

# EFCOG Radