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**Evaluation of S-101 Course
"Supervisors Orientation to
Occupational Safety Compliance
in DOE" Taught in Richland,
Washington May 5 - 8, 1992**

T. S. Wright

September 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
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EVALUATION OF S-101 COURSE
"SUPERVISORS ORIENTATION TO OCCUPATIONAL
SAFETY COMPLIANCE IN DOE" TAUGHT IN
RICHLAND, WASHINGTON
MAY 5, 1992 - MAY 8, 1992

T.S. Wright

September 1992

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Pacific Northwest Laboratory
Richland, Washington 99352

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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 May 5-8 at Hanford, in Richland, Washington.

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.

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1.1 SUMMARY OF TRAINEE COURSE EVALUATION AT HANFORD

This course was conducted at Hanford, in Richland, Washington, May 5-8, 1992. Tommye Wright, Ken Yotz, Doug Clark, and Harold Bowers presented the course to forty Westinghouse, DOE-HQ and PNL personnel.

1.2 NUMERIC RATINGS

Forty 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 - 4.20

2. Gained a greater understanding of safety liability, hazard recognition, hazard evaluation and hazard control.

Average Class Rating - 4.25

3. Gained factual knowledge about health and safety issues and procedures (terminology, classifications, regulations).

Average Class Rating - 4.08

4. Learned fundamental principles, generalizations, and theories.

Average Class Rating - 4.10

5. Can use the course materials to improve thinking, problem-solving, and decision-making of supervisory health and safety work.

Average Class Rating - 4.10

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 - 4.18

8. The final test was a good measure of the knowledge gained in the course.

Average Class Rating - 3.83

The average class rating for the course content area and testing materials area was 4.11. 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
Tommye Wright	Introduction to DOE Safety and Health Program	4.13	4.00
Harold Bowers	Safety Responsibility	4.08	4.08
Ken Yotz	Electrical Hazards	3.98	3.85
Doug Clard	Fire Hazards	4.03	3.95
Tommye Wright	Material Handling and Storage	4.00	3.95
Ken Yotz	Physical Hazards	4.15	4.08
Ken Yotz	Chemical Hazards	3.98	4.03
Tommye Wright	Confined Space Hazards	4.10	3.98
Tommye Wright	Hazard Communication	3.95	3.83
Ken Yotz	Hand and Portable Power Tools	4.08	4.00
Tommye Wright	Machine Safeguards	4.05	4.13
Ken Yotz	Inspections and Investigations	4.05	4.15
Tommye Wright	Job Safety Analysis	4.00	3.93
Ken Yotz	Measurement and Testing	3.95	3.88
Ken Yotz	Hazard Reduction and Elimination	4.05	3.95

The overall average class rating for specific topic content was 3.72. The overall average class rating for the instructors in general was 3.76. The average instructor rating for Tommye Wright was 4.04 and the average instructor rating for Ken Yotz was 4.05, the average instructor rating for Doug Clark was 4.03, and Harold Bowers 4.08.

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 was administered to forty attendees. There were 25 questions. The scores ranged from 76% to 100% with the average score being 89%. Forty persons successfully completed the class.

Results from the final examination showed that students gained knowledge from the course, problem areas in the test have been identified. One question was missed by 92% of the students. Three other questions were missed by more than 40% of the students. These questions were reviewed and determined to be misleading and have been rewritten.

APPENDIX A

EVALUATION COMMENTS

"SUPERVISORS' ORIENTATION TO OCCUPATIONAL SAFETY IN DOE"

MAY 5, 1992 - MAY 8, 1992

RICHLAND, WA (HANFORD)

APPENDIX A

TRAINEE EVALUATION RESPONSES

S101, "SUPERVISORS' ORIENTATION TO OCCUPATIONAL SAFETY IN DOE"

MAY 5-8, 1992--RICHLAND, WA

HANFORD

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

Good program, met my expectations.

About what I expected, although better than much of the onsite training.

All expectations of the course were very good.

Being able to identify hazards in the workplace.

Feel more familiar to CFR29.

I took this as a "refresher" course for myself. The course was exactly what I hoped it would be.

Were met.

Needed more practice using part 1900-1910.

They were met.

Learned a lot of different things on safety I didn't know.

