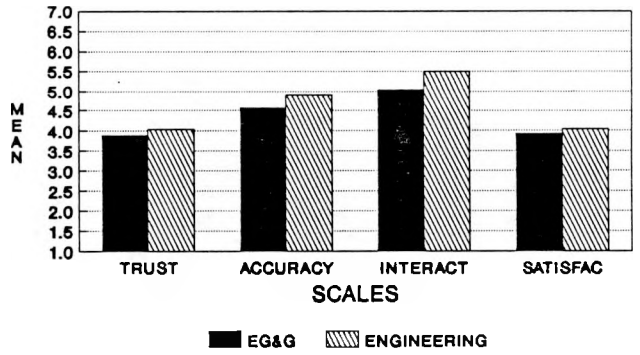
APPENDIX R

COMPARISON OF EG&G DEPARTMENTS TO THE OVERALL EG&G MEAN VALUES ON THE COMMUNICATION SCALES

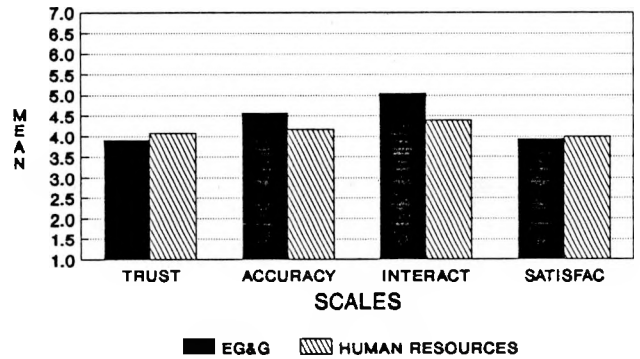
COMPARISON OF OVERALL MEANS FOR EG&G ON COMMUNICATION SCALES TO MEANS FOR THE ES&H SERVICES



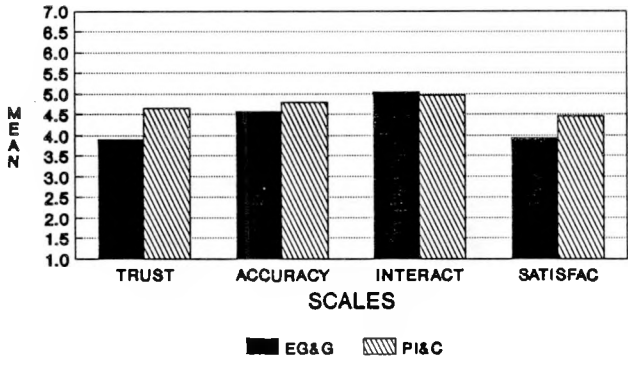
COMPARISON OF OVERALL MEANS FOR EG&G ON COMMUNICATION SCALES TO MEANS FOR THE ENGINEERING SERVICES



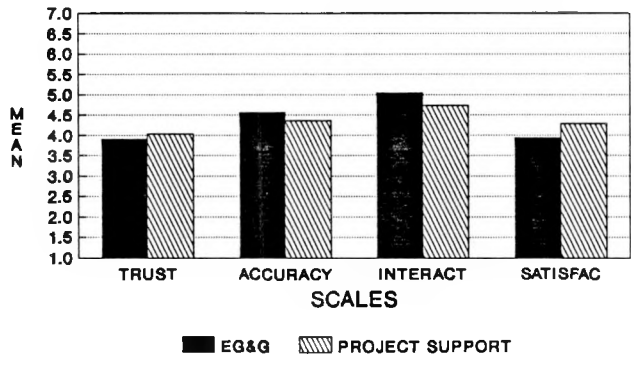
COMPARISON OF OVERALL MEANS FOR EG&G ON COMMUNICATION SCALES TO MEANS FOR THE HUMAN RESOURCES DEPARTMENT



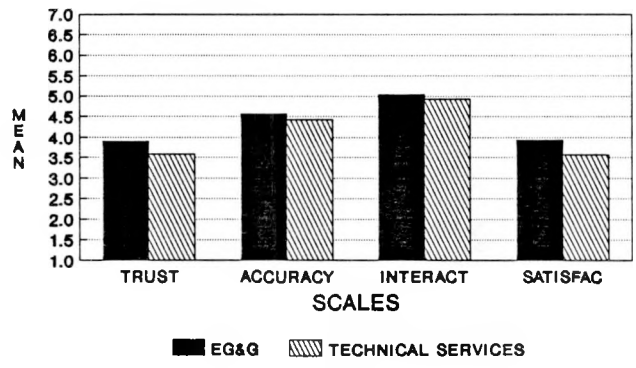
COMPARISON OF OVERALL MEANS FOR
EG&G ON COMMUNICATION SCALES TO MEANS
FOR THE PROGRAM INTEGRATION & CONTROL



COMPARISON OF OVERALL MEANS FOR
EG&G ON COMMUNICATION SCALES TO MEANS
FOR THE PROJECT SUPPORT DEPARTMENT



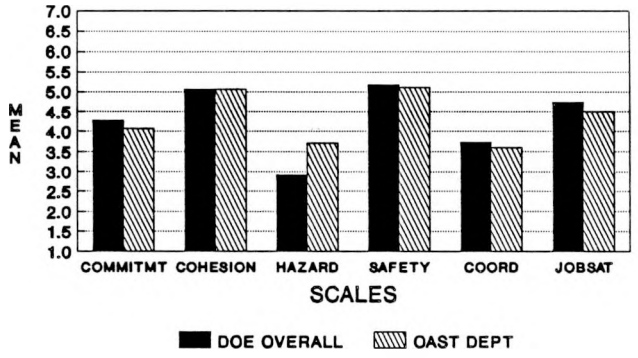
COMPARISON OF OVERALL MEANS FOR
EG&G ON COMMUNICATION SCALES TO MEANS
FOR THE TECHNICAL SERVICES DEPARTMENT



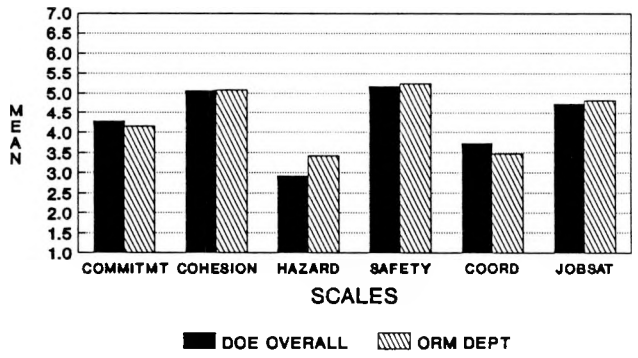
APPENDIX S

COMPARISON OF DOE DEPARTMENTS TO THE OVERALL DOE MEAN VALUES ON THE ADDITIONAL SCALES

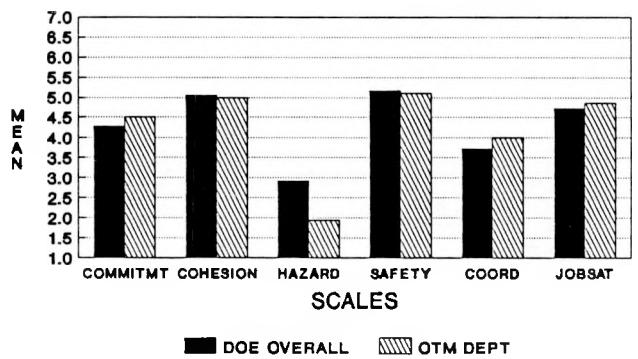
COMPARISON OVERALL MEANS FOR
OAST ON ADDITIONAL SCALES TO
MEANS FOR THE OAST DEPARTMENT



COMPARISON OVERALL MEANS FOR
DOE ON ADDITIONAL SCALES TO
MEANS FOR THE ORM DEPARTMENT



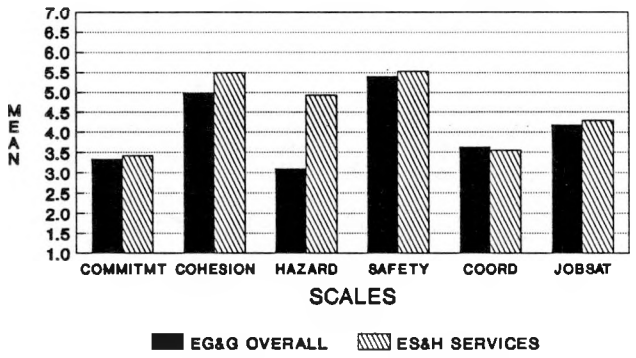
COMPARISON OVERALL MEANS FOR
DOE ON ADDITIONAL SCALES TO
MEANS FOR THE OTM DEPARTMENT



