

Update on Nuclear Test Personnel Review (NTPR) Program

*Brief for: Veterans' Advisory Board on
Dose Reconstruction (VBDR)*

Paul K. Blake, Ph.D.

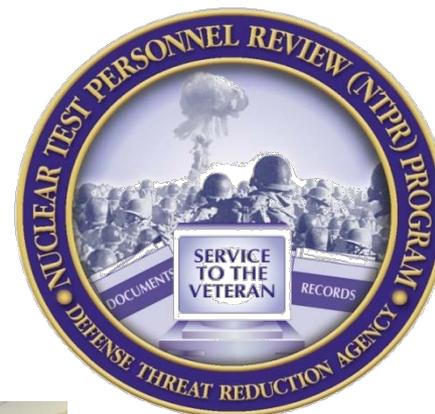
March 11, 2011





Agenda

- Program Metrics
- Technical Advances
- Quality Advances
- Communication Advances
- VBDR Recommendations



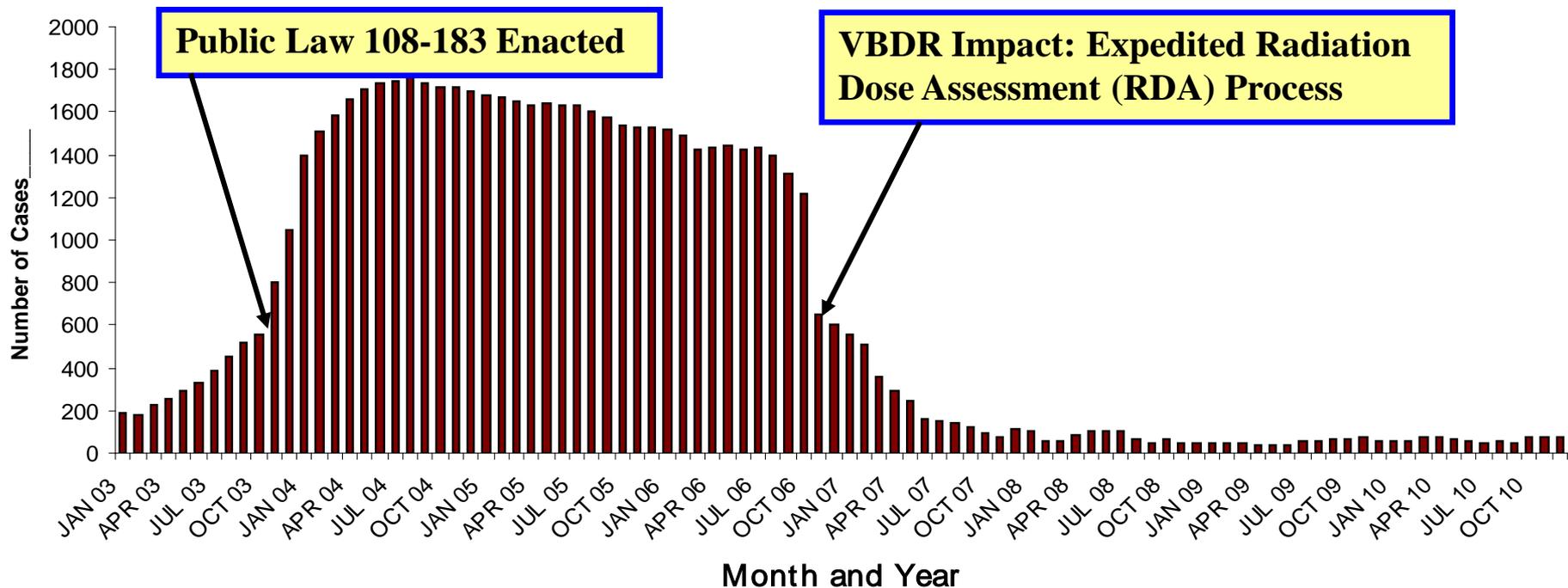
NTPR-Atomic Veteran Team (28 JAN 2011)



Metric: Manageable Case Load

Metric Assessment: Achieved

**Non-Presumptive Pending Case Load
(January 2003 - December 2010)**

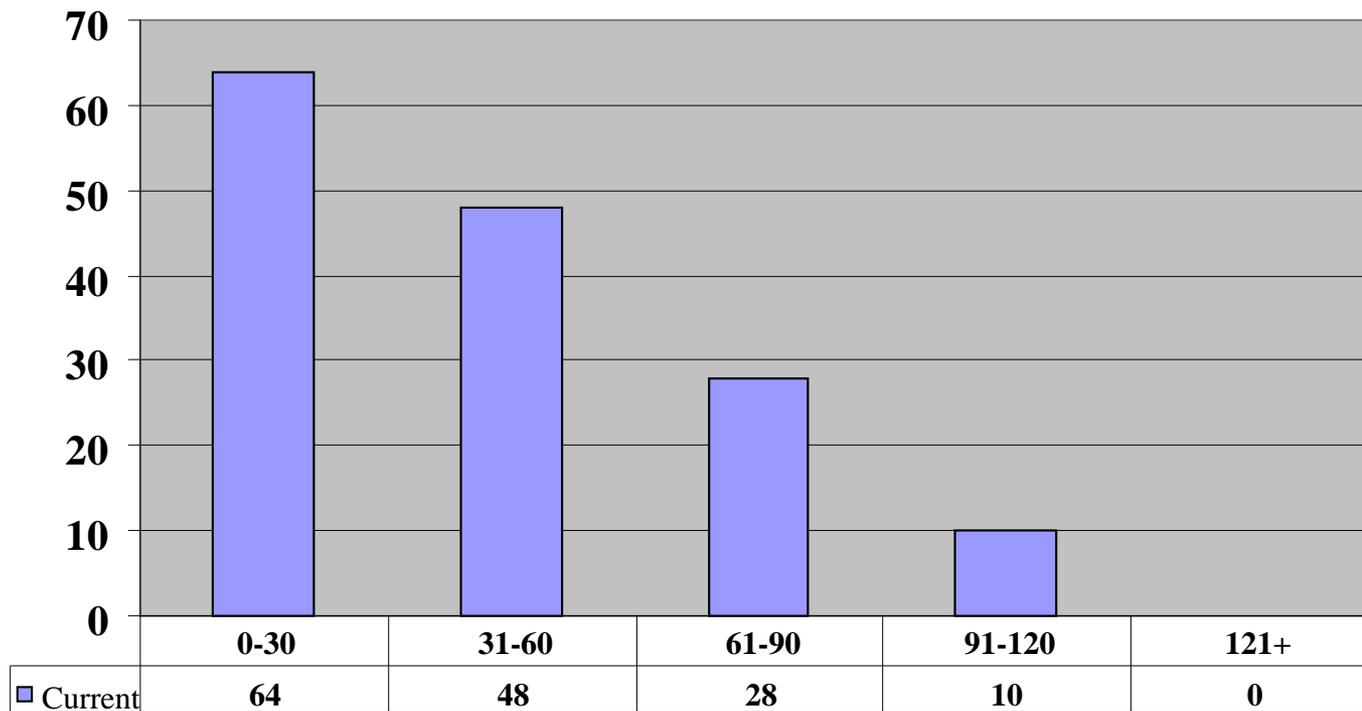




Metric: Complete Cases in 180 Days

Metric Assessment: Achieved

Total Cases by Days Pending (31 DEC 2010)





Metric: Complete Cases in 180 Days

Note: One case exceeded 180 days (189 days)

Longer response times were due to:

- Non-participant cases requiring extensive records retrieval and review.
- Complex, multi-series scenarios requiring additional time for response.
- Lengthy veteran response times for questionnaire and/or SPARE return.



Metric – Increase Productivity

Metric Assessment: Achieved

30% Increase in Workload

CY2010 Completed Cases	Total
Expedited RDA	283 (220)
Non-Expedited (H/N) RDA	75 (54)
Non-Expedited (NTS/PPG) RDA	4 (1)
VA Presumptive	176 (116)
VA Ionizing Radiation Registry	26 (37)
Department of Justice	93 (94)
Non-participant, Personal, Congressional	587 (437)
Note: CY2009 Metrics in Parenthesis	1244 (959)

H/N: Hiroshima/Nagasaki; NTS/PPG: Nevada Test Site/Pacific Proving Ground



Metric – Continuous Improvement

Metric Assessment: Achieved

- Publication on DTRA website of 10 NTPR standard procedures/methods and 1 technical report (TR). Publication of 2 sponsored NCRP reports. Three technical memorandums (TM) produced and two significantly revised.
- Presentation of RDA double blind studies to VBDR subcommittee (SC) # 1
- Submission of 4 quarterly quality reports to VBDR SC3



