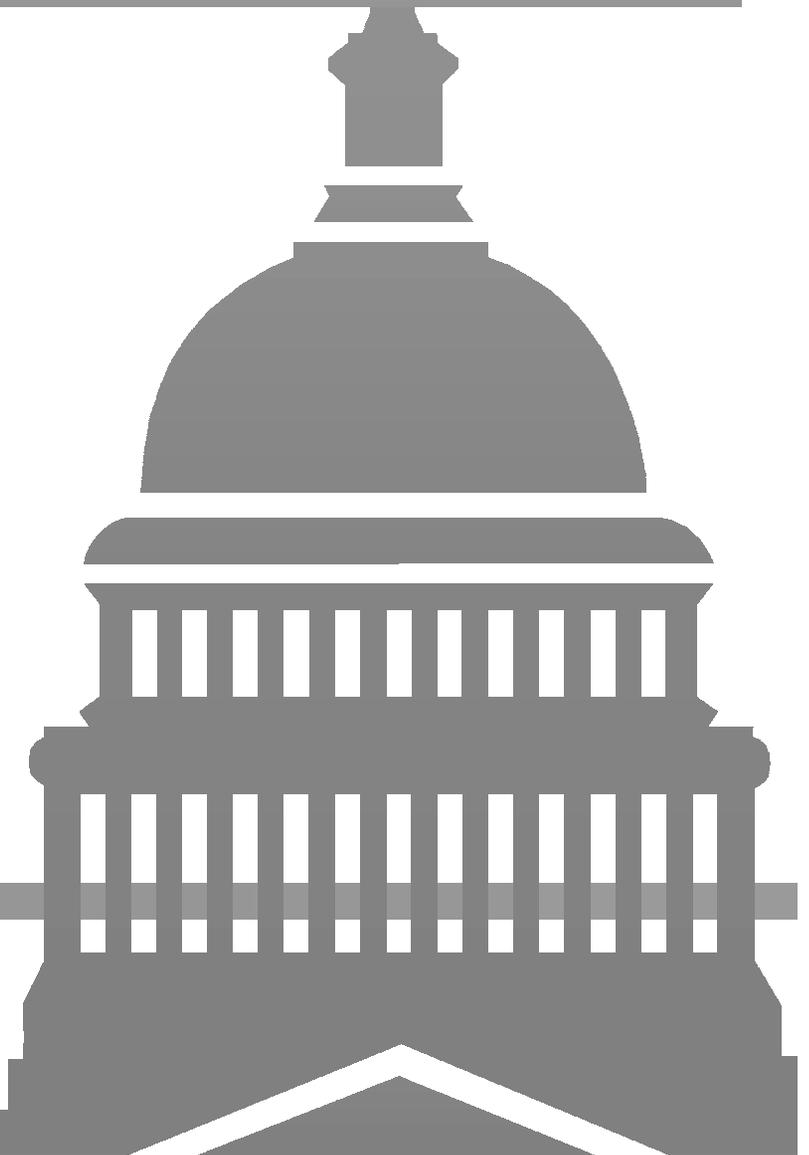


# NRC REGION III



Hironori Peterson  
Senior Operations Engineer





**NRC MNTA PRESENTATION  
JUNE 26, 2002**

**OPERATOR LICENSE ISSUES**

# Operator Licensing Issues and Updates

## AGENDA

- Initial Operator License Examination
  - ▶ Written Exams
  - ▶ Operating Exams
- Licensed Operator Requalification Program
  - ▶ Recent Requal Inspection Issues
  - ▶ Cooper Station - White Finding
  - ▶ Indian Point 2 - Yellow Finding
- Upcoming Issues (As Time Permits)

# WRITTEN EXAM

CONSISTENT FORMAT FOR EXAM MATERIAL

- NRC WILL SUBMIT EXAMS TO INPO
- REQUEST ELECTRONIC COPIES
  - ▶ MICROSOFT WORD
  - ▶ MICROSOFT ACCESS
  - ▶ WORDPERFECT
- REQUESTED INFORMATION
  - ▶ GUIDANCE IN ES-401-6
  - ▶ QUESTIONS NUMBERED 1-125+
  - ▶ STILL NEED SEPARATE RO AND SRO EXAMS

# REQUESTED QUESTION INFO

- EXAM OUTLINE CROSS-REFERENCE
- EXPLANATION OF ANSWER
- TECHNICAL REFERENCE(S)
- PROPOSED REFERENCES TO BE GIVEN TO APPLICANT DURING EXAM
- LEARNING OBJECTIVE
- QUESTION SOURCE & HISTORY
- QUESTION COGNITIVE LEVEL

