12/11/92 JS①

PNL-8374

UC-900
La07

**Evaluation of S-101 Course
"Supervisors Orientation to
Occupational Safety in DOE"
Taught in Idaho Falls, Idaho
June 23, 1992 - June 26, 1992**

T. S. Wright

October 1992

**Prepared for the U.S. Department of Energy
under Contract DE-AC06-76RLO 1830**

**Pacific Northwest Laboratory
Operated for the U.S. Department of Energy
by Battelle Memorial Institute**

PNL-8374

DISCLAIMER

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor Battelle Memorial Institute, nor any of their employees, makes any warranty, expressed or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof, or Battelle Memorial Institute. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

PACIFIC NORTHWEST LABORATORY
operated by
BATTELLE MEMORIAL INSTITUTE
for the
UNITED STATES DEPARTMENT OF ENERGY
under Contract DE-AC06-76RLO 1830

Printed in the United States of America

Available to DOE and DOE contractors from the
Office of Scientific and Technical Information, P.O. Box 62, Oak Ridge, TN 37831;
prices available from (615) 576-8401. FTS 626-8401.

Available to the public from the National Technical Information Service,
U.S. Department of Commerce, 5285 Port Royal Rd., Springfield, VA 22161.

PNL--8374

DE93 002975

EVALUATION OF S-101 COURSE
"SUPERVISORS ORIENTATION TO OCCUPATIONAL
SAFETY IN DOE" TAUGHT IN
IDAHO FALLS, IDAHO
JUNE 23, 1992 - JUNE 26, 1992

T.S. Wright

October 1992

Prepared for
the U.S. Department of Energy
under Contract DE-AC06-76RLO 1830

Pacific Northwest Laboratory
Richland, Washington 99352

28
MASTER

1.0 SUMMARY

This section summarizes trainee evaluations for the Safety Training Section course, "Supervisors' Orientation to Occupational Safety in DOE", (S-101) which was conducted June 23-26 at Idaho Falls Engineering Laboratory, in Idaho Falls, Idaho.

Section 1.1 and 1.2 of this report summarizes the quantitative course evaluations that trainees provided upon completion of the course. Appendix A provides a transcript of the trainees' written comments.

Numeric course ratings were generally positive and show that the course material and instruction were very effective. Written comments supported the positive numeric ratings. The course content and knowledge gained by the trainees exceeded most of the students' expectations of the course.

Results from the final examination showed that students gained significant knowledge from the course.

The class was conducted concurrently with a "Machine Guarding" class. This allowed the lead instructor to use two experts in the classes without additional cost. The experiment was successful both from a standpoint of cost and quality. The same format (concurrent classes) will be used at the Nevada Test Site in October.

CONTENTS

1.0	SUMMARY- IDAHO NATIONAL ENGINEERING LABORATORY (JUNE 23 TO 26, 1992)	1.1
1.1	SUMMARY OF TRAINEE COURSE EVALUATIONS	1.1
1.2	NUMERIC RATINGS	1.1
1.3	WRITTEN COMMENTS	1.5
1.4	EXAMINATION RESULTS	1.5
	APPENDIX A - EVALUATION COMMENTS	A.1
	APPENDIX B - TRAINEE EVALUATION FORM	B.1

1.1 SUMMARY OF TRAINEE COURSE EVALUATION

This course was conducted at Idaho National Engineering Laboratory, in Idaho Falls, Idaho, June 23-26, 1992. Tommye Wright, Troy Corbin, and Carl Heise presented the course to forty-four Westinghouse Idaho Nuclear Company employees.

1.2 NUMERIC RATINGS

Thirty-nine trainees completed a course evaluation form upon finishing the course. The first rating area of the form covered seven items dealing with course content; the second rating area covered one item dealing with testing materials; and the third rating area covered fifteen items specifically associated with course topic areas.

