

NRC Research and Test Reactor Oversight Activities

Anthony Mendiola, Chief Research and Test Reactors Oversight Branch U.S. Nuclear Regulatory Commission

2018 TRTR Annual Meeting October 31, 2018

Presentation Agenda



- PROB Staff Changes
- Oversight Year in Review
 - RTR Inspection Program Year in Review
 - Focus on RTR Safety Culture
 - RTR Operator Licensing Program Year in Review
- Operator Licensing Applications
 - Process Improvements
 - Focus on Application Issues and Medicals
- Operator License Reactivation
- RTR Security Program

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Oversight Branch Staff



Anthony Mendiola, Branch Chief

- Craig Bassett, Reactor Inspector
- Johnny Eads, Reactor Inspector
- Mike Morlang, Reactor Inspector
- Ossy Font, Reactor Inspector
- John Nguyen, Reactor Examiner
- Paulette Torres, Reactor Examiner
- Ashley Ferguson, Rx Inspector

- Michele DeSouza, Reactor Examiner
- Beth Reed, Security Specialist
- Mike Takacs, Security Inspector
- Bill Schuster, Security Inspector
- Nicole Parker, Licensing Assistant
- Angela Baxter, Op Lic Assistant
- Caroline "Jedie" Randiki, Op Lic Assistant

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RTR Inspection Program – Year in Review



- Inspection results continue to document that NRC-licensed RTRs are being operated safely and securely
- Violations have significantly decreased
- Overall Inspection observations and findings
 - Repeated findings from previous inspections not an issue
 - Inspection follow-up actions are up minor issues

RTR Inspection Program – Year in Review



- Severity Level IV Violations (3)
 - NRC Approved Reviewing Official
 - Tech Spec Annual Audit
 - Evacuation Drills not held
- Non Cited Violations (2)
 - Tech Spec Deviations
- Reactive Inspections (1)
 - Safety Conscience Work Environment (SCWE)

RTR Inspection Program – Year in Review



- Future inspection challenges
 - Mo-99 Facilities
 - Physical security and cyber security threat
- Balancing Inspector workloads
 - More inspectors on staff cross qualifying staff
 - Development of Mo-99 inspection staff

What is Safety Culture?



The Commission defines Nuclear Safety
Culture as the core values and behaviors
resulting from a collective commitment
by leaders and individuals to emphasize
safety over competing goals to ensure
protection of people and the
environment.

What is the NRC policy on safety culture?



 The expectation that individuals and organizations performing or overseeing regulated activities establish and maintain a positive safety culture commensurate with the safety and security significance of their activities and the nature and complexity of their organizations and functions

Traits of a Healthy Safety Culture



- Leadership Safety Values and Actions
- Work Processes
- Effective Safety Communications
- Problem Identification and Resolution
- Continuous Learning
- Respectful Work Environment
- Personal Accountability
- Environment for Raising Concerns
- Questioning Attitude

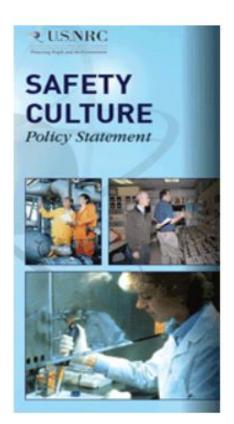
Significance within the RTR community



- Very Significant
- RTRs have minimal direct interface with NRC regulators
 - No resident inspectors No region based inspectors
 - NRC onsite time is small compared to other regulated facilities
 - Associated staff support for a single facility is very small
- NRC must trust and rely upon all RTR managers and operating staff to demonstrate proper safety culture every day regardless of completing goals

NRC Educational Materials Available for Safety Culture









https://www.nrc.gov/about-nrc/safety-culture.html

Operator Licensing Program – Year in Review



- FY 18 RTR Exam Performance remains consistent
 - Administered exams to 75 RO and 25 SRO candidates in FY18
 - Written Exam Pass rate
 - 67/75 for Reactor Operators (89%)
 - 11/11 for Senior Reactor Operators (100%)
 - Operating Exam Pass Rate
 - 73/75 for Reactor Operators (97%)
 - 25/25 for Senior Reactor Operators (100%)

RTR Operator License Docket Summary



- 375 Active RTR Licenses
 - 193 Reactor Operators
 - 181 Senior Reactor Operators
 - 1 Limited Senior Reactor Operator
- 51% of active licenses have conditions
 - Most of these are corrective lens (84%)
 - Prescribed Medications (13%) Other (3%)

RTR Operator License Docket Management



- Electronic Processing System (RPS-OL)
 - 88 Terminations
 - 26 License Renewals
 - 55 Waivers
 - 146 Amendments (Changes to License)
- Still have issues related to the backlog of operator licensing paperwork.

Guidelines for RTR Op Licensing Applications



- New examination requests and any examination changes as soon as possible in advance
- Initial license applications submitted at least 14 days prior to the exam, sooner if waivers requested
- License renewal applications submitted at least 30 days prior to license expiration date
- Consider the use of EIE and ODD
- Protect against PII disclosures
- Check your mailing addresses

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Operator Licensing Application Process Improvements



 Standardized Application Forms

 Electronic Secure Submittal to the NRC

 Operator Digital Docket and RPS-OL





Standardized Application Forms



- NRC Form 396 and 398 Revisions complete
 - Based on Industry feedback
 - Provided Clarification of instructions
 - Removal of unnecessary fields
 - Available on NRC Forms website
- OMB approved forms which reduce burden on submitter
- Forms standardized to support for digital records

Finding NRC forms for Operator Licensing





Finding NRC forms for Operator Licensing







NRC Makes Surry's Subsequent License Renewal Application Publicly Available

More News » More Speeches »

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31st Annual Regulatory Information



In a Nuclear Emergency ...



Know what to do

| HOME | ABOUTUS |
|--------------------|-------------------------|
| NEWS RELEASES | STRATEGIC PLAN |
| EVENT REPORTS | BUDGET & PERFORMANCE |
| ADAMS | AGENCY FINANCIAL REPORT |
| OPEN GOV | LICENSE FEES |
| DIGITAL GOVERNMENT | HISTORY OF THE NRC |
| THE STUDENT CORNER | CAREER OPPORTUNITIES |
| PHOTOS & VIDEO | NRC ETHICS |
| FOR DEVELOPERS | AGENCY STATUS |
| | CONTACT US |
| | |

| POPULAR DOCUMENTS | STAY CONNECTED | | |
|-----------------------------------|----------------------|--|--|
| INFO DIGEST | 8LOG | | |
| FACT SHEETS & BROCHURES | FACEBOOK | | |
| FORMS | | | |
| ELECTRONIC SUBMITTALS APPLICATION | TWITTER | | |
| ADJUDICATORY SUBMISSIONS | FLICKR | | |
| NRC REPORTS - NUREG | | | |
| NRC REGULATIONS - 10-CFR | ₩ GOVDELIVERY | | |
| INSPECTION REPORTS | | | |
| PLAIN WRITING | RSS | | |
| ENFORCEMENT ACTIONS | | | |
| RULEMAKING | | | |

Operator Licensing Application Process Improvements



 Standardized Application Forms

Electronic Secure
 Submittal to the NRC

 Operator Digital Docket and RPS-OL



Electronic Secure Submittal to the NRC



- Use of the Electronic Information Exchange (EIE) system
 - Cost-effective, secure, timely delivery mechanism
 - Requires a rudimentary certificate for authentication and authorization (https://pki.nrc.gov/ecs/apps/eie/dcc-eie-gf.html)
- Contact the EIE Helpdesk at 1-866-672-7640 or email at <u>Meta_System_Help_Desk.Resource@nrc.gov</u>



How to get an EIE certificate:



<u>www.nrc.gov</u> → "Site Help" → "Electronic Submittals Application" (https://www.nrc.gov/site-help/e-submittals.html)





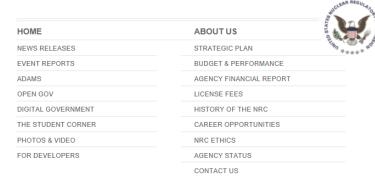






31st Annual Regulatory Information Conference





| POPULAR DOCUMENTS | STAY CONNECTED |
|-----------------------------------|----------------|
| INFO DIGEST | 8 BLOG |
| FACT SHEETS & BROCHURES | FACEBOOK |
| FORMS | TAGEBOOK |
| ELECTRONIC SUBMITTALS APPLICATION | TWITTER |
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| INSPECTION REPORTS | |
| PLAIN WRITING | RSS |
| ENFORCEMENT ACTIONS | |
| RULEMAKING | |

Operator Licensing Application Process Improvements



 Standardized Application Forms

 Electronic Secure Submittal to the NRC

 Operator Digital Docket and RPS-OL





Operator Digital Docket (ODD)