# QUALITY OF EXAM MATERIAL

- IN GENERAL: QUALITY HAS IMPROVED
- COMMON CHALLENGES TO QUALITY
  - ▶ SRO ONLY QUESTIONS
  - ▶ QUESTIONS THAT DO NOT MATCH K/A's
  - ▶ MULTIPLE OR NO CORRECT ANSWERS

# SRO ONLY QUESTIONS

- NEW FAQ ON NRC WEB SITE
  - ▶ QUESTION NUMBERS 37a & 37b
  - ▶ #37a: Is it correct to say that an “SRO-level” question is simply different from the questions on the RO examination and related to one of the seven items listed in 10 CFR 55.43(b)?
  - ▶ #37b: ES-401 does not address using a K/A that references 10 CFR 55.43 for testing on the RO written examination; is that acceptable?

# **SRO ONLY QUESTIONS**

- **AVOID GENERIC SYSTEMS QUESTIONS**
- **FOCUS ON THE 7 ADDITIONAL ITEMS IN 10 CFR 55.43(b)**
- **BIG PICTURE - IS IT APPROPRIATE FOR THE JOB LEVEL BEING EXAMINED?**

# QUALITY OF EXAM MATERIAL

- QUESTIONS THAT DO NOT MATCH K/A
  - ▶ TWO PARTS TO K/A
    - PART A & PART B (Note: A question could require knowledge of Part A based on info in the question stem and then the question asks for the answer as Part B.)
  - ▶ BIG PICTURE CHECK - DOES THE QUESTION ASK OR INVOLVE WHAT THE K/A REQUIRES?
- MULTIPLE OR NO CORRECT ANSWERS

# POST EXAM COMMENTS

- CONCERNS FOR POST EXAM CHANGES & WHAT WILL BE NOTED IN NRC REPORT
  - ▶ WHO IDENTIFIES POST EXAM COMMENTS
  - ▶ 5% AND 10% THRESHOLDS FOR POST EXAM COMMENTS
  - ▶ 20% THRESHOLD FOR QUALITY DOCUMENTATION IN REPORTS

# OPERATING EXAM

- PEER CHECKS
- INCREASING NUMBER OF APPLICANTS COMPARED TO THE NUMBER OF SETS OF EXAM MATERIAL NEEDED

# OPERATING EXAM PEER CHECKS

- NEW GUIDANCE ISSUED
  - ▶ Peer Check Policy - web location?
  - ▶ Two Possible Cases
- HOW WILL AN APPLICANT BE GRADED
  - ▶ Consistent with Guidance - ES 303 ....
  - ▶ Consistent with Competency Grading Anchors

# OPERATING EXAM PEER CHECKS

POLICY INFO: On OL web site,  
[www.nrc.gov/reactors/operator-licensing/regs-guides-comm.html](http://www.nrc.gov/reactors/operator-licensing/regs-guides-comm.html)

1. During Categories A and B of the operating test, the NRC examiners will fill the “peer checker” role, if requested. However, only limited to acknowledging the applicant’s actions, regardless of their accuracy. At no time will the examiner correct the applicant. Facility staff may not be used as “peer checkers.”

# OPERATING EXAM PEER CHECKS

## POLICY INFO:

2. During Category C of the operating test, the operating team or crew (including applicants and surrogates, if applicable) may perform the actions of a “peer checker.” At no time will the NRC examiners or additional facility staff, stationed or called upon, serve as “peer checkers.” The applicant or surrogate who serves as a peer checker will be held accountable for their actions.

# OPERATING EXAM PEER CHECKS

CASE 1: APPLICANT SELECTS WRONG EQUIPMENT AND PEER CHECK IDENTIFIES AND CORRECTS THE ERROR.

How will an applicant be graded?

Only the applicant is held responsible, down graded with respect to the potential problem caused by the error.

Actual severity in grading would depend on the potential consequences of the error. Consistent with ES 303 D.2.c guidance, grading would be based on the competency anchors, and the grade would probably be either 1 or 2.

# OPERATING EXAM PEER CHECKS

CASE 2: APPLICANT SELECTS WRONG EQUIPMENT AND PEER CHECK DOES NOT IDENTIFY THE ERROR.

How will an applicant be graded?