This course exceeded all expectations. I will use the skill in my work place.

Great! I came away with a much better understanding.

I never even looked at the standards before, so this course enlightened me and taught me a lot.

Review of CFR's.

To be able to utilize CFR's and determine where applicable at Hanford.

I believe the class provides a foundation of safety in the work place.

Not enough real life examples related directly to Hanford.

Thought it was going to be boring but it wasn't.

Course was very well put together and delivered.

Having an OSHA person teach gave good insights.

The course was very informative, however the scheduling could have been laid out better.

I felt that some sections, specifically Fire Protection, were too long and detailed.

Had no knowledge of what to expect from the course.

Yes, since this was my first formal course.

They were met by giving me a better understanding of the subject.

An analysis using the DOE SPMS should be included. It should specify primary hazards at DOE sites and the injury rates.

I expected more helpful regulation references.

The most helpful topics covered or activities presented in this course were:
Use of CFR books, and what OSHA doesn't cover.

Regulations.

Five/machine/compliance.

Introduction, how it began, field trip.

Chemical hazards, measuring and testing.

Inspections and investigations.

Site walk-through.

Field investigations as a group provided opportunity to interact and increase awareness in the work place.

Inspections and investigations. The worksheets requiring using the CFR's.

All.

29CFR 1910 books.

PPE, machinery and machine guarding.

Preview (Chub Bowers). Tommye Wright's comments presentations.

Hazard Content.

Bloodborne Pathogens

Reviewing standards.

All.

The walk-thru of RTL. Now I know how the big picture comes together.

Fire hazards, confined space.

All topics were good.

Inspections, investigations, JSA.

Electrical hazards.

How to read the books.

Hands-on use of the CFR's.

Hazard and violations search workshop.

All.

Eyes requirements.

Learning to use the codes.

The least helpful things discussed or done were:
Five/Machine/Compliance.

Fire Hazards.

Chemical bray, measuring and testing.

Chemical hazards.

Reading thru electrical section word by word.

Fast talking, and group activities. Job safety analysis games.

N/A.

Electrical hazards because the National Electric Code makes most of the OSHA standards seem obsolete.

Chemical properties.

Electrical safety.

Lock and tag.

None.

Measuring and testing.

They were all helpful.

Personal protective equipment.

Hand tools safety.

More emphasis should be given to:

Using code books.

DOE Hazards/DOE injury rate.

Organization and instructor cop-out on grades.

Main points.

Principles/basis for regulations. Job safety analysis and hazard control.

Electrical hazards.

Looking for hazards not worrying about whether there is a citation or not.

Investigation findings, perhaps to allow each team leader to read their teams findings. Also talk about recording observations when investigation is ongoing.

State laws.

Inspections.

Chemical storage.

Hazard specifics and more related to supervisors safety philosophy.

Electrical safety.

Group participation; too much lecture time. Need more group interaction the first two days.

JSA-should not be self taught. Should more slowly make references to document reference number. People got lost.

Bloodborne pathogens.

The daily handouts.

Class needs more days to study CFR 29.

Learn the code books.

Course update outline.

How to find things in the book.

OSHA Compliance and DOE orders.

Chemical hazards in the workplace need to emphasize welding and welding places.

Chemical safety and exposure.

New medical requirements for protection of bloodborne pathogens.

Less emphasis should be given to:
Details should be eliminated.

Material handling and storage.

Fire hazards section.

DOE orders.

Regulations and standards don't keep people safe. People keep people safe.

Idol talk. Get off the self teaching game playing for Job Safety Analysis.

Fire protection.

Lecture, more examples, more group activities.

Job safety analysis exercise.

I think they were all helpful.

History/background.

None.

Hand tool safety.

What specific suggestions do you have for improving future sessions?
Viewgraphs that go along with topic.

Need more training on ventilation systems, paint booths, welding shops.

Some techniques for assessing relative risks of different hazards.

Use more videos, class is dry, dry, dry.

Be specific on references, place reference location on slide---correct reference please.

Use more video/training films to demonstrate real conditions.

More variety in presentations-too much lecturing.

Talk about recording observations as well as findings.

I think future sessions on Washington codes may be a good idea.

Give more time for the course.