For the first and second rating areas, respondents were instructed to rate the degree to which they agreed or disagreed with each statement using a five-point scale with 1 (low) anchored to "strongly disagree" and 5 (high) anchored to "strongly agree". The ratings are as follows:

COURSE CONTENT AND TESTING MATERIALS RATINGS

1. Developed specific skills and competencies in health and safety that I can use as a supervisor on the job.
Average Class Rating - 3.97
2. Gained a greater understanding of safety liability, hazard recognition, hazard evaluation and hazard control.
Average Class Rating - 4.13
3. Gained factual knowledge about health and safety issues and procedures (terminology, classifications, regulations).
Average Class Rating - 4.10
4. Learned fundamental principles, generalizations, and theories.
Average Class Rating - 4.08
5. Can use the course materials to improve thinking, problem-solving, and decision-making of supervisory health and safety work.
Average Class Rating - 4.15

6. Would recommend this course to others.
Average Class Rating - 4.13
7. This course will help supervisors to make their work environments safer.
Average Class Rating - 3.97
8. The final test was a good measure of the knowledge gained in the course.
Average Class Rating - 3.56

The average class rating for the course content area and testing materials area was 4.01. This high rating reinforces the applicability of the course content to the trainees' interests and work environments.

The third rating area asked the respondents to rate the value of each of the fifteen topic areas using a five-point scale with 1 (Unsatisfactory), 2 (Satisfactory), 3 (Good), 4 (Very Good), or 5 (Excellent). The following are the average class ratings that dealt with topic content as well as with the value of the instructor:

INSTRUCTOR	TOPICAL AREAS PRESENTED	INSTRUCT	CONTENT
Troy Corbin	Introduction to DOE Safety and Health Program	3.79	3.33
Troy Corbin	Safety Responsibility	3.82	3.69
Troy Corbin	Electrical Hazards	3.67	3.49
Tommye Wright	Fire Hazards	3.87	3.64
Troy Corbin	Material Handling and Storage	3.74	3.49
Tommye Wright	Physical Hazards	3.77	3.56
Troy Corbin	Chemical Hazards	3.72	3.67
Troy Corbin	Confined Space Hazards	3.97	4.00
Tommye Wright	Hazard Communication	3.82	3.74
Carl Heise	Hand and Portable Power Tools	3.87	3.85
Carl Heise	Machine Safeguards	4.08	3.95
Troy Corbin	Inspections and Investigations	3.69	3.54
Tommye Wright	Job Safety Analysis	3.67	3.56
Troy Corbin	Measurement and Testing	3.69	3.46
Troy Corbin	Hazard Reduction and Elimination	3.79	3.54

The overall average class rating for content was 3.63. The overall average class rating for the instructors in general was 3.80. The average instructor rating for Tommye Wright was 3.78 and the average instructor rating for Troy Corbin was 3.76, and Carl Heise was 3.98.

The section on machine guarding was especially well received. This topic was particularly applicable to INEL, as this is the area of multiple Tiger Team citations.

1.3 WRITTEN COMMENTS

After providing numeric course evaluations, participants provided written comments about the course. Written comments were transcribed and are presented verbatim in Appendix A.

1.4 EXAMINATION RESULTS

On the last day of the course, a final examination consisting of 25 multiple choice questions was administered to forty-three attendees. The scores ranged from 80% to 100% with the average score being 92%. Forty-three persons successfully completed the class.

APPENDIX A

EVALUATION COMMENTS

"SUPERVISORS' ORIENTATION TO OCCUPATIONAL SAFETY IN DOE"

JUNE 23, 1992 - JUNE 26, 1992

IDAHO FALLS, ID (IDAHO NATIONAL ENGINEERING LABORATORY)

APPENDIX A

TRAINEE EVALUATION RESPONSES

SI01, "SUPERVISORS' ORIENTATION TO OCCUPATIONAL SAFETY IN DOE"

JUNE 23-26, 1992--IDAHO FALLS, ID

IDAHO NATIONAL ENGINEERING LABORATORY

Please briefly describe how your expectations of this course were or were not met.

My expectations were met.

I wanted a bit of knowledge about OSHA to use on the Safety Council and it was helpful.

I think this class would have been better if there were more hands-on inspections.

I expected to become more health and safety aware and was.

A review of scaffolding and excavation.

Yes.

Far exceeded what I expected.

Good coverage and introduction.

I anticipated getting a better understanding and use of OSHA regulations and did gain a better knowledge.

Yes, they were met.

Learning to read/use the CFR book. Great.

Very few specific examples.

Met. Good general understanding of OSHA.

Seemed to basic.

How to use book.

Research material "A" was provided.

Helped me to realize that the CFR's are law and very important.

Field trip could have been arranged better.

I was not sure what to expect.

Expected to become better able to recognize and evaluate workplace hazards and adequacy of contractor's safety programs. These expectations were fully met.