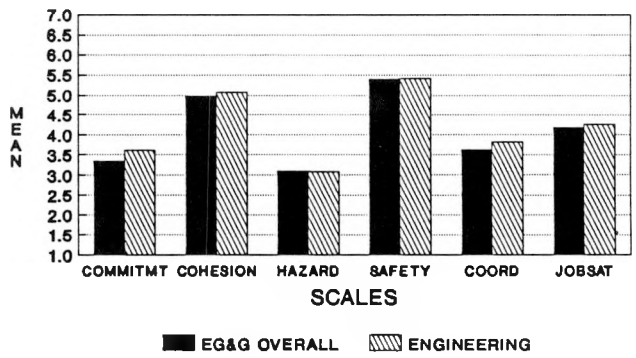
APPENDIX T

COMPARISON OF EG&G DEPARTMENTS TO THE OVERALL EG&G MEAN VALUES ON THE ADDITIONAL SCALES

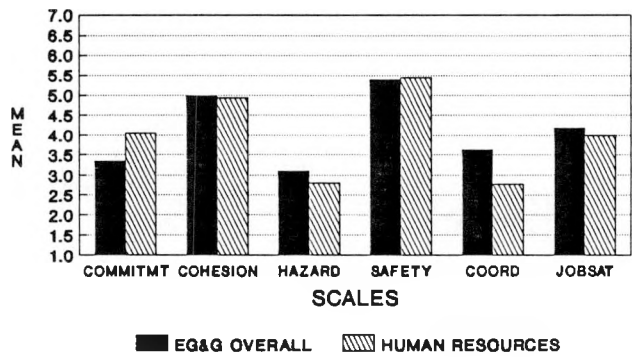
COMPARISON OF OVERALL MEANS FOR EG&
ON ADDITIONAL SCALES TO MEANS FOR
THE ES&H SERVICES DEPARTMENT



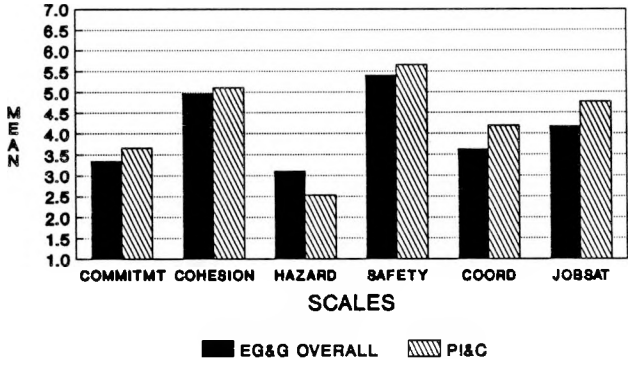
COMPARISON OF OVERALL MEANS FOR EG&
ON ADDITIONAL SCALES TO MEANS FOR
THE ENGINEERING SERVICES DEPARTMENT



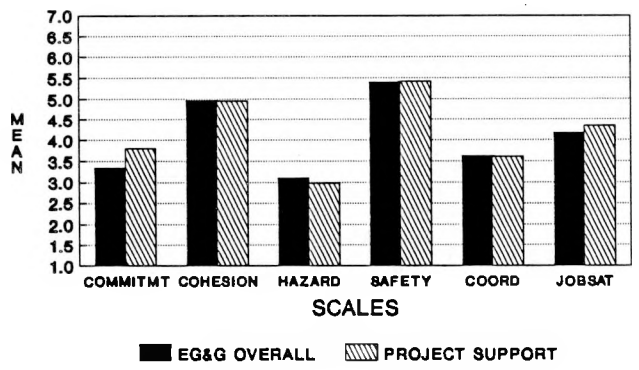
COMPARISON OF OVERALL MEANS FOR
EG&G ON ADDITIONAL SCALES TO MEANS
FOR THE HUMAN RESOURCES DEPARTMENT



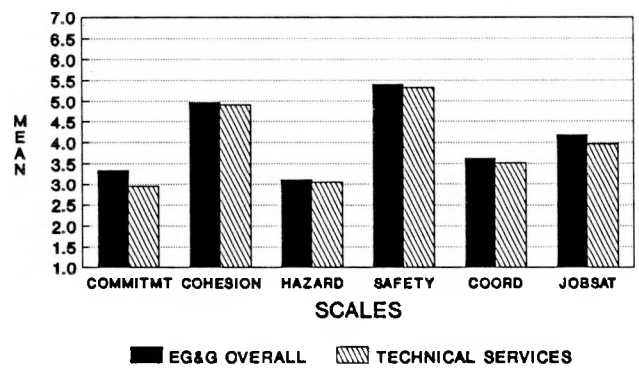
COMPARISON OF OVERALL MEANS FOR
EG&G ON ADDITIONAL SCALES TO MEANS
FOR THE PROGRAM INTEGRATION & CONTROL