Both the applicant and the peer checker would be held responsible for the error. Both would be down graded, and severity of the grading would depend on frequency and consequences of the error. Consistent with ES 303 D.2.c guidance, grading would be based on the competency anchors, and the grade would probably be either 1 or 2.

# **EXAM MATERIAL & NUMBER OF APPLICANTS**

**EVER INCREASING NUMBER OF APPLICANTS  
&  
ONE SET OR MULTIPLE SETS OF EXAM MATERIAL**

- **BETTER SCREENING OF APPLICANTS - IN GENERAL LOOKS SATISFACTORY**
- **SUBMITTING EXAM OUTLINE - TIMELY**
- **ONE SET OF EXAM MATERIAL COMPARED TO MULTIPLE SETS OF EXAM MATERIAL**

# EXAM MATERIAL & NUMBER OF APPLICANTS

## ONE SET VERSUS MULTIPLE SETS

- One Set of Exam Material - Potential Benefits
  - ▶ Less Exam Development Effort
  - ▶ Less Exam Material Review and Validation Effort
  - ▶ Potentially Less Stress on Applicants (Subjective)
    - Only for 1 to 3 hours a day, with some days not examined at all.
    - However, examined over a period of two weeks.

# EXAM MATERIAL & NUMBER OF APPLICANTS

## MULTIPLE SETS VERSUS ONE SET

- Multiple Sets of Exam Material - Pros & Cons
  - ▶ Each Applicant Examined Only for 2 or 3 Days
  - ▶ Extensive Exam Development Effort
  - ▶ Extensive Exam Review and Validation Effort
  - ▶ Limited Use of Exam Material on Next NRC Exam
  - ▶ Potentially More Stress on Applicants (Subjective)
    - Examined for only 2 to 3 days, but potentially long days over 8 hours.
    - Required to perform potentially all 15 JPMs in one day, compared to 2 or 3 JPMs per day.

# EXAM MATERIAL & NUMBER OF APPLICANTS

However, if licensee proposes multiple sets of exam material, the NRC will consider it on a case-by-case basis. We would allow it ONLY if we have the available resources to support the exam review and validation processes.

NOTE: We reserve the right (per ES 201) to reject the multiple exam material approach based on resources and efficiency.

# LICENSED OPERATOR REQUALIFICATION INSPECTION PROGRAM

## RECENT REQUAL INSPECTION ISSUES

- EXAM SECURITY
- EXAM MATERIAL DUPLICATION
- REQUAL OPERATING EXAM  
EVALUATION & FAILURE RATE

# RECENT REQUAL INSPECTION ISSUES

## EXAM SECURITY

- POTENTIAL MATERIAL COMPROMISE
  - ▶ Exams Left Unattended - Both Licensee & NRC
  - ▶ Exam Material Briefing - Who, When, & Where
- Exam Room Security
  - ▶ Level of Security - Locked Doors, but who has the keys and/or combinations?
  - ▶ Room Design - NEW FAQ #34

# EXAM MATERIAL DUPLICATION

- PERCENTAGE DUPLICATION ???
  - ▶ White Paper - proposed policy being discussed with NEI & INPO. (Adams ML 021490522)
  - ▶ Proposed Policy for Written Exam - No more than 50% of items appearing on any single exam should be repeated from any previous exams within the same equal training cycle (either one or two year cycle).
  - ▶ Discussion is still ongoing. Nothing is yet final.

