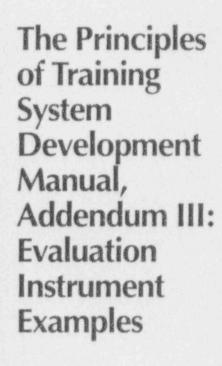
GENERAL DISTRIBUTION

September 1993 ACAD 88-002 (Addendum III) ACADEMY DOCUMENT





9404200208 930930 PDR DRG EPSINPO PDR GENERAL DISTRIBUTION

September 1993 ACAD 88-002 (Addendum III) ACADEMY DOCUMENT

The Principles of Training System Development Manual, Addendum III: Evaluation Instrument Examples



9404200208 930930 PDR DRG EPSINPO

PRINCIPLES OF TRAINING SYSTEM DEVELOPMENT ADDENDUM III EVALUATION INSTRUMENT EXAMPLES

September 1993 ACAD 88-002

NATIONAL ACADEMY FOR NUCLEAR TRAINING

Plant Area: Training and Qualification

Key Words: Evaluation Instructions, Evaluations

The National Academy for Nuclear Training operates under the auspices of the Institute of Nuclear Power Operations (INPO). The Academy provides a framework for a unified, coordinated industry approach to achieving and maintaining effective training and qualification. It also promotes pride and professionalism of nuclear plant personnel. The Academy integrates the training efforts of all U.S. nuclear utilities, the activities of the National Nuclear Accrediting Board, and the training-related activities of INPO.

GENERAL DISTRIBUTION: Copyright © 1993 by the National Academy for Nuclear Training. Not for sale nor for commercial use. All other rights reserved.

0404700708

NOTICE: This information was prepared in connection with work sponsored by the Institute of Nuclear Power Operations (INPO). Neither INPO, INPO members, INPO participants, nor any person acting on the behalf of them (a) makes any warranty or representation, expressed or implied, with respect to the accuracy, completeness, or usefulness of the information contained in this document, or that the use of any information, apparatus, method, or process disclosed in this document may not infringe on privately owned rights, or (b) assumes any liabilities with respect to the use of, or for damages resulting from the use of any information, apparatus, method, or process disclosed in this document.

TABLE OF CONTENTS

SE	CTIO	N		Page
INT	ROD	UCTION		1
DIS	cus	SION		3
1.	Eva	aluation Consi	derations	3
2.	Pro	gram Evaluati	on Instruments	4
	2.1	Numerical Rat	ting Scale Format	4
		Example 1	Laboratory Instructor Evaluation	5
		Example 2	Instructor Performance Evaluation	9
		Example 3	Simulator Instructor Observation	17
		Example 4	Supervisor's Post-training Feedback	23
		Example 5	Trainee Post-training Evaluation	25
	2.2	Questionnaire	Format	31
		Example 6	Trainee Feedback Evaluation	33
		Example 7	End-of-course Training Evaluation	35
		Example 8	Training Program Evaluation	37
	2.3	Checklist form	at	47
		Example 9	Instructor Observation Checklist	49
		Example 10	Training Development Recommendation Checklist	53
SU	MMA	RY		57
RE	FERI	ENCES		59

INTRODUCTION

The development and use of job performance-based training programs in the nuclear utility industry requires substantial time and financial resources. To ensure that the training programs have been properly designed and developed and are effective in meeting their intended purpose, they must be evaluated on a regular basis and revised as necessary. A complete nuclear utility training program includes evaluation as an integral part of maintaining and improving effective training.

The purpose of this addendum is to provide examples of program evaluation instruments that support the assessment of the indicators described in Principles of Training System Development (TSD), INPO 85-006, February 1985. The systematic evaluation of training effectiveness is also covered in Objective 4 in Maintaining the Accreditation of Training in the Nuclear Power Industry, INPO 88-001, March 1988.

A variety of evaluation instruments can be used to assess the various aspects of training programs. General guidance for developing evaluation instruments and examples is included in this addendum. The examples illustrate methods and techniques that can be used. These Instruments are not intended to be used "as is", but they provide guidance for training evaluation instrument development. The references at the end of this addendum provide additional information on the development and use of program evaluation instruments and discuss the analysis of evaluation results.

DISCUSSION

1. EVALUATION CONSIDERATIONS

Training evaluation determines a training program's effectiveness in meeting its intended purpose, which mainly is producing competent employees. Program evaluation focuses on the results of the training program and <u>not</u> on the process of training. The key to conducting an effective training evaluation is to first identify the questions to be answered by the evaluation. Should the program be modified? What performance gains are being realized? Is the need for training being addressed in the best way possible? The purposes of an evaluation might include the following:

- to determine if a program is accomplishing its objectives
- to identify the strengths and weaknesses of a particular training program
- · to identify which trainees benefited the most, or the least, from a training program
- to determine if a trainee's performance on a simulator was satisfactory
- . to determine if a program was appropriate for its intended purpose and target population

Training evaluations should be conducted in all settings (classroom, laboratory, simulator, and on-the-job training) and at various times (during training, immediately after training, three to six months after training, etc.). The specific setting and time usually are controlled by the purpose of the training evaluation.

"What type of training data is needed?" and "What training setting is being evaluated?" are two questions that will help determine when the evaluation is conducted. For example, information on needs analysis and the development process is best collected before the training is conducted. However, instructional quality data may be collected during instruction, immediately after instruction, and three to six months after training is accomplished.

How data is collected is influenced by the type of evaluation instrument used and by the training being evaluated. Interviews allow the interviewer to adjust the questions to the situation and to probe deeper into areas of interest or concern. This activity can be labor-intensive depending on the number of individuals to be interviewed. Personal interviews may be necessary when collecting feedback concerning the effectiveness of training on a new procedure or plant modification. A training survey conducted indirectly (such as by mail) may be appropriate when collecting only opinions. Surveys typically use a fixed set of questions and are less labor-intensive than interviews. Task observation may be most effective when collecting trainee performance data three to six months after training has taken place. Task observations may be time-consuming, and their effectiveness depends on when the task is performed and the expertise of the observer.

Why training evaluations are being conducted also influences the type of instrument used, the training setting observed, and when the evaluation is performed. If the goal of the evaluation is to determine training effectiveness in terms of trainee performance on the job, then an interview survey instrument or an observation instrument would be appropriate.

Both instruments should address trainee performance at the task or training program objective level and should be conducted approximately three to six months after training.

2. PROGRAM EVALUATION INSTRUMENTS

Training evaluation instruments can take a variety of forms. Regardless of the material, process, or program being evaluated, general principles should be followed to construct an evaluation instrument. Common formats for many evaluation instruments include checklists, numerical rating scales, and questionnaires.

In the discussion that follows, guidance for developing evaluation instruments is presented. Examples of evaluation instruments that may be used to evaluate the indicators discussed in the Training System Development Manual are provided.

2.1 Numerical Rating Scale Format

A numerical rating scale can be used to evaluate a trainee's performance on many tasks, group interactions, and instructor performance or to collect feedback from plant management on trainee performance. For example, numerical scales can be used to collect post-training feedback from trainees and supervisors and to conduct instructional setting evaluations.

The following guidance can be helpful when constructing numerical rating scales:

- Select the performance to be evaluated.
- · Determine the response scale.
- · Define the points on the scale.

The following examples can be used to collect evaluation data on instructor performance, supervisor post-training feedback, and trainee post-training feedback. These models do not encompass all training activities, and they should be revised to reflect your training and plant organizational needs.

- Example 1, Laboratory Instructor Evaluation
- Example 2, Instructor Performance Evaluation
- Example 3, Simulator Instructor Evaluation
- Example 4, Supervisor's Post-training Feedback
- · Example 5, Trainee Post-training Evaluation

EXAMPLE 1

LABORATORY INSTRUCTOR EVALUATION

LESSON TITLE:	DATE:
INSTRUCTOR:	LENGTH OF OBSERVATION:
OBSERVED BY:	TITLE:
REVIEWED BY:	DATE:

Instructions: Below is a list of competency statements that laboratory instructors should use to contribute to the learning process. Read each statement and evaluate the instructor's performance by circling the appropriate rating next to the statement. Written comments for all ratings are encouraged. Comments are required for "unsatisfactory" and "needs improvement" ratings. Space is available to the right of each rating.

EXPLANATION OF RATINGS

0	Not Observed	activity not observed by the evaluator
1.	Unsatisfactory	failed to perform the required activity
2	Needs Improvement	performed most essential activities properly
3	Satisfactory	performed all essential activities properly
4	Above Average	performed all requirements and exceeds on several
5	Outstanding	consistently exceeded requirements

LABORATORY INSTRUCTOR EVALUATION

GEN	IERAL INSTRUCTIONAL TECHNIQUES							COMMENTS
1.	Objectives were stated and discussed prior to performance.	0	1	2	3	4	5	
2.	Instructor followed the lab guide (content and time).	0	1	2	3	4	5	
3.	Instructor actively assisted trainees during lab sessions.	0	1	2	3	4	5	
4.	Instructor identified and corrected trainee knowledge and skill weaknesses.	0	1	2	3	4	5	
5.	Instructor used trainee responses and other situations as opportunities to teach and reinforce concepts.	0	1	2	3	4	5	
6.	Instructor projected interest and enthusiasm for the session.	0	1	2	3	4	5	
7.	Instructor listened to the trainees and responded to their questions and needs.	0	1	2	3	4	5	
8.	Instructor adjusted the pace to the level of trainees' knowledge and ability.	0	1	2	3	4	5	
9.	Instructor's movements and gestures were appropriate (not distracting).	0	1	2	3	4	5	
10.	Instructor maintained vocal variety (avoided monotone).	0	1	2	3	4	5	

LABORATORY INSTRUCTOR EVALUATION

GEN	IER/	AL INSTRUCTIONAL TECHNIQUES CO	ntinu	ed					COMMENTS
11.	dis	structor avoided using stracting vocal mannerisms ad-uh, you know, o.k.).	0	1	2	3	4	5	
12.	act	e instructor summarized tivities at the end of the ssion.	0	1	2	3	4	5	
13.	ans	structor solicited and swered unresolved trainee estions at the end of ssion.	0	1	2	3	4	5	
I had been considered	2000	EDGE OF SUBJECT MATTER aluated by subject matter expert)							
1.	info	tructor explained technical ormation clearly and noisely.	0	1	2	3	4	5	
2.	diffe	e instructor pointed out erences that may exist ween the lab and actual nt procedures and equipment.	0	1	2	3	4	5	
3.		e questions required the nees to							
	a.	think through causes and effects of laboratory steps	0	1	2	3	4	5	
	b.	think through plant conditions, activities, causes, and responses	0	1	2	3	4	5	
	c.	integrate knowledge (theory, systems, procedures, tech specs/bases, etc.	0	1	2	3	4	5	

LABORATORY INSTRUCTOR EVALUATION

GENERA', INSTRUCTIONAL TECHNIQUES

COMMENTS

KNOWLEDGE OF SUBJECT MATTER (continued)

(to be evaluated by subject matter expert)

- The instructor effectively incorporated the theory of plant operations and industry operating experiences into the laboratory training.
- 0 1 2 3 4 5
- Enough time was spent on exercises.
- 0 1 2 3 4 5

ADDITIONAL COMMENTS:

EXAMPLE 2

INSTRUCTOR PERFORMANCE EVALUATION

LESSON TITLE:	DATE:
INSTRUCTOR:	LENGTH OF OBSERVATION:
OBSERVED BY:	TITLE:
REVIEWED BY:	DATE:

Instructions: Below is a list of competency statements that instructors should use to contribute to the learning process. Read each statement and evaluate the instructor's performance by circling the appropriate rating next to the statement. Written comments for all ratings are encouraged. Comments are required for "unsatisfactory" and "needs improvement" ratings. Space is available to the right of each rating.

EXPLANATION OF RATINGS

0 - Not Observed	activity not observed by the evaluator
1 - Unsatisfactory	failed to perform the required activity
2 - Needs Improvement	performed most essential activities properly
3 - Satisfactory	performed all essential activities properly
4 - Above Average	performed all requirements and exceeded on several
5 - Outstanding	consistently exceeded requirements

MAT	TERIALS							COMMENTS
1.	The student handout is organized in a logical manner.	0	1	2	3	4	5	
2.	The training material is current and technically accurate.	0	1	2	3	4	5	
3.	The training material relates to the learning objectives.	0	1	2	3	4	5	
4.	When used, the industry events examples are appropriate.	0	1	2	3	4	5	
CON	DUCT OF CLASS							
Prep	paration							
i.	Classroom physical layout enhanced the learning climate.	0	1	2	3	4	5	
2.	The instructor appeared adequately prepared.	0	1	2	3	4	5	
Intro	duction							
1.	Started class on time.	0	1	2	3	4	5	
2.	Provided student hand- outs to the students.	0	1	2	3	4	5	
3.	Stated the purpose of lecture.	0	1	2	3	4	5	
4.	Reviewed the objectives for the class session.	0	1	2	3	4	5	

CONDUCT OF CLASS continued COMMENTS 5. Stated a problem to be solved or discussed during the class. 0 1 2 3 Made explicit the relationship between current subject matter and previous classes. 0 1 2 3 Presentation Arranged and discussed the content in a systematic and organized fashion. Defined new terms. concepts, and principles. 3 3. Used clear, simple, and relevant examples to explain major ideas. 2 3 Related new ideas to familiar ones. Presented information at an appropriate level of detail. 2 3 Used alternate explanations when necessary. Stated the relationship among various ideas in the presentation. 0 1 2 3 Asked questions to determine if information was presented at a proper rate. 0 1 2 3

Pres	sentation continued							COMMENTS
9.	Periodically summarized the important ideas.	0	1	2	3	4	5	
10.	Reiterated definitions of new terms to help students become accustomed to them.	0	1	2	3	4	5	
11.	Exhibited a level of know- ledge adequate to teach the training material.	0	1	2	3	4	5	
12.	Displayed a positive attitude.	0	1	2	3	4	5	
13.	Demonstrated confidence during the class presentation.	0	1	2	3	4	5	
14.	Developed a positive rapport with the students.	0	1	2	3	4	5	
CON	MMUNICATION SKILLS							
Vert	pal							
1.	Voice could be easily heard.	0	1	2	3	4	5	
2.	Voice was raised or lowered for variety and emphasis.	0	1	2	3	4	5	
3.	Speech was neither too formal nor too casual.	0	1	2	3	4	5	
4.	Rate of speech was neither too fast nor too slow.	0	1	2	3	4	5	
5.	Varied the pace of the presentation to keep the students alert.	0	1	2	3	4	5	

Vert	<u>oal</u> continued							COMMENTS
6.	Spoke at a rate that allowed students time to take notes.	0	1	2	3	4	5	
7.	Facilitated discussions effectively.	0	1	2	3	4	5	
Non	-Verbal							
1.	Established and maintained eye contact with the entire class.	0	1	2	3	4	5	
2.	Listened carefully to student comments and questions.	0	1	2	3	4	5	
3.	Appearance was proper.	0	1	2	3	4	5	
4.	Instructor was enthusiastic about the material presented.	0	1	2	3	4	5	
5.	Noted and responded to signs of puzzlement, boredom, and curiosity of the student.	0	1	2	3	4	5	

QUESTIONING ABILITY COMMENTS Asking Questions 1. Asked questions to determine what the students know about the lecture topic. 2 3 2. Asked questions that allowed the instructor to gauge student progress. 3. Addressed questions to individual students as well as to the group at large. 2 3 4. Encouraged students to answer difficult questions by providing clues or rephrasing. 2 5. involved as many students as possible in the classroom discussion. 6. When necessary, asked students to clarify their questions. 2 3 5 Asked probing questions if a student's answer was incomplete or superficial. 8. Repeated answers when necessary so the entire class could hear. 2

Ansı	wering Questions							COMMENTS
1.	Encouraged student questions.	0	1	2	3	4	5	
2.	Received student questions politely and, when possible, enthusiastically.	0	1	2	3	4	5	
3.	Answered students' questions satisfactorily.	0	1	2	3	4	5	
4.	Repeated student's question when necessary.	0	1	2	3	4	5	
AUD	DIO/VISUAL AIDS							
1.	Used visual aids to enhance the learning objectives.	0	1	2	3	4	5	
2.	Transparencies were clear and easy to read.	0	1	2	3	4	5	
3.	Board work appeared organized and legible.	0	1	2	3	4	5	
4.	Demonstration performed could be seen by all students.	0	1	2	3	4	5	
5.	Student handout was used effect- ively by the instructor.	0	1	2	3	4	5	

SUMMARY									COMM	ENTS	
The instructo summarized of the present	the key points	0		1	2	3	4	5			
2. The students class are able the skills or a knowledge the during the ob-	e to perform pply the at was taught	O)	1	2	3	4	5			
3. The training a by the instruction the highest seexcellence.	ctor reflects	C)	1	2	3	4	5			

ADDITIONAL COMMENTS:

EXAMPLE 3

SIMULATOR INSTRUCTOR OBSERVATION

LESSON TITLE:	DATE:
INSTRUCTOR:	LENGTH OF OBSERVATION:
OBSERVED BY:	TITLE:
REVIEWED BY:	DATE:

Instructions: Below is a list of competency statements describing requirements that simulator instructors should fulfill to contribute to the learning process. Read each statement and evaluate the instructor's performance by checking the appropriate rating next to the statement. Written comments for all ratings are encouraged. Comments are required for "unsatisfactory" and "needs improvement" ratings. Space is available to the right of each rating.

EXPLANATION OF RATINGS

0 - Not Observed	activity not observed by the evaluator
1 - Unsatisfactory	failed to perform the required activity
2 - Needs Improvement	performed most essential activities properly
3 - Satisfactory	performed all essential activities properly
4 - Above Average	performed all requirements and exceeded on several
5 - Outstanding	consistently exceeded requirements

CON	IDUCT OF TRAINING							COMMENTS
1.	The objectives were clearly stated.	0	1	2	3	4	5	
2.	The simulator was set up properly.	0	1	2	3	4	5	
3.	Pre-training briefings addressed the following:	0	1	2	3	4	5	
	 plant conditions, history, operating orders 							
	known simulator/plant differences							
	turnover/walkdown of plant							
4.	Control room atmosphere in demeanor and attitude were maintained.	0	1	2	3	4	5	
5.	Trainees were required to use proper communication skills.	0	1	2	3	4	5	
6.	Objectives for the class session were reviewed.	0	1	2	3	4	5	
7.	Malfunctions were initiated properly.	0	1	2	3	4	5	
8.	Simulator training time was used effectively.	0	1	2	3	4	5	
9.	The instructor's console was operated correctly.	0	1	2	3	4	5	
10.	Instructor displayed a positive attitude.	0	1	2	3	4	5	