- Automation of components of the OL process
- Electronic document delivery mechanism
 - cost-effective, secure and timely delivery of documents to NRC
- Data extraction solution for submitted applications
 - Parsed and delivered to the Reactor Program System
 - Reduces the need to manually enter data into RPS-OL
 - saves time
 - minimizes the risk of data entry errors.
- https://www.nrc.gov/site-help/e-submittals.html



The Electronic Submittals application allows electronic transmission of information to the NRC pertaining to licensing actions, associated hearings, and other regulatory matters. The application ensures that information sent to the NRC via the Internet is secure and unaltered during transmission. For other communications with the NRC, see our Contact Us page.

The Electronic Submittals application operates 24 hours daily except when the application must be taken down for scheduled maintenance. System operators will post a notice on the Electronic Submittals home page whenever a scheduled outage is planned.

Users new to the Electronic Submittals application or in need of instructions should select the link below before accessing their applicable system:

Getting Started

On this page:

What's New On Our Site

Special Features

Privacy Policy

Site Disclaimer

For Developers

NRC Site Accessibility

Contact the NRC Webmaster

Plugins, Viewers, and Other Tools

Electronic Submittals Application

- Electronic Submission Systems
- Electronic Submission for Operator Licensing Applications
- Electronic Submission for Licensing Applications

The NRC has published Users' Guides for each of its Electronic Submissions Systems. They are available at the following links:

Adjudicatory Submissions

General Form Submissions

Criminal History Submissions

Electronic Generic Fundamentals Examination Registration and Operator Licensing Application Submission

The operating hours of the Help Desk have changed. The new hours are 9 AM to 6 PM Monday through Friday (except for Federal holidays.)

Improving Record Keeping



- NRC is moving to digital record keeping for operator dockets (Operator Digital Dockets (ODD))
- All medical related correspondence and records are maintained digitally
- Recommend use of EIE for sending and receiving medical information to/from NRC:
 - Security (encryption)
 - Expediency
 - Cost savings (shipping)
 - Skips irradiation!

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Common Application issues



- Common application issues seen this year
 - Unclear or missing application information
 - Weeks of training calculation 1 week = 40 hours
 - Handwriting/spelling difficulties
 - Mailing address issues Student addresses
 - Incomplete waiver information
 - Medical information dates

Experience Information on NRC Form 398



| | | | | 1 | 1 | | | |
|--|---|----------------|--------------|------|---------------------------------------|----------------|-------------|--------------|
| | 20. Power Reactor Operator Training Program | | | | | | | |
| a. Has the applicant completed the Operator Training Program accredited by the National Nuclear Accrediting Board? | | | | | es No | | | |
| b. Is a "Plant-Referenced Simulator" (As defined in 10 CFR 55.4) used in the Operator Training Program? | | | | | es No | | | |
| | | 21. Training (| Since Last | Appl | lication - See Instructions) | | | |
| a. Classroom | From (MM/YYYY) | To (MM/YYYY) | No. of Weeks | | | From (MM/YYYY) | To (MM/YYYY | No. of Weeks |
| 1 - Nuclear Power Plant Fundam <mark>en</mark> tal | 5 | | | d. | Extra Person on Shift in Control Room | | | |
| 2 - Plant Systems | | | | e. | Time on Shift Above 20% Power | | | |
| 3 - Plant Procedures | | | | f. F | Requalification | | | |
| b. Simulator | | | | g. (| Other (Specify below) | | | |
| c. SRO Instruction | | | | | 7 | | | |
| 22. Significant Control Manipulations | | | | | | | | |
| DESCRIPTION | | PLANT | SIMULATOR | ₹ . | DESCRIPTION | | PLANT S | IMULATOR |
| а. | | | | f. | . / | | | |
| b. | | | | g | g. | | | |
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NRC FORM 398 (01-2018) Page 1 of 3