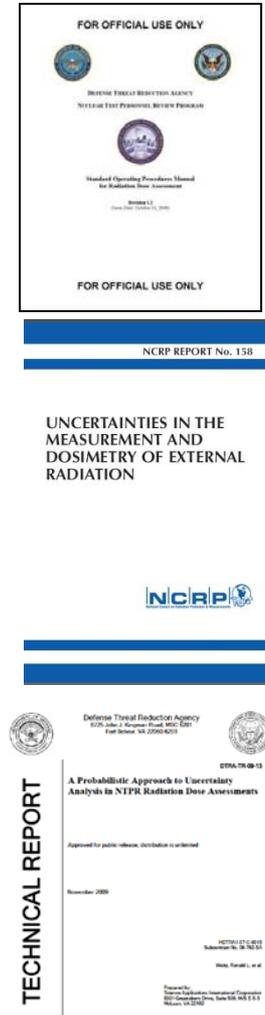
Metric – Continuous Improvement

- Level 1: 32 CFR 218
- Level 2: NTPR SOP/SM
- Level 3: Peer Review Publications
- Level 4: DTRA Technical Reports
 - DTRA-TR-10-XX
- Level 5: NTPR Technical Memos
 - NTPR-TM-10-XX

Note: Level 1-4 documents available at:

<http://www.dtra.mil/SpecialFocus/NTPR/NTPRHome.aspx>

(as of 11Feb2011)





Metric – Continuous Improvement

2010 Publications

NTPR-SOP-RA01: Radiation Dose Assessment for Cases Requiring Detailed Analysis

NTPR-SOP-RA03: Standardized RDA Reports & Calculational Worksheets

NTPR-SOP-RA04: Internal RDA Reviews

NTPR-SM-ED01: Film Badge Dose Assessment

NTPR-SM-ED02: Whole Body External Dose - Reconstruction

NTPR-SM-ED03: Skin Dose from External Sources

NTPR-SM-ED04: Skin Dose from Dermal Contamination

NTPR-SM-ED05: Lens of the Eye Dose

NTPR-SM-ID01: Dose to Organs from Intake of Radioactive Materials

NTPR-SM-UA01: Dose Uncertainty and Upper Bound Determinations

DTRA-TR-09-16: Rad. Doses to Skin from Dermal Contamination

NCRP Report No. 163: Radiation Dose Reconstruction: Principles & Practices

NCRP Report No. 164: Uncertainties in Internal Radiation Dose Assessment

NTPR-TM-10-01: Review...Australian Participants in British Nuclear Testing

NTPR-TM-10-02: NTPR Virtual Private Network Throughput Study

NTPR-TM-10-03: ...Interim Report on Expedited NTPR Radiation Doses

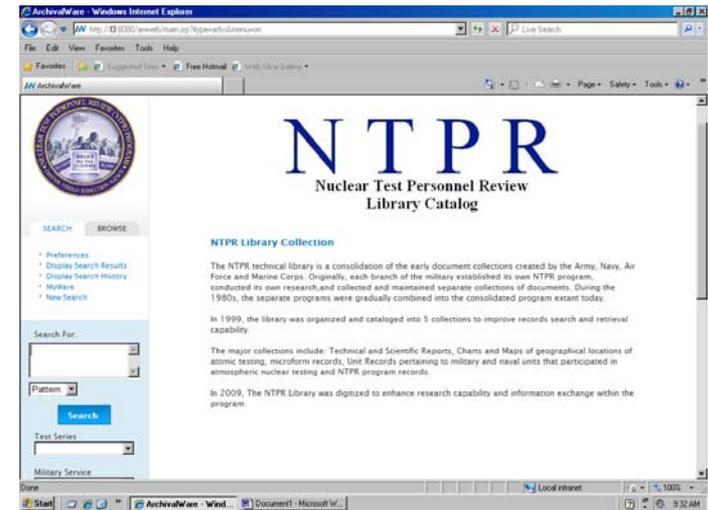
NTPR-TM-09-04.a: ...Gamma Source Modification Factor for Ships