QUE	STIONING TECHNIQUES							COMMENTS
1.	Asked questions to determine what the students knew about the session topic.	0	1	2	3	4	5	
2.	Asked questions that allowed the instructor to evaluate the student's progress.	0	1	2	3	4	5	
3.	Handled incorrect responses appropriately.	0	1	2	3	4	5	
4.	Asked questions to determine whether too much or too little information was being presented.	0	1	2	3	4	5	
INST	RUCTIONAL SKILLS							
1,	Presentation was well organized.	0	1	2	3	4	5	
2.	The instructor demonstrated and exhibited good coaching/ assisting techniques.	0	1	2	3	4	5	
3.	The instructor used alternate approaches to enhance learning.	0	1	2	3	4	5	
4.	The instructor effectively used "freeze" to enhance learning.	0	1	2	3	4	5	
5.	The instructor met the session objectives.	0	1	2	3	4	5	

TECHNICAL KNOWLEDGE COMMENTS (NO FE: This section to be evaluated by a subject matter expert.) Demonstrated knowledge of reactor operator, senior reactor operator, and shift supervisor positions. 2 Focused presentation on level of learners' understanding. 3. Emphasized operator professionalism. Demonstrated familiarity with plant procedures/reference material. Emphasized and reinforced team skills. Developed and emphasized diagnostic skills. Exhibited a level of knowledge adequate to teach the training material. CRITIQUE SKILLS Post-training critiques facilitate individual students to critique themselves. 2. Post-training critiques required the team to critique themselves. The instructor summarized the 3. simulator session.

CRI	TIQUE SKILLS continued							COMMENTS
4.	Post-training critique addressed	0	1	2	3	4	5	
	exercise-specific performance objectives							
	generic performance objectives							
	 plant operating standards and practices 							
5.	Critique resulted in operator commitment to reinforce positive performance.	0	1	2	3	4	5	
6.	Critique resulted in performance needing improvement, being changed.	0	1	2	3	4	5	

ADDITIONAL COMMENTS:

EXAMPLE 4

SUPERVISOR'S POST-TRAINING FEEDBACK

NAME:	DATE:	t.
COURSE/PROGRAM TITLE:		
REVIEWED BY:	DATE:	90

This post-training evaluation is designed to obtain information that will maintain and improve the quality of our training programs. Based upon your observations of the trainees' job performance, rate the trainee on each of the listed tasks by circling the appropriate number.

REMEMBER: The rating should be based on performance of tasks that were trained on during the course or program.

TASK STATEMENT: Initiate a chemical item classification permit as the requestor.

- Unacceptable trainee performance: Trainee unable to perform task due to lack of knowledge and/or ability.
- Poor trainee performance (partially competent): Trainee performed task with a marginal display of knowledge and/or ability.
- Adequate trainee performance (competent): Trainee performed task with a sufficient display of knowledge and/or ability.
- Very competent trainee performance: Trainee performed task with a good display of knowledge and/or ability.
- Extremely competent trainee performance: Trainee performed task with an outstanding display of knowledge and/or ability.

TASK STATEMENT: Remove protective (anti-contamination) clothing.

- Unacceptable trainee performance: Trainee unable to perform task due to lack of knowledge and/or ability.
- Poor trainee performance (partially competent): Trainee performed task with a marginal display of knowledge and/or ability.
- Adequate trainee performance (competent): Trainee performed task with a sufficient display of knowledge and/or ability.
- Very competent trainee performance: Trainee performed task with a good display of knowledge and/or ability.
- Extremely competent trainee performance: Trainee performed task with an outstanding display of knowledge and/or ability.

SUPERVISOR'S POST-TRAINING FEEDBACK

TASK STATEMENT: Perform a locked, high-radiation area/exclusion area entry/exit.

- Unacceptable trainee performance: Trainee unable to perform task due to lack of knowledge and/or ability.
- Poor trainee performance (partially competent): Trainee performed task with a marginal display of knowledge and/or ability.
- Adequate trainee performance (competent): Trainee performed task with a sufficient display of knowledge and/or ability.
- Very competent trainee performance: Trainee performed task with a good display of knowledge and/or ability.
- Extremely competent trainee performance: Trainee performed task with an outstanding display of knowledge and/or ability.

TASK STATEMENT: Perform equipment/tool/area decontamination.

- Unacceptable trainee performance: Trainee unable to perform task due to lack of knowledge and/or ability.
- Poor trainee performance (partially competent): Trainee performed task with a marginal display of knowledge and/or ability.
- Adequate trainee performance (competent): Trainee performed task with a sufficient display of knowledge and/or ability.
- Very competent trainee performance: Trainee performed task with a good display of knowledge and/or ability.
- Extremely competent trainee performance: Trainee performed task with an outstanding display of knowledge and/or ability.

NOTE: This example shows only four task statements. An evaluation should be made for each application to determine the appropriate number of tasks.

EXAMPLE 5

TRAINEE POST-TRAINING EVALUATION

NAME:					DATE:				
C	OURSE/PROG	RAM TITLE:			1.00				
D	ATE(S) OF TR	AINING:							
RI	EVIEWED BY:				ATE:				
th kn fo ra	at will maintain now about your llowing perform ting scales.	and improve job in relation nance objective	the quality of our n to the training y yes/task statemen	r training prog ou received in nts by circling	rams. Based this course, p the appropriat	e number on the			
			ct survelllance t ded knowledge o		ment isolation	n valves.			
		N/A Not Applicable does not apple to my job		and procused to co	2 1 plus the edures used omplete the task	#1 and #2 plus the operating principles in- volved in per- forming the task			
2.	Performance-1	raining provid	ed the skills neede	d to perform					
		N/A Not Applicabl does not app to my job		sk	2 the task with upervision	3 the task without supervision			
3.	Job Relatednes	s-Tasks traine	ed on related to my	/ job					
	N/A Not Applicable, does not apply to my job	Applies very little to my job	2 Applies somewhat to my job	3 Applies to about half of my job	4 Applies to most of my job	5 Applies to all of my job			
١.	Job Preparedne	essLevel of ta	sk training prepare	ed me for my jo	ob				
	N/A Not Applicable, does not apply to my job	Prepared me very little for my job	2 Prepared me somewhat for my job	3 Prepared me for about half of my job	Prepared me to do most of my job	5 Prepared me to do all of my job			

TRAINEE POST-TRAINING EVALUATION

TASK STATEMENT: Calibrate and maintain source range monitor.

1. Knowledge-Training provided knowledge of

N/A Not Applicable, does not apply to my job

parts, tools, equipment, and simple facts used on the job #1 plus the procedures used to complete the task

#1 and #2 plus the operating principles involved in performing the task

2. Performance-Training provided the skills needed to perform

N/A Not Applicable, does not apply to my job simple parts of the task supervision

the task with supervision the task without

3. Job Relatedness--Tasks trained on related to my job

N/A Not Applicable, does not apply to my job

Applies very little to my job Applies somewhat to my job

Applies to about half of my job

Applies to most of my job Applies to all of my job

4. Job Preparedness--Level of task training prepared me for my job

N/A Not Applicable, does not apply to my job

Prepared me very little for my job Prepared me somewhat for my job

Prepared me for about half of my job Prepared me to do most of my job 5 Prepared me to do all of my job

TASK STATEMENT: Tag defective equipment/tools.