COMPARISON OF OVERALL MEANS FOR
EG&G ON ADDITIONAL SCALES TO MEANS
FOR THE PROJECT SUPPORT DEPARTMENT



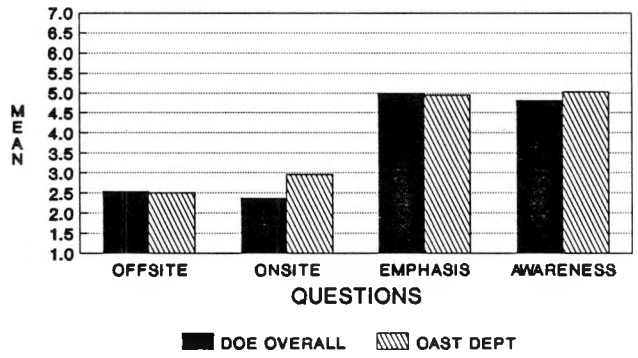
COMPARISON OF OVERALL MEANS FOR
EG&G ON ADDITIONAL SCALES TO MEANS
FOR THE TECHNICAL SERVICES DEPARTMENT



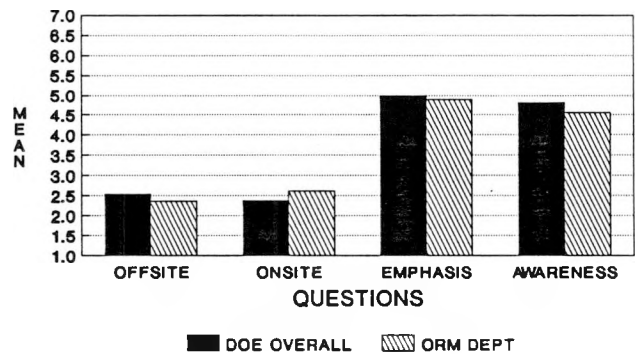
APPENDIX U

COMPARISON OF DOE DEPARTMENTS TO THE OVERALL DOE MEAN VALUES ON THE ENVIRONMENTAL, SAFETY, AND HEALTH QUESTIONS

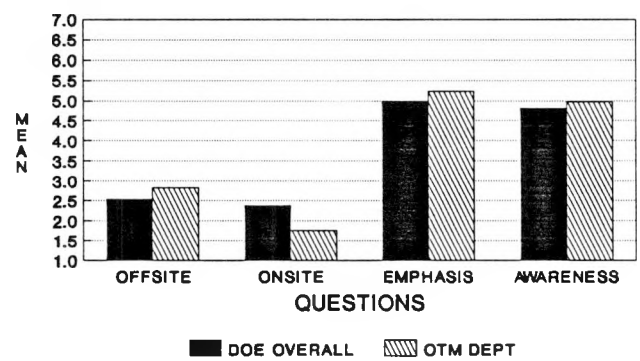
COMPARISON OF OVERALL DOE MEANS
ON ENVIRONMENT, SAFETY, AND HEALTH
QUESTIONS TO OAST DEPARTMENT MEANS



COMPARISON OF OVERALL DOE MEANS
ON ENVIRONMENT, SAFETY, AND HEALTH
QUESTIONS TO ORM DEPARTMENT MEANS



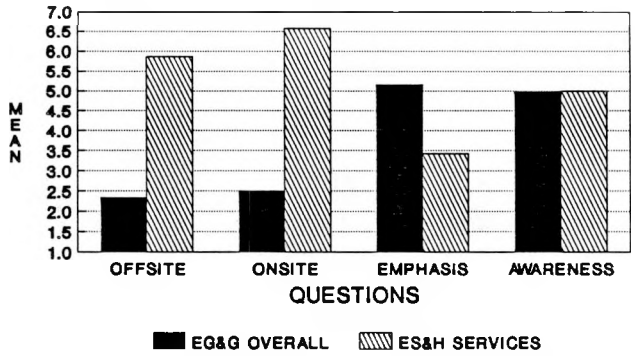
COMPARISON OF OVERALL DOE MEANS
ON ENVIRONMENT, SAFETY, AND HEALTH
QUESTIONS TO OTM DEPARTMENT MEANS