Medical Information on NRC Form 396



PERSONALLY IDENTIFIABLE INFORMATION - WITHHOLD LINDER 10 CER 2 390

| TERSONALET IDENTIFIABLE IN ORMATION - WITHINGED ONDER 10 GT R 2.330 | | | | | |
|--|---|--|--|--|--|
| NRC FORM 396 (01-2018) 10 CFR 55.21, 55.23, 55.57, 55.31 55.33, 55.53, 55.57. U.S. NUCLEAR REGULATORY COMMISSION CERTIFICATION OF MEDICAL EXAMINATION BY FACILITY LICENSEE | APPROVED BY OMB: NO. 3150-0024 Estimated burden per response to comply with this mandatory collection request: 30 minutes. NRC requires this information to determine that the physical condition and health of operator licensees is such that the applicant vould not be expected to observe personal entries endangering the public health and safety. Send comments regarding burden estimate to the Information Services Brench (T-2F43), U.S. Nuclear Regulatory Commission, Weshington, DC 20555-0001, or by e-mail to Inforced the Resource Byre app. van do to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0024), Office of Management and Budget, Weshington, DC 20503. If a meens used to impose an information collection does not display a currently valid ONE control number, the NRC may not conduct or sponsor, and a person is not required to respons oft, the firmation collection does not display a currently valid on the control number, the NRC may not conduct or sponsor, and a person is not required to respons | | | | |
| Name of Applicant/Operator (Last Name, First Name, Middle Name) | Applicant/Operator Docket Number Date of Most Recent Blennial Examination (MM/DD/YYYY) | | | | |
| Full Address of Applicant/Operator | Facility Docket Number | | | | |
| Tuli Address of Applicant Operator | 050- 052- | | | | |
| A. MEDICAL EXAM INFORMATION | | | | | |
| BASED ON THE RESULTS OF THE PHYSICAL EXAMINATION, INCLUDING INFORMATION FURNISHED BY THE APPLICANT/ OPERATOR, I CERTIFY THAT THE ABOVE NAMED APPLICANT/OPERATOR HAS BEEN FOUND TO MEET THE MEDICAL REQUIREMENTS FOR LICENSED OPERATORS AT THIS FACILITY. I ALSO CERTIFY THAT IN REACHING THIS DETERMINATION, THE GUIDANCE CONTAINED IN THE ANSI STANDARD OR AN APPROVED NRC ALTERNATIVE METHOD WAS FOLLOWED AND THAT DOCUMENTATION IS AVAILABLE FOR REVIEW BY THE NRC. | | | | | |
| GUIDANCE USED: | | | | | |
| ANSI/ANS 3.4 1983 ANSI/ANS 3.4 2013 ANSI/ANS 3.4 1996 ANSI/ANS 15.4 1988 | ANSI/ANS 15.4 2007 Other (Specify below) ANSI/ANS 15.4 2016 | | | | |
| | | | | | |
| Typed or Printed Name of Physician Physician's Certification | Date (MM/DD/YYYY) State License Number | | | | |
| BASED ON THE RECOMMENDATION OF THE PHYSICIAN, IT IS REQUESTED THAT THE APPLICANT/OPERATOR LICENSE BE CONDITIONED AS FOLLOWS: Check all that apply. PROVIDE EXPLANATION IN BOX BELOW AND ATTACH APPLICABLE SUPPORTING MEDICAL EVIDENCE [letter from the examining physician outlining the condition, treatment and or medication (name, dose, timing & tolerance)] and medical examination/ test results (current blood pressure reading, A1C, TSH levels, etc.). | | | | | |

Recap of medical information from last year



- Use the ANS 15.4 Standard, "Selection and Training of Personnel for Research Reactors"
 - Various versions (1988, 2007 and 2016)
- Focus on Section 7, "Medical certification and monitoring of licensed personnel"
- Basis for the RTR medical professional assessments and NRC medical review officer recommendations



Basis for Health Requirements



- Physical condition and general health of operators <u>shall</u> be such that they are capable of carrying out licensed activities and perform associated tasks
- For conditions that involve sudden <u>incapacitation</u>, these may be accommodated by restricting activities, imposing a medical regime, or requiring a second individual present (no solo) who <u>shall</u> be able to shut down the reactor and summon help.

General Requirements



- Candidates <u>shall</u> demonstrate **stability and capacity** for all of the following:
 - Mental Alertness and Emotional Stability
 - Acuity of Senses and ability of expression
 - Stamina, Range of motion, Dexterity to support assigned duties
- Candidates <u>shall</u> be free of any of the following:
 - Mental or physical impairments
 - Any medical, surgical, or other professional treatment
 - Any condition, habit, or practice that might result in incapacitation.

Disqualifying Conditions



The presence of any of the following conditions, which have a high probability of sudden or unexpected incapacitation, unless adequately compensated, shall disqualify the individual for solo operation.