1. Knowledge--Training provided knowledge of

N/A Not Applicable, does not apply to my job

parts, tools equipment, and simple facts used on the job #1 plus the procedures used to complete the task 3 #1 and #2 plus the operating principles involved in performing the task

2. Performance--Training provided the skills needed to perform

N/A Not Applicable, does not apply to my job simple parts of the task the task with supervision 3 the task without supervision

TRAINEE POST-TRAINING EVALUATION

3. Job Relatedness-Tasks trained on related to my job

N/A	1	2	3	4	5
Not Applicable,	Applies very	Applies	Applies to	Applies to	Applies to
does not apply	little to my	somewhat to	about half	most of my	all of my
to my job	job	my job	of my job	job	job

4. Job Preparedness--Level of task training prepared me for my job

N/A	1	2	3	4	5
Not Applicable,	Prepared me	Prepared me	Prepared me	Prepared me	Prepared me
does not apply to my job	very little for my job	somewhat for my job	for about half of my job	to do most of my job	to do all of my job
to my jou	for my jou	my jour	or my jou	or my lon	mi mil ban

TASK STATEMENT: Maintain fire detection systems.

1. Knowledge-Training provided knowledge of

N/A	1	2	3
Not Applicable, does not apply to my job	parts, tools equipment, and simple facts used on the job	#1 plus the procedures used to complete the task	#1 and #2 plus the operating principles in- volved in per- forming the task

2. Performance--Training provided the skills needed to perform

N/A	1	2	3
Not Applicable,	simple parts	the task	the task
does not apply	of the task	with	without
to my job		supervision	supervision

3. Job Relatedness--Tasks trained on related to my job

N/A	1	2	3	4	5
Not Applicable,	Applies very	Applies	Applies to	Applies to	Applies to
does not apply	little to my	somewhat to	about half	most of my	all of my
to my job	job	my job	of my job	job	job

4. Job Preparedness--Level of task training prepared me for my job

N/A	1	2	3	4	5
Not Applicable,	Prepared me	Prepared me	Prepared me	Prepared me	Prepared me
does not apply	very little	somewhat for	for about half	to do most	to do all
to my job	for my job	my job	of my job	of my job	of my job

TRAINEE POST-TRAINING EVALUATION

TASK STATEMENT: Perform wire wrapping.

1. Knowledge-Training provided knowledge of

N/A	1	2	3
Not Applicable, does not apply to my job	parts, tools equipment, and simple facts used on the job	#1 plus the procedures used to complete the task	#1 and #2 plus the operating principles in- volved in per- forming the task

2. Performance-Training provided the skills needed to perform

N/A	1	2	3
Not Applicable,	simple parts	tine task	the task
does not apply	of the task	with	without
to my job		supervision	supervision

3. Job Relatedness--Tasks trained on related to my job

N/A	1	2	3	4	5
Not Applicable,	Applies very	Applies	Applies to	Applies to	Applies to
does not apply	little to my	somewhat to	about half	most of my	all of my
to my job	job	my job	of my job	job	job

4. Job Preparedness--Level of task training prepared me for my job

N/A	1	2	3	4	5
Not Applicable,	Prepared me	Prepared me	Prepared me	Prepared me	Prepared me
does not apply	very little	somewhat for	for about half	to do most	to do all
to my job	for my job	my job	of my job	of my job	of my job

TASK STATEMENT: Test containment isolation.

1. Knowledge-Training provided knowledge of

N/A	1	2	3
iot Applicable, does not apply to my job	parts, tools equipment, and simple facts used on the job	#1 plus the procedures used to complete the task	#1 and #2 plus the operating principles in- volved in per- forming the task

TRAINED FOST-TRAINING EVALUATION

2. Performance-Training provided the skills needed to perform

N/A 1 2 3

Not Applicable, simple parts the task the task does not apply of the task with without to my job supervision supervision

3. Job Relatedness--Tasks trained on that are related to my job

N/A Applies to Applies Applies to Applies to Not Applicable, Applies very about half most of my all of my does not apply little to my somewhat to job job of my job job to my job my job

4. Job Preparedness--Level of task training prepared me for my job

2 3 5 N/A Prepared me Prepared me Not Applicable, Prepared me Prepared me Prepared me very little to do most to do all somewhat for for about half does not apply to my job for my job my job of my job of my job of my job

NOTE: This example shows six task statements. An evaluation should be made for each application to determine the appropriate number of tasks.

2.2 Questionnaire Format

A questionnaire format may be used to elicit opinions, obtain information, and collect feedback about the work or training environments. For example, questionnaires can be used to collect post-training feedback on initial or continuing training program effectiveness, to evaluate the proper scope of training program content, and to determine the effect of industry events and/or regulatory changes on the content of a training program.

The following guidance can be helpful when developing a questionnaire-type evaluation instrument:

- Define the purpose of the questionnaire. This can be done by determining what information is needed and where the information should be gathered.
- Determine the source of the evaluation questions to be used in the questionnaire. Questions can come from the managers and users of this information, previous observations and interview material, and other questionnaires that have been used for similar purposes.
- Determine the types of questions required on the questionnaire. Three different types of questions can be used.
 - Performance Questions These questions ask what has actually been performed. They are aimed at obtaining descriptions of actual experiences, activities, or actions where the corresponding performance would be observable if an evaluator were present.
 - Opinion Questions These questions ask for an individual's opinion about something. They are used to gather information concerning people's goals, intentions, desires, and values. This type of question can cause analysis problems because it usually requires agreement or disagreement on the part of the evaluator.
 - Knowledge Questions These questions are asked to determine the factual information an individual knows. Facts are not opinions, feelings, or actions but are considered knowledge or truths. Knowledge questions can elicit facts from recollection or can verify facts with a true/false answer.
- Write the questions. The questions should be clearly focused to aid the
 respondents in determining the information that is desired. Clear cues
 should be provided to help accomplish this. The questions should be
 formatted to be consistent with the type of information sought.

The following examples can be used to collect evaluation data for program development, on-the-job training (OJT), and simulator training. These models do not encompass all training activities, and they should be revised to reflect your training and plant organizational needs.