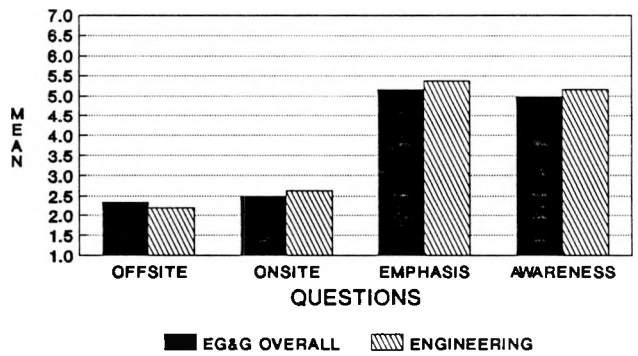
APPENDIX V

COMPARISON OF EG&G DEPARTMENTS TO THE OVERALL EG&G MEAN VALUES ON THE ENVIRONMENTAL, SAFETY, AND HEALTH QUESTIONS

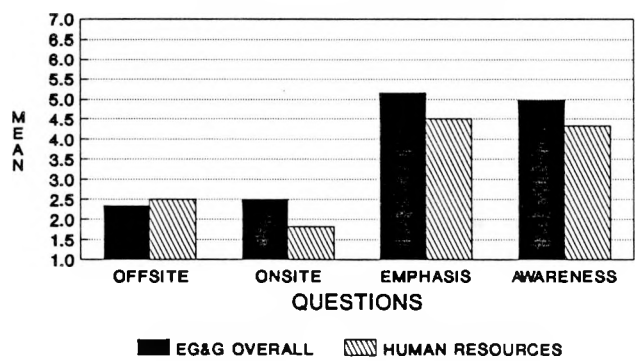
COMPARISON OF OVERALL EG&G MEANS ON ENVIRONMENT, SAFETY, AND HEALTH QUESTIONS TO ES&H SERVICES



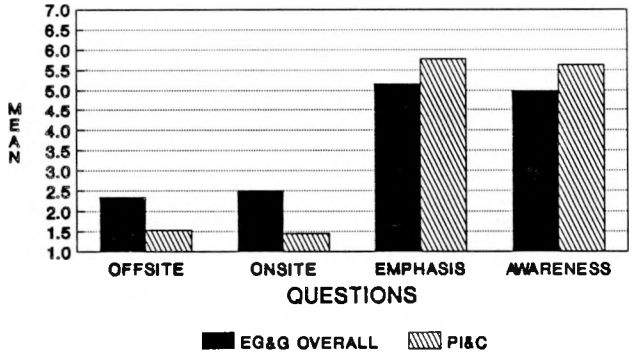
COMPARISON OF OVERALL EG&G MEANS ON ENVIRONMENT, SAFETY, AND HEALTH QUESTIONS TO ENGINEERING SERVICES



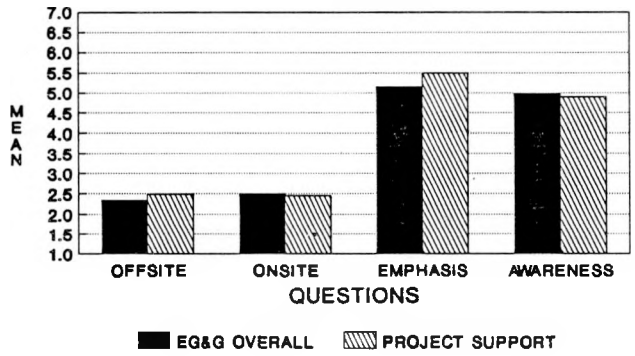
COMPARISON OF OVERALL EG&G MEANS ON ENVIRONMENT, SAFETY, AND HEALTH QUESTIONS TO HUMAN RESOURCES



COMPARISON OF OVERALL EG&G MEANS ON ENVIRONMENT,SAFETY,HEALTH QUESTIONS TO PROGRAM INTEGRATION AND CONTROL



COMPARISON OF OVERALL EG&G MEANS ON ENVIRONMENT, SAFETY, AND HEALTH QUESTIONS TO PROJECT SUPPORT



COMPARISON OF OVERALL EG&G MEANS ON ENVIRONMENT, SAFETY, AND HEALTH QUESTIONS TO TECHNICAL SERVICES