I think everything was met very well,

My expectations were met because the course covered all topics listed on the course outline.

The most helpful topics covered or activities presented in this course were:
All of it.

Confined space entry.

Inspection.

Machine guarding and use of CFR29.

Working with book in general.

Confined space. Machine guarding. Use of CFR 29 1910.

Confined space measurement and testing.

How to look up items in CFR's.

Using CFR book.

Everything.

Hazards communication, fire hazards, confined space (actually all of them).

The use of the CFR.

Machine guarding.

All except lasers.

How to research the CFR books.

HAZCOM.

Confined space, fire hazards.

How to use book.

All were good. Personally, I wish there was a littler more time spent on Material Handling.

HAZCOM, book instructions.

How to use the CFR.

Physical hazards, confined spaces, machine guarding, chemical hazards, and measurement and testing.

Machine guards and confined spaces.

Investigations and inspections and job safety analysis were the most helpful to me.

The least helpful things discussed or done were:

Some classroom.

Job safety analysis.

Inspections at the site.

Respirator usage.

All were pretty good.

Going out to ICPP to do safety inspection.

Electrical, JSA.

Lasers.

Electrical.

Walk-thru of my own plant.

Safety inspection at the plant site.

Respirator.

General topics.

The section on the hazards of lasers was not very helpful.

More emphasis should be given to:

General safety requirements.

Heat stress (Health Physic) concern for those who wear PC's in a hot environment.

Inspections hands-on training.

How to read CFR manuals.

New regulations.

Egress.

Following student workbook.

Instruction techniques.

Site specific areas.

Tag-out/Lock-out.

Chemicals.

New regulations coming out.

OSHA verbiage.

Flammable, hazardous chemicals we use.

Resources and contacts available to assist with interpretations (e.g., 7 volumes set on OSHA from DOE-HQ-EH).

Material handling and hazard communication.

New material.

Personal protective equipment.

Less emphasis should be given to:
Actual OSHA standards.

Classroom.

General items.

Lasers at least for me.

Job safety analysis.

Electrical safety.

Material handling and storage.

Course went pretty good.

Laser and the DOE regulations and OSHA standards.

What specific suggestions do you have for improving future sessions?

Break the course down giving more time to each section. Conduct in a modular approach allow individuals to select what they need when they need it.

More site specific material.

Learning what goes on at facility/plant.

Work on visual presentation. Maybe convert wholly to corrected slides with booklet of overheads as backup and for in-depth. Use more of screen.

Give one more day training for new regulations.

Session on JSA - class exercise was good. Videotape was poor/not helpful.

Keep overheads and material in handouts coordinated, I had trouble following Troy when his material jumped around.

Better information in booklet, more reference to the regulations.

More worksheets. Four day course should maybe have a little less lecture and more group work or participation.

The introduction to DOE safety and health program could be placed on video where some high ranking DOE official gives the philosophy of the program and the specific orders and regulations are provided, or a handout.

Other materials to supplement or substitute for the provided handouts?
CGA material on compressed gas storage.

MSDS.

More of all of it.

List CFR material in workbook.

Handouts were very good.

More examples of actual violations and outstanding compliance in all areas.

Inspection checklist could use regulation numbers also listed.

JSA booklet.

Daily schedule/timing of activities, worktime?

Good.

Seemed fine.

Should have gone to the site right away in the morning on Thursday.

Good schedule. Regular breaks held to reasonable limit and prompt resumption of class.

The trip out to ICPP was not very productive for the time spent. Using an in town site for inspection would have been better.

Good. Instructors were very conscientious not to go too long before breaks.

Weird schedule on site inspections.

Great.

Field trip would have been better if scheduled 0800.

Facilities/training room arrangements?

Good.

Excellent.

Adequate.

Great. Needs more coffee brought in.

Video monitors too low in front, difficulty in seeing monitors.

What other types of safety training courses would you like to see available?

Training on new information coming into regulations.

EPA laws/regulations.

OSHA training for construction.

I would like to see an upper level of 29 CFR, more practical exercises.

Scaffolding details.

HAZMAT, electrical, confined space.

More specific on each topic.

EPA.

More of fire hazards.

Any further comments?

Instructors were knowledgeable. Friendly and kept things going. Also at times interesting.

No blood borne.

How about a laminated sheet of references for fire, chemical, electrical, etc. things we might have to check to see if they also apply.