- · Example 6, Trainee Feedback Evaluation
- · Example 7, End-of-course Training Evaluation
- · Example 8, Training Program Evaluation

EXAMPLE 6

TRAINEE FEEDBACK EVALUATION

COL	JRSE/PROGRAM:	DATE:						Name and Advanced from		
NAN	ME (Optional):	INSTRUCTORS N	AN	ΛE:	part to the last					
REV	IEWED BY:	DATE:	DATE:							
Plea	se rate the following statements using	ng the following scale:								
	1 Strongly Disagree 2 Disagree 3 Neutral 4 Agree 5 Strongly Agree									
1.	Time allotted to each unit of instruwas about right.	otion	1	2	3	4	5			
2.	Examples, analogies, and topics in were relevant to your job needs.	training	1	2	3	4	5			
3.	Training aids, audio-visuals, and h were current, accurate, and releva job needs.		1	2	3	4	5			
4.	As a result of attending the progra you are better prepared to perform duties.		1	2	3	4	5			
5.	The classroom setting helped to pr	omote learning.	1	2	3	4	5			
6.	Plant specifics were taught where	needed.	1	2	3	4	5			
7.	The classroom training you receive to you in your understanding of pla		1	2	3	4	5			
8.	The information received in training and consistent with information received in the consistent with the c	The state of the s	1	2	3	4	5			
9.	The material was appropriate for y (participant position, responsibilities beginning knowledge level)		1	2	3	A	5			

TRAINEE FEEDBACK EVALUATION

- 10. Your questions were answered satisfactorily.

 1 2 3 4 5
- 11. Overall, the course/program was beneficial and will help me to better perform my job.

 1 2 3 4 5

ADDITIONAL COMMENTS:

EXAMPLE 7

END-OF-COURSE TRAINING EVALUATION

COURSE TITLE:				coul	COURSE DATE:							
INS	INSTRUCTOR:				TRAINEE JOB TITLE:							
RE	REVIEWED BY:					DATE:						
		ed your evaluation of the t ses to the statements belo	- 1 CHO 1 CHO 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				lease inc	dicate your				
1.	PR	OGRAM CONTENT	Always	Almost Always	Some- times	Never	Almost Never	Not Applicable				
	Α.	This training was relevant to my job.	[]	[]	11	(1	[]	[1				
	В.	The training was well organized.	11	[]	-[1	[]	[]	11				
	О.	The training objectives were clear to me.	[]	[]	[]	11	[]	[1]				
2.	TR	AINING MATERIAL										
	Α.	The information provided in texts and handouts was was adequate.	[]	[]	[]	[]	11	11				
	В.	The text and handout material were easy to use.	[]	11	[]	[]	[]	[]				
	C.	The visual aids were of good	11	11	11	11	1.1	1.1				

END-OF-COURSE TRAINING EVALUATION

			Always	Almost Always	Some-	Never	Almost Never	Not Applicable
3.	INS	TRUCTOR						T I P I S I S I S I S I S I S I S I S I S
	Α.	The instructor was knowledgeable about the course material.	- 11	11	[]	11	[]	11
	В.	The instructor communicated the training information well.	[]	11	[]	[]	[1	[1
	C.	The instructor kept me interested in the course.	11	[]	[]	[]	[]	[1
	D.	The instructor demonstrated enthusiasm for training and for the subject being taught.	[]	11	11	[]	[]	- 11
4. 1	TRAIN	ING METHODS						
	Α.	The lectures were well organized and provided informative discus- sion of training topics.	[]	11	[]	[]	11	()
	В.	Classroom discussion was encouraged.	11	[]	11	[]	11	()
	C.	Classroom discussions were useful for clarifying ideas.	[]	[]	11	[]	[]	[]
	D.	There were an adequate number of practical applications.	11	[]	[]	[]	[1	11
	E.	Practical applications were use ful in clarifying information.	[]	11	11	[]	[]	ti -
	F.	Enough time was spent on practical applications.	[]	[]	[]	[]	11	11
	G.	Exams and quizzes were relevant to the training.	[]	[]	[]	[]	[]	11
	Н.	Exams and quizzes reinforced the training material.	[]	11	[]	11	[]	11

EXAMPLE 8

PF	PROGRAM:PLANT:	
DA	DATE(S) CONDUCTED:	
E١	EVALUATOR(S):	
RE	REVIEWED BY: DATE:	
ev ob div Ex	In completing the step-by-step procedures of the program evaluation instrume evaluator(s) will be required to respond in various manners at each point in the objective and subjective data will be collected. The evaluator(s) should realize diversity of the program, some steps may not be applicable. These steps sho Examine the applicable training materials, and interview instructors, trainees, supervisors to answer the following questions.	ent, the e process. Both e that due to the uld be cited.
DE	DEVELOPMENT	
1.	Does a written job/task analysis exist for this program? Cite examples.	
2.	 Did training personnel and plant technical personnel participate in identifying and developing training programs? Describe the process. 	ng training needs
3.	 How was the job/task analysis used to provide the hasis for making decision program content? If a training task list or matrix has been developed for the attach a copy. 	

- Were trainee entry-level skills and knowledge given consideration when the program was developed? Discuss the considerations.
- Has the program been compared with the applicable INPO guidelines, taxonomy, and/or task listing? Describe the process.

6. Has the program been compared with current plant procedures and other technical and professional references to identify training content and plant-specific information for use in developing training materials?

7. How were the suggested instructional methods or activities developed (task analysis, terminal performance objectives, enabling objectives, actual experience, test pilot, etc.)?

ON-THE-JOB-TRAINING

-	Y-1162-0-00-1170-1170-1170-1170-1170-1170-117
1.	Is on-the-job training (OJT) delivered using well-organized and current materials? Include samples.
2.	How are training materials kept current with respect to plant modifications and procedure changes? Cite examples.
3.	Is OJT conducted by designated personnel who are instructed in program standards and methods? How are they instructed?
4.	What are the required qualifications for in-plant evaluators?

5.	Are the above qualifications appropriate for tasks being taught or evaluated?
6.	What materials are provided for the trainee's OJT? Include samples.
7.	Is the trainee provided an appropriate amount of time in which to learn tasks prior to evaluation?
8.	What instructional aids are available to the trainee during the OJT process?

9.	If a task cannot be performed, do the conditions of task perf walk-through reflect the actual task to the extent possible?	
10.	Are there established criteria for performance evaluations?	Cite examples.
11.	Do these criteria reflect actual job performance standards?	Cite examples.