NTPR-TM-09-07.a: ...Internal Dose from Inhalation of Descending Fallout



Technical Advances – Digitization

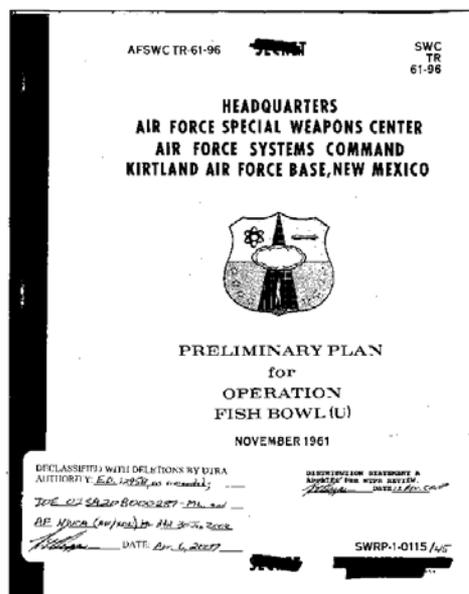
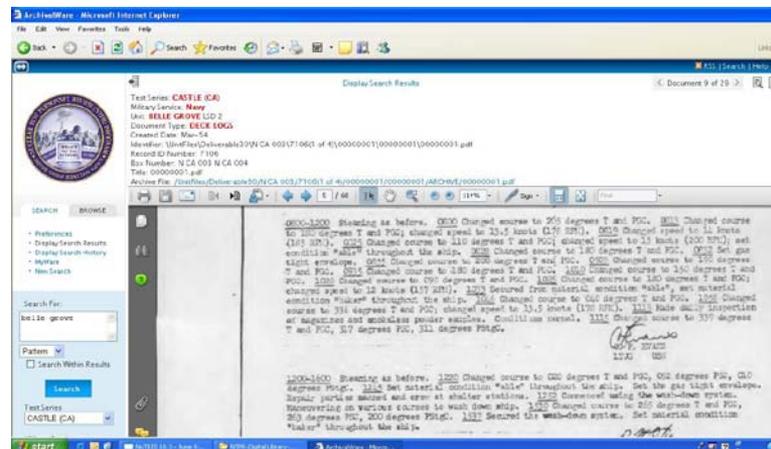
- **Verification of participation**
 - 500,000 NTPR document pages were digitized and are now searchable via the NTPR library (**1.7 TB**)
 - The ability to perform “Google-like” searches is a significant improvement over previous hardcopy searches.
- **Case file management**
 - 8000+ case files digitized (**76 GB**)
 - Supports offsite NTPR team member review via NTPR Virtual Private Network (VPN) – increasing NTPR productivity.





Technical Advances – Digitization

- NTPR Digital Library includes:
 - Command Histories
 - Deck Logs
 - Diaries
 - Flight Logs
 - Morning Reports
 - Muster Rolls
 - Operational Orders
 - Rosters
 - Security Certifications
 - And much more...





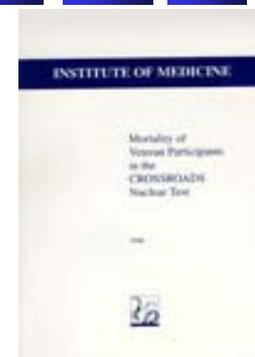
Technical Advances – Expedited Doses

- **Objective:** Publish technical basis documentation (TBD) for NTPR expedited radiation dose assessments.
- **Accomplishments:**
 - Completed a draft expedited dose TBD - OCT 2010
 - Briefed VBDR SC1 in OCT 2010.
 - Per SC1 feedback, revised TBD, and expanded exposure participant groups to 30.
 - Briefed SC1 on 10 MAR 2011.
 - Projected publication date: APR 2011.



Technical Advances – Radioepidemiology

- DTRA is co-sponsoring a follow-on atomic veteran radioepidemiology study.
- This is a study of potential radiogenic disease in Trinity, Crossroads, Greenhouse, Upshot-Knothole, Castle, Redwing, Plumbbob, & Hardtack I Operation veterans.
- Researchers have been granted limited NTPR VPN access.