# EXAM MATERIAL DUPLICATION

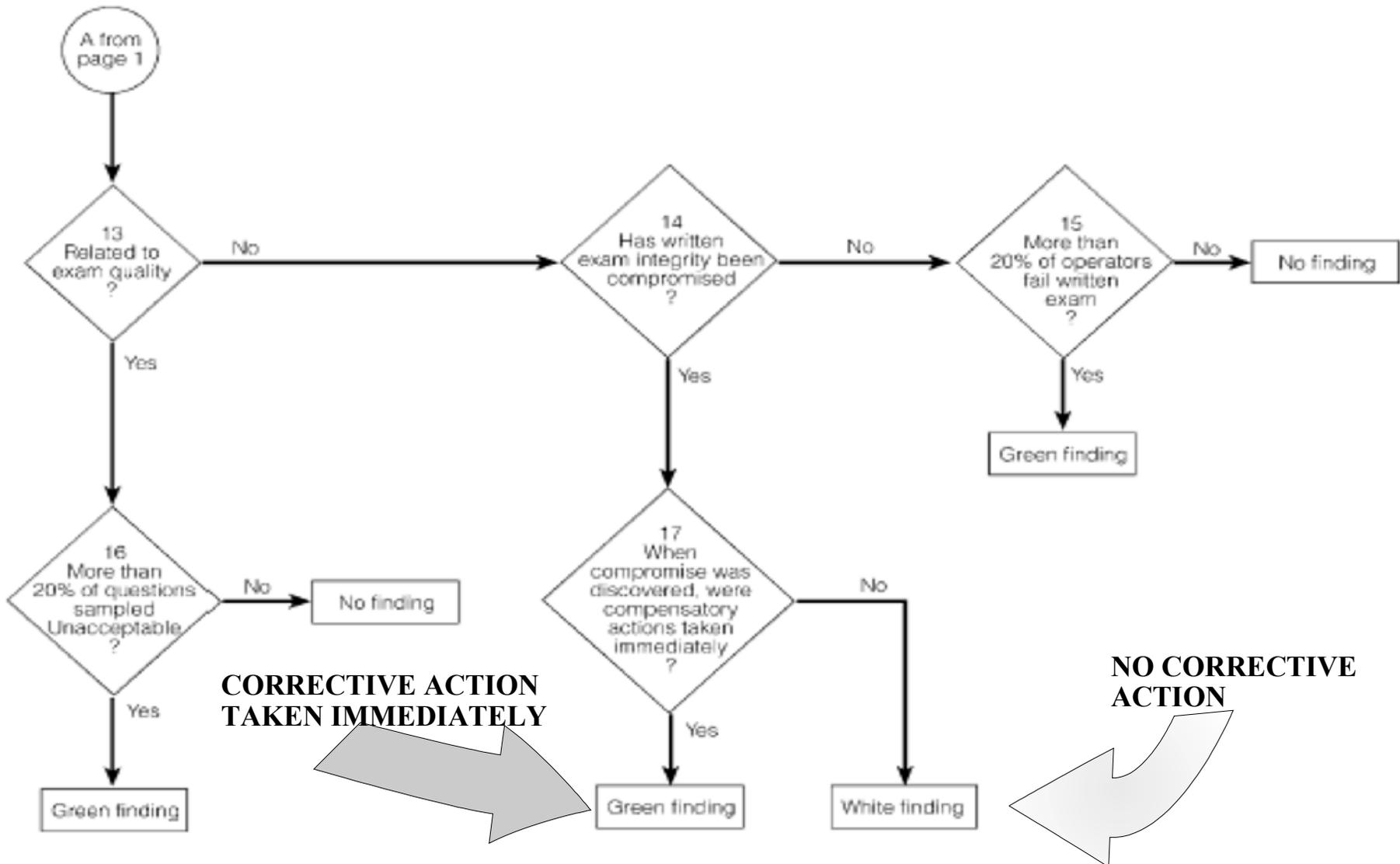
## VALIDATION VERSUS PREDICTABILITY COOPER STATION

- YEAR 2000 BIENNIAL WRITTEN EXAM
  - ▶ Compromised due to validation process
  - ▶ Indication of predictability through statistical evaluation and gained advantage through the validation process
  - ▶ Originally identified by licensee in August 2000 and 2001 through problem identification report -NRC inspection finding in October 2001 requal inspection

# EXAM VALIDATION COOPER STATION

- FINAL ASSESSMENT - WHITE FINDING
  - ▶ Examination was not administered in an equitable and consistent manner and thereby compromised.
  - ▶ Specifically, the licensee used inappropriate validation process.
- LICENSEE DID IDENTIFY THE CONCERN
  - ▶ Failed to comprehend the significance of the concern.
  - ▶ No compensatory actions were taken.
- FINAL REPORT ISSUED MARCH 26, 2002  
EA-01-298

Operator Requalification Human Performance SDP  
(February 15, 2002)  
Page 2



# REQUAL FAILURE RATE

- REQUAL OPERATING EXAM SDP
- STATISTICS OF PASS/FAIL RESULTS
- GREEN FINDINGS IN THE REGION
- INDIAN POINT 2 - YELLOW FINDING

# SDP

## SIGNIFICANCE DETERMINATION PROCESS

- MC 0609, Appendix I, Rev. 03/27/2002
- Simulator Operational Evaluation - SDP Metrix for simulator crew evaluation results