SIMULATOR TRAINING

1. Does the simulator hardware mimic that of the control room?

2. Do simulator responses emulate those of the plant?

3. Is the simulator configuration program effective?

4. If the simulator is not plant referenced, how well does it correspond to the trainees' actual plant?

5.	Are appropriate procedures, references, etc., available and maintained current?
	Are actual plant procedures and references utilized and adapted as appropriate for non-plant-referenced simulators?
6.	Do simulator training materials provide a proper mix of normal, abnormal, and emergency exercises?

7. Do the training materials effectively incorporate plant and industry events?

8.	Does the normal control room complement participate in simulator training?
9.	Does management routinely observe and evaluate simulator training?
10	. Are effective post-training critiques conducted?
11.	. Is feedback from trainees and management solicited and used to modify or improve the quality of the training?

12.	Are trainee performance evaluations effectively used to enhance the training program
13.	Do exercises and scenarios effectively support established learning objectives?
14.	Does the content of the training guides support the related classroom instruction?
15.	Are simulator guides, including exercises and scenarios, based on sound operating principles?
	Do they reflect the manner of conducting business established at this plant?

16. Are learning objectives specific to identified training needs of the plant?
17. Are there learning objectives established for each crew position?
18. Do exercises and instructors challenge trainees to perform to the best of their ability?
10. Do exercises and managers chances to perform to the bost of their ability.
ADDITIONAL REMARKS:
ADDITIONAL REMARKS:

2.3 Checklist Format

A checklist format can be used to assess a product to determine whether the actions or results meet predetermined standards. Checklists might be used to determine if job performance was satisfactory after training or if an instructional session was conducted properly.

The following guidance can be helpful when constructing a checklist evaluation instrument:

- Identify all actions or key points to be evaluated. Each must be important, observable, distinguishable, and measurable.
- Identify the most frequent problems found in the activity to be evaluated.
- Convert these problems (negative statements) into positive statements that describe satisfactory performance or describe what satisfactory products look like.
- Provide a model or samples of acceptable materials to help the evaluator determine whether standards of accuracy and quality are met.

The following examples can be used to collect evaluation data for instructor observations and training department. These models do not encompass all training activities, and they should be revised to reflect your training and plant organizational needs.

- Example 9, Instructor Observation Checklist
- Example 10, Training Development Recommendation Checklist

EXAMPLE 9

INSTRUCTOR OBSERVATION CHECKLIST

LESSON TITLE:	DA	TE:	-		******		-	
INSTRUCTOR: L		LENGTH OF OBSERVATION:						
OBSERVED BY:	TIT	LE:						
REVIEWED BY:	DATE:							
Directions: Check Yes, No, o	or N/O (Not Observed).						
l. Advance Preparation								
The instructor was prepar	Advance Preparation The instructor was prepared for the training session Training materials were previewed. Training materials were gathered and checked for accuracy, completeness, and legibility.							
		Y	'ES	N	0	N/	0	
Training materials	were previewed.	()	()	()	
)	()	()	
 Training aids and in handouts, transpart for effective and effective and effective 	rencies) were organized)	()	()	
 Administrative mail sheets) were avail. 	terials (i.e., attendance able.	()	()	()	
 Training area was instruction prior to (i.e., lighting, seatily A/V equipment). 	training	()	()	()	

INSTRUCTOR OBSERVATION CHECKLIST

II. Format of the Training Material

The instructor demonstrated ability to follow the lesson plan.							
	Y	ES	N	0	. 1	N/I	0
 An overview of the session was presented as a part of the introduction. 	()	()	(()	
Training objectives were provided at the beginning of the class.	()	()	(()
 Training content was presented according to the lesson plan. 	()	()	(()
 Instructor/trainee activities were implemented according to the plan. 	()	()		()
The instructor demonstrated the ability to make instruction meaningful for the trainees.	()	()		()
Objectives were reinforced during the training.	()	()		()
 Examples and/or analogies were used to apply the content to practical situations.)	()		()
The instructor demonstrated the ability to focus the trainees' attention on the training content.							
The trainees were provided with an appropriate purpose or rationale for the training.	()	()		()
 Interest in the topic was increased through use of reinforcement. 	()	()		()
 The relationship of the present session to previous training was identified. 	()	()		()
 The on-the-job significance of the training was emphasized. 	()	()		()

INSTRUCTOR OBSERVATION CHECKLIST

	The instructor demonstrated the ability to present the content and instructor/trainee activities in an organized, logical sequence.						
		Y	ES	N	0	N	0
	 One teaching point and/or objective flowed to the next. 	()	()	()
	Trainees could follow the presentation without confusion.	()	()	()
	"Nice to know" information was minimized.	()	()	()
	 Meaningful relationships between concepts and skills were clear. 	()	()	()
	Topics had natural beginning and chaing points.	()	()	()
111.	Technical Material Review (For Peer Evaluation)						
	The instructor demonstrated appropriate technical competence to present the subject matter.						
	Content knowledge was accurate and current.	()	()	()
	Knowledge was of appropriate depth.	()	()	()
	Knowledge could be applied to the job as appropriate.	()	()	()
IV.	Applied Instructional Theory						
	The instructor demonstrated the ability to involve trainees actively in the learning process (as opposed to constant lecture or watching a demonstration).						
	Active trainee participation was encouraged.	()	()	()
	 Checks for understanding were made through questioning, performance, review quizzes, 						
	etc.	()	()	()

INSTRUCTOR OBSERVATION CHECKLIST

	Y	ES	N	0	N	1/0
Training was adjusted according to trainee needs.	()	()	()
Allowances were made for "slower" and "faster" learners.	()	()	()
Behavior and trainee responses were reinforced in a positive manner.	()	()	()
 Frequent and appropriate trainee responses were elicited. 	()	()	()
Asking subject-matter questions was encouraged.	()	()	()
 Trainees were given an opportunity to practice more than once (if needed). 	()	()	()
 "Hands-on" practice was provided where possible. 	()	()	()
 "Hands-on" practice emphasized critical steps and skills. 	()	()	()
instructor summarized key points/information/ steps before progressing to the next objective.						
The amount of information presented was appropriate for the trainees.	()	()	()

ADDITIONAL COMMENTS:

EXAMPLE 10

TRAINING DEVELOPMENT RECOMMENDATION CHECKLIST

NEW DEVELOPMENT:	REVISION:
dentify the problem/need:	
is the problem/need safety-related? Yes No	
What job classification is affected? Control of om operator Shift supervisor Shift superintendent Plant equipment operator Shift technical advisor Electrician Mechanical maintenance Instrument and control technic Radiation protection technician Chemistry technician Managers and technical staff Other	sian n
What type of task is involved? Normal operations Maintenance and surveillance Administrative Abnormal Emergency Team evolution Other	
How important is this situation? Negligible Undesirable Serious Severe Extremely severe	

TRAINING DEVELOPMENT RECOMMENDATION CHECKLIST

	Very easy Somewhat easy Moderately difficult Very difficult Extremely difficult What is the frequency of this problem/need?
	Moderately difficult Very difficult Extremely difficult What is the frequency of this problem/need?
	Very difficult Extremely difficult What is the frequency of this problem/need?
	Extremely difficult What is the frequency of this problem/need?
	What is the frequency of this problem/need?
9.	Dearly (about annual)
9.	Rarely (about once a year)
9.	Seldom (about 3 or 4 times a year)
9.	Occasionally (about once a month)
9. 1	Often (about once a week)
9.	Very often (daily)
	What is the source of the problem/need?
	Lack of training
	Insufficient training emphasis
	Lack of practice during training
	Incorrect training materials
	Conflict between training and job
	requirements
	Regulatory requirement
	Not applicable
10.	How can this recommendation benefit plant operations?
	Correct unsafe practices
	Improve plant availability
	Eliminate equipment misuse/damage
	Reduce reworks
	Reduce unscheduled maintenance
	Improve employee performance
	Accelerate qualification
	Avert anticipated problem
	Respond to regulatory/requirement/change
	Maintain job qualifications
11.	How do you suggest training be revised or developed?
	Attach a written description that describes the root cause of the problem and how it should be corrected.)

TRAINING DEVELOPMENT RECOMMENDATION CHECKLIST

FUNCTIONAL REVIEW

Disposition Action	v.	
Approved	Approved with Modifications	Disapproved
Modifications and disapproved requi	Comments (Note: approved with me ire comments):	odifications and
	Signature, Title	Date
	TRAINING REVIEW	N
Disposition Action		
Approved	Approved with Modifications	Disapproved
Defer		
	Comments (Note: approved with modeler require comments):	odifications,
	Signature, Title	Date

SUMMARY

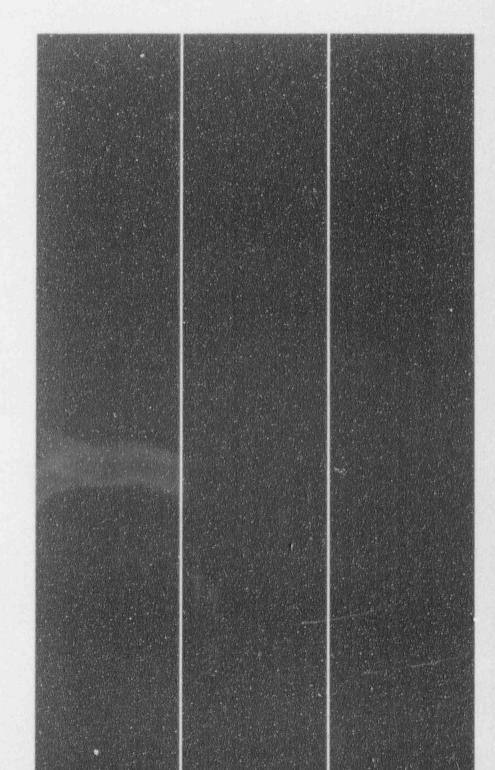
The results of evaluations will provide the training organization with positive short- and long-range direction. The collection of data before, during, and after training can provide valuable information for decisions about existing and future training programs. To take full advantage of this evaluation information, it is important that plant and training management conduct regular overviews, and that training personnel are provided feedback directly and through continuing development activities. This will ensure that all training activities are consistently and effectively administered and will produce the results for which they are intended.

REFERENCES

- Abramson, Theodore, ed. <u>Handbook of Vocational Education Evaluation</u>, Beverly Hills, Sage Publications, 1979.
- Blank, William E., Handbook for Developing Competency-based Training Programs, Englewood Cliffs, N.J., Prentice-Hall, 1982.
- Franklin, Jack L., and Thrasher, Jean H., An Introduction to Program Evaluation, New York, Wiley and Sons, 1976.
- Gronlund, Norman E., How to Construct Achievement Tests, Fourth Edition, Englewood Cliffs, N.J., Prentice-Hall, 1988.
- Kirkpatrick, Donald L., "Evaluating Training Programs," American Society for Training and Development, Madison, Wisconsin, 1975.
- Patton, Michael Q., <u>Practical Evaluation</u>, Beverly Hills, Sage Publishing, 1982.
- Phillips, Jack J., Handbook of Training Evaluation and Measurement Methods, Houston, Gulf Publishing, 1983.
- Principles of Training System Development, INPO 85-006, Atlanta, Institute of Nuclear Power Operations, 1985.
- Sechrest, Lee, guest ed., New Directions for Program Evaluation, San Francisco, Jossey-Bass, Inc. Publishers, No. 8, 1980.
- Wentling, Tim L., and Tom E. Lawson, Evaluating Occupational Education and Training Programs, Second Edition, Boston, Allyn and Bacon, 1980.



September 1993 ACAD 88-002 (Addendum III) ACADEMY DOCUMENT





700 Galleria Parkway Atlanta, Georgia 30339-5957 Telephone 404-644-8543



NUCLEAR REGULATORY COMMISSION WASHINGTON, D. C. 20555

April 19, 1994

MEMORANDUM FOR:

Darlene Huyer

Anstec, Inc.

FROM:

Tremaine Donnell, INPO Coordinator Records and Archives Services Section Information and Records Management Branch Office of Information Resources Management

SUBJECT:

ESTABLISHMENT OF DATA RECORD FOR INPO

DOCUMENTS

The Records and Archives Services Section has received the attached INPO Document.

Distribution Code: NYF2

Comments: This is a General Distribution Document, copyrighted by INPO. The Institute authorizes the NRC to place this document in the Public Document Room. The document is covered within the Copyright License executed between the NRC and INPO on December 8, 1993.

Please return RIDS distribution to Tremaine Donnell, 5C3, Two White Flint North, 415-5633.

Tremaine Dornell

Tremaine Donnell, INPO Coordinator Records and Archives Services Section Information and Records Management Branch Office of Information Resources Management

Enclosure: As stated

PLEASE NOTE: Hard copy is available from the NRC File Center.

cc: JDorsey