Radioepidemiology Team (JAN 2011)
5 Year NCI Grant to Vanderbilt University
Government Sponsors: H&HS, DoD & VA



Quality Advances – Objectives

- Monitor, measure, analyze, control, and improve processes
- Reduce product variation
- Measure/verify product conformity
- Obtain feedback on product performance
- Lead an effective root cause analysis and corrective action system

**Overarching Goal: Continuous Product Improvement
“Service to the Veteran”**



Quality Advances – Double Blind RDAs

- **Double-blind RDA Intercomparisons:**
 - Case #7 completed Oct 2010 (Navy veteran aboard USS Belle Grove during Operation CASTLE).
 - Lessons learned:
 - Independent analysts generated similar external dose reconstructions using both deterministic and probabilistic methodologies.
 - Internal dose evaluations are more complex and required more analysts' decisions - leading to greater inconsistencies.
 - Many of the inconsistencies could be remedied with explicit direction in the NTPR RDA SOP Appendix B-5, Operation CASTLE.

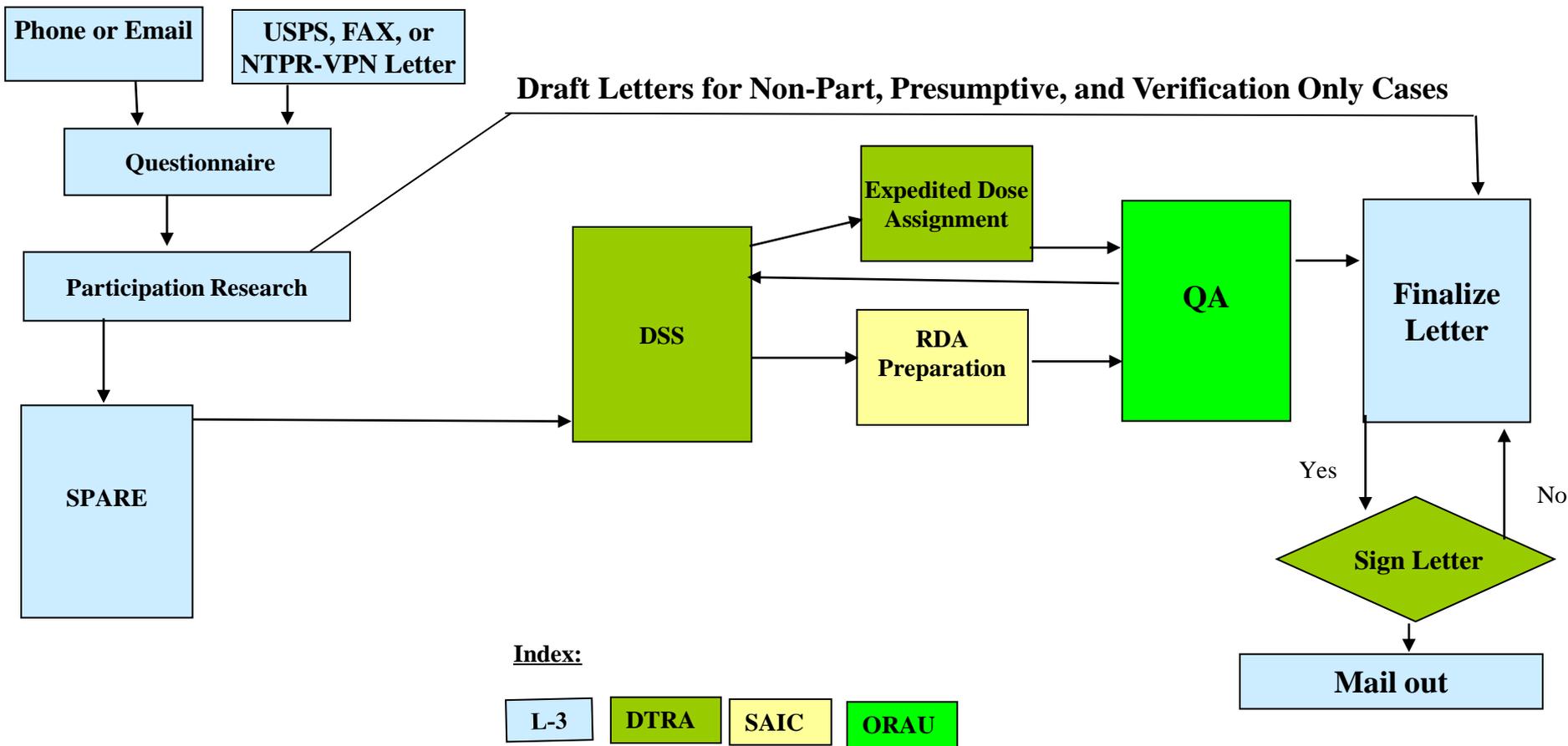


Quality Advances – QQR Stabilization

- **Quarterly Quality Report (QQR) submission history to SC3:**
 - 1st submission was 2008, 4th quarter
 - Four 2009 submissions
 - Four 2010 submissions
- **QQR format:**
 - Introduction
 - Performance Information and Metrics
 - Reported Quality Issues Tracking Spreadsheet
 - DSS/RDA Case-related Reported Quality Issues
- **Improvements to the QQR format are now minimal, and this is now considered a stable workproduct.**