# Simulator Operational Evaluation

September 21, 2000

Number of Crews  
with  
UNSAT Performance in the  
Annual Operating Test

|    | 1  | 2  | 3  | 4 | 5  | 6  | 7  | 8  |
|----|----|----|----|---|----|----|----|----|
| 4  | G  | W  | Y  | Y | NA | NA | NA | NA |
| 5  | G  | W  | Y  | Y | Y  | NA | NA | NA |
| 6  | NF | G  | W  | Y | Y  | Y  | NA | NA |
| 7  | NF | G  | W  | Y | Y  | Y  | Y  | NA |
| 8  | NF | G  | W  | W | Y  | Y  | Y  | Y  |
| 9  | NF | G  | G  | W | Y  | Y  | Y  | Y  |
| 10 | NF | G  | G  | W | W  | Y  | Y  | Y  |
| 11 | NF | NF | G  | W | W  | Y  | Y  | Y  |
| 12 | NF | NF | G  | G | W  | W  | Y  | Y  |
| 13 | NF | NF | G  | G | W  | W  | Y  | Y  |
| 14 | NF | NF | G  | G | W  | W  | W  | Y  |
| 15 | NF | NF | G  | G | G  | W  | W  | Y  |
| 16 | NF | NF | NF | G | G  | W  | W  | W  |

Number of Crews  
that took the  
Annual Operating  
Test  
(Includes Dual Units)

NF = < 20% Failure Rate - No Finding  
G = 20 - 34% Failure Rate  
W = >34 - 50% Failure Rate (NUREG-1021, Rev 8 - UNSAT Requalification Program)  
Y = >50% Failure Rate  
NA = Not Applicable

Note: If more than 16 crews are tested, or more than 8 crews are UNSAT in a given cycle, use the percentages above to determine the appropriate color.

# REQUAL PASS/FAIL RESULTS

REGION III STATS - LATE 2000 TO MID 2002

- CREW - 93.7% PASS RATE
  - ▶ TWO BELOW 80% - GREEN FINDINGS
- WRITTEN - 96% PASS RATE
- INDV OP TEST - 96.4% PASS RATE

# INDIAN PT 2 - YELLOW FINDING

- 4 OUT OF 7 CREWS FAILED 2001 ANNUAL OPERATING EXAM (2 Staff and 2 Operating)
- 2 CREWS FAILED ON CRITICAL TASKS
- 2 CREWS FAILED ON COMPETENCY
- NRC FINAL ASSESSMENT - YELLOW REPORT ISSUED FEBRUARY 28, 2002  
EA 01-294 - ML020590217

# INDIAN PT 2 - YELLOW FINDING

## Common Themes

### The “BIG 5” Knowledge/Ability Deficiencies

- Adherence to and use of procedures
- Knowledge of Plant and Systems Responses
- Diagnosis of Events and Conditions
- Control Board Operations
- Reactivity Management

# INDIAN PT 2 - YELLOW FINDING

## Underlying Causes

- Prior remediation efforts were narrowly focused
- Some areas of training were enhanced, but instructional delivery, trainee evaluation, and feedback processes needed improvement
- High turn-over of operations training management and instructional staff
- Limited operations department involvement with Operations Training Activities and Initiatives

# UPCOMING ISSUES

## NEW 10 CFR 55.46

- SIMULATION FACILITIES
  - ▶ Based on reactivity manipulation rule change, to allow the use of simulators for the 5 reactivity manipulations for initial license eligibility
  - ▶ Adding this change to existing requal inspections
  - ▶ Possible pilot inspections - possible inspection plan changes to add the simulator facility review
  - ▶ This is still under discussion, for approach, and scope of requal inspection

# UPCOMING ISSUES

NUREG 1021 REV 9

(ONLY TENTATIVE NOTHING APPROVED)

- NRC LOOKING INTO PROPOSED CHANGES TO INITIAL EXAM PROCESS
- NRC WEB SITE - OPERATOR LICENSING PUBLIC MEETINGS
  - ▶ [www.nrc.gov/reactors/operator-licensing/meetings.html](http://www.nrc.gov/reactors/operator-licensing/meetings.html)
- ANY QUESTIONS OR CONCERNS CONTACT YOUR NEI REPRESENTATIVE

# CLOSING REMARKS

- E-MAIL ADDRESS [hxp1@nrc.gov](mailto:hxp1@nrc.gov)
- Phone Number 630-829-9707
- Any questions please feel free to contact me at any time.
- Please fill out the feedback form.

**KEEP UP THE GOOD WORK!!**

It is a cooperative effort.



# THANK YOU

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