Disqualifying Conditions



- Disqualifying conditions include:
 - Respiratory (Asthma)
 - Cardiovascular (Heart conditions)
 - Endocrine, nutritional, metabolic (Insulin dependent diabetes)
 - Neurological (epilepsy)
 - Mental Condition (Psychological testing, personality disorders, suicide attempts/threats, psychotic disorders, alcohol and drug abuse)
 - Medication (Serious prescription drug side effects)
- Some of these are disqualifying <u>for all conditions</u>, unless treated and corrected

Waivers and Limited Approvals



- Waivers considered when minimum requirements not met, but applicant can <u>demonstrate complete capacity to perform assigned</u> <u>duties</u>. Information required:
 - Medical history and results/findings of physical examinations
 - Practical tests and demonstrations of ability to perform assigned duties
 - Certification of Level 2 that individual can safely perform duties
- Limited Approval (no solo)
 - 2nd person present when performing certain assigned duties
 - 2nd person can be summoned when assistance needed
- Follow-up medical examinations (6 to 12 Months)

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Regaining Active Operator Status



- Issue encountered at multiple RTR facilities
- Multiple regulations (10 CFR 55), NRC publications, and historical practices involved
- Power reactor practices and simulator use
- License reactivation is distinct from the requalification requirement

10 CFR 55.53 "Conditions of licenses"



10 CFR 55.53 (e) If a licensee has not been actively performing the functions of an operator or senior operator, the licensee may not resume activities authorized by a license issued under this part except as permitted by paragraph (f) of this section. To maintain active status, the licensee shall actively perform the functions of an operator or senior operator on a minimum of seven 8-hour or five 12-hour shifts per calendar quarter. For test and research reactors, the licensee shall actively perform the functions of an operator or senior operator for a minimum of four hours per calendar quarter.

10 CFR 55.53 "Conditions of licenses"



- 10 CFR 55.53 (f) If paragraph (e) of this section is not met, before resumption of functions authorized by a license issued under this part, an authorized representative of the facility licensee shall certify the following:
- (1) That the qualifications and status of the licensee are current and valid; and
- (2) That the licensee has completed a minimum of 40 hours of shift functions under the direction of an operator or senior operator as appropriate and in the position to which the individual will be assigned. The 40 hours must have included a complete tour of the plant and all required shift turnover procedures. For senior operators limited to fuel handling under paragraph (c) of this section, one shift must have been completed. For test and research reactors, a minimum of six hours must have been completed.

10 CFR 55.53 "Conditions of licenses" (cont.)



 10 CFR 55.53 (h) The licensee shall complete a requalification program as described by 55.59"

Reactivation Scenarios



- A Single operator is inactive
- B All operators are inactive, but requalification program requirements are met
- C All operators are inactive and requalification program requirements are not met

Scenario A Resolution



- 10 CFR 55.53 (f) If paragraph (e) of this section is not met, before resumption of functions authorized by a license issued under this part, an authorized representative of the facility licensee shall certify the following:
- (1) That the qualifications and status of the licensee are current and valid; and
- (2) That the licensee has completed a minimum of 40 hours of shift functions under the direction of an operator or senior operator as appropriate and in the position to which the individual will be assigned. The 40 hours must have included a complete tour of the plant and all required shift turnover procedures. For senior operators limited to fuel handling under paragraph (c) of this section, one shift must have been completed. For test and research reactors, a minimum of six hours must have been completed.

Scenario B and C Resolution



• 10 CFR 55.53 does not address a scenario where there is no active licensed operator to supervise an individual for under instruction watch at the facility

Scenario B and C Resolution (cont.)



- Historical Context
- Practices allowed for power reactors
- RTR operational differences
- Very high turnover, small permanent staff

Next steps



- NRC is exploring how to best resolve Scenarios B and C
- Resolution may involve changes to NRC Examiner Standards
- RTR community will be informed prior to any changes

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Security Program Oversight



- Security Inspection Program
 - OIG Audit No issues
- Physical Security Plan Reviews
- Compensatory Measures Confirmatory Action Letter closures
- Security and Emergency Exercises
- Security Program Updates

Presentation Summary



- RTR Inspection results facilities continue to be operated safely and securely, violations are down
- SCWE is an agency focus area
- RTR Operator Licensing examination performance has been consistent with slight improvements
- Operator Licensing process improvements implemented
- Applications and Medical paperwork is a focus area
- Operator Licensing reactivation solution under development
- Security Program successfully audited and active

Questions