Quality Advances - Work Flow





Quality Advances – DSS Improvements

- **Decision Summary Sheet (DSS) Improvements:**
- **DSS consists of three parts (each signed/dated by author):**
 - Part I: L-3 Summary of Vet's Comments & Historical Research (SPARE)**
 - Part II: DTRA Analyst (LCDR Burke)**
 - Part III: ORAU QA Review (Ms. Daugherty, CHP)**
- **Part II incorporated additional exposure scenarios, external & internal drop-down menus, justification drop-down menu, and external & internal dose summaries.**
- **The DTRA analyst comments box is now a more comprehensive summary that helps validate why the expedited (EXP) dose or Hiroshima/Nagasaki (H/N) radiation dose assessment (RDA) offers the veteran the maximum credible benefit of the doubt.**



Quality Advances – DSS Improvements

- **Sample DTRA Analyst Summary:**

- **The VA requested a dose for left kidney and prostate cancers. According to the veteran's case file, he was a U.S. Army Private First Class (PFC) and Combat Engineer assigned duties at Camp Desert Rock (CDR), Nevada Test Site (NTS). The vet was a participant in OPERATION BUSTER-JANGLE.**
- **The vet stated that they were located in the open at a distance of about 7 miles from ground zero (GZ) at the time of detonation. He did not wear any protective equipment or dosimetry. No dosimetry records were found for the vet. A previous reconstructed dose for the vet includes an external dose of 0.142 rem (gamma). The vet claimed to have been contaminated all over his body, but was not decontaminated. Also, the vet further claimed that he was told he had received 5 roentgens and was ordered to leave the area.**



Quality Advances – DSS Improvements

- **Sample DTRA Analyst Summary – Continued –**
 - **However, the vet's claims are not consistent with historical records. There was no recorded exposure in excess of the permissible limit. The vet concurred with the contents of the SPARE. The vet's exposure environment has been addressed by the expedited process. The veteran's case file indicates no unusual exposure activities. Based on a thorough review of the veteran's case file, it is my observation that the NTPR expedited radiation dose assessment provides this veteran with the absolute maximum credible benefit of the doubt.**



Quality Advances – DSS Reviews

ORAU DSS/RDA Reviews

	09-1	09-2	09-3	09-4	2009	10-1	10-2	10-3	10-4	Since 2008
XP	27	27	28	48	130	22	54	47	29	461
H-N	19	12	12	23	66	18	24	14	18	219
Approve	42	31	30	51	154	36	59	50	39	582
Editorial	3	8	9	15	35	3	13	9	5	73
Technical	1	0	1	5	7	1	6	2	3	25

XP – Cases receiving expedited processing assigned doses

H-N – Hiroshima/Nagasaki doses calculated using RDA Mathcad worksheet

Approve – Recommended to approve; no changes recommended

Editorial – Recommended editorial changes that will not change the dose

Technical – Recommended technical corrections that will change the dose



Communication Advances

- Performed 1,100 veteran outreach phone calls last year (37 % Increase).
- Continually updated NTPR factsheets and DTRA website to optimize veteran communication.
- The NTPR Program office is working closely with DTRA and VA public affairs offices to advance atomic veteran communication.



VBDR Recommendation Status

- VBDR-DTRA recommendation (0 of 20 remain open):
 - Recommendation 19 closed since last meeting.
 - DTRA will continue to submit Quarterly Quality Reports to VBDR
- VBDR-Joint recommendation (1 of 1 remain open):
 - “VA should work with DTRA to develop a screening process for sub capsular cataracts, similar to skin cancer processing, to allow VA Regional Office Jackson to process these claims locally without referral to Veterans Health Administration”.
 - It is DTRA’s expectation that this joint recommendation should be closed by next meeting.