More walk-thru of different areas.

Tailor it to the specific site and add philosophy.

Better instructor planning.

More group participation a lot of energy in room, not enhanced-workshops, brainstorming.

Include ore data in section 4. Lots of good information from notes in test (for reference materials).

More digging through the CFR's.

Earlier/later lunchtime--mitigate rush and crowds.

Make it a five day course.

More training in the codebooks.

Make it easier to follow in the handouts.

Slides should follow along with the workbook more accurately to avoid confusion.

Break every hour.

Reduce time required for the course to 3 days.

Coordinate handbook and lecture material.

Other materials to supplement or substitute for the provided handouts?

Upgrade notebook to follow slides.

Checklists.

Perhaps something job related.

More handouts to use as references in the workplace.

Show videos that present accidents and study the accidents and preventions.

Handout was beneficial and professional.

Handouts should reflect lectures. Seems to be a lot of detailed information not included.

NIOSH and other referenced IH booklets.

Examples of actual inspection results and video of scenes.

Notebooks.

Examples/videos of past hazard conditions.

Seems complete and thorough.

Daily schedule/timing of activities, worktime?

Good.

What schedule?

Start at 7:30.

Okay.

Needed more breaks.

More breaks.

Great.

Not enough breaks.

Schedule should be 8 to 3.

Schedule was wrong from the start. Need an agenda. Too much wasted time.

Okay.

The schedule needs more organization. Breaks, lunch period needs a better schedule. It appeared very haphazard when breaks and lunch were provided.

More frequent breaks.

Poor planning for lecture length need break time. Expectations poorly communicated.

Introduction should initially provide schedule of presentations, instructors names need sessions - breaks (this would help with business related phone calls, planning, etc.) Should be careful to cover all objectives sated for each section. This was not consistently done. Should review completed per instructor training guide. All instructors are obviously very knowledgeable, however class seemed like it was not "quite ready". Changes not made, materials needed expansion, etc.

When do we go over the daily handouts?

Break times should be posted in advance. Lunch time should be 11:30 to whenever. This allows the student to beat the lunch hour rush. The class was very good but lack of organization reduced the effectiveness of class.

Everything was good.

Good as is.

Too long, reduce to three days.

Schedule should be provided at the beginning of class.

Facilities/training room arrangements?

Good.

I think this was a good environment.

Excellent.

Comfortable, coffee available.

Lack of coffee/tea.

Too cool at times.

Okay.

Good.

Bad room. Okay time schedule was bad we got run out several times.

Very good.

Okay, perhaps better communication prior to the start of the course.
i.e., time and place.

Great, except lighting.

No air conditioner, room was warm.

Room was pleasant.

What other types of safety training courses would you like to see available?
More on techniques for evaluating and controlling hazards.

Courses on Washington laws.

Chemical hazards and exposure.

I would like to go to an environmental class.

Outline the course and follow the outline.

More on the CFR's

IH training for industrial safety knowledgeable personnel.

Maybe more detail in each subject with more class involvement, group
work-type activities.

In-depth of specific sections - greater detail.

More hands-on inspections regarding OSHA compliance.

Any further comments?

Good job!

This was a great class. Very informative. The instructors were
knowledgeable in the subject they taught - not always the case.

Offer tea as a beverage in addition to coffee.

There are strong reasons to believe that OSHA standards are not the best
standards for all DOE Operations. Those areas should be openly

discussed and not swept under the rug for better understanding of the underlying safety issues.

Tommye is an excellent instructor, she has the ability to keep the group attentive. I feel she did a much better job instructing than the so called experts that assisted with the course.

3rd and 4th days contents excellent. Lectures were very knowledgeable.

Fire protection section was very difficult to follow. Note taking interfered with listening to catch information presented, different from book, lecture juggled around with out class reference to aware of requirements.

I think the class was very worthwhile and informative. Designate break time. Will reduce students leaving at different times.

Too often it was stated that you have to evaluate the situation. I think we need more help in doing this.

It's good to have these rules but what good are they if OSHA, WISHA and NEC people cannot come out and check to see if we are going by the rules. They should not have to be invited.

Have short breaks every hour. Set time for class and for lunch, we have commitments to set-need to know. Need more organization.

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

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