This course should be given to all employees in the plant.

Excellent introductions. Good class participation. Course was at exactly the right level for my needs.

APPENDIX B

TRAINEE EVALUATION FORM

EVALUATION FORM

S-101—Supervisors Orientation to Occupational Safety in DOE

Date _____
 Name (optional) _____
 Title _____
 Location _____

Please evaluate various features of the course you have just completed. The information you provide here will be combined with that from other trainees and summarized for the sponsor, the U.S. Department of Energy. Results from this evaluation will be used to improve this course.

Course Content

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
Overall, as a result of this course I believe that I:					
developed specific skills and competencies in health and safety that I can use on the job.5	4		3	2	1
gained a greater understanding of safety liability, hazard recognition, hazard evaluation and hazard control.5	4		3	2	1
gained factual knowledge about health and safety issues and procedures (terminology, classifications, regulations)...5	4		3	2	1
learned fundamental principles, generalizations, and theories.5	4		3	2	1
can use the course materials to improve thinking, problem-solving, and decision-making of supervisory health and safety work.5	4		3	2	1
would recommend this course to others.5	4		3	2	1
this course will help supervisors to make their work environments safer.5	4		3	2	1

Testing Materials

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
The final test was a good measure of the knowledge gained in the course.5	4		3	2	1

Topic Areas

Please evaluate each topic area using the 5-point scale below.

5 Excellent 4 Very Good 3 Good 2 Satisfactory 1 Unsatisfactory

	Content					Instructor				
Introduction to DOE safety and health program5	4	3	2	1	5	4	3	2	1	
Safety responsibility5	4	3	2	1	5	4	3	2	1	
Electrical hazards5	4	3	2	1	5	4	3	2	1	
Fire hazards5	4	3	2	1	5	4	3	2	1	
Material handling and storage5	4	3	2	1	5	4	3	2	1	
Physical hazards5	4	3	2	1	5	4	3	2	1	
Chemical hazards5	4	3	2	1	5	4	3	2	1	
Confined space hazards5	4	3	2	1	5	4	3	2	1	
Hazard communication5	4	3	2	1	5	4	3	2	1	
Hand and portable power tools5	4	3	2	1	5	4	3	2	1	
Machine safeguards5	4	3	2	1	5	4	3	2	1	
Inspections and investigations5	4	3	2	1	5	4	3	2	1	
Job safety analysis5	4	3	2	1	5	4	3	2	1	
Measurement and testing5	4	3	2	1	5	4	3	2	1	
Hazard reduction and elimination5	4	3	2	1	5	4	3	2	1	

Comments

1. Please briefly describe how your expectations of this course were or were not met. _____

2. The **most** helpful topics covered or activities presented in this course were: _____

3. The **least** helpful topics or activities in this course were: _____

4. More emphasis should be given to: _____

5. Less emphasis should be given to: _____

6. What specific suggestions do you have for improving future sessions?

7. Other materials to supplement or substitute for the provided handouts? _____

8. Daily schedule/timing of activities, worktime? _____

9. Facilities/training room arrangements? _____

10. What other types of safety training courses would you like to see available? _____

11. Any further comments? _____

12. **Overall rating:** Based on your comments above, please rate the course on a 5-point scale by circling the number of your choice.

5 Excellent 4 Very Good 3 Good 2 Satisfactory 1 Unsatisfactory

DISTRIBUTION

No. of
Copies

No. of
Copies

OFFSITE

ONSITE

12 DOE/Office of Scientific and
Technical Information

DOE Richland Field Office

P. W. Kruger

R. E. Gibbs
Office of Safety and Quality
Programs
U.S. Department of Energy
19901 Germantown Rd.
Germantown, MD 20874

13 Pacific Northwest Laboratory

H. N. Bowers
T. S. Wright
M. A. Leckband (5)
Publishing Coordination
Technical Report Files (5)

G. R. Florczak
U.S. Department of Energy
EH-31.2
19901 Germantown Rd.
Germantown, MD 20874

T.D. Corbin
Marine and Environmental
Testing
P.O. Box 5693
Portland, OR 97228-5693

Carl Heise
1145 Saddle Ridge
Portage, WI 53901

Stephanie Carey
WINCO
P.O. Box 4000
Idaho Falls, ID 83415-5111

**DATE
FILMED**

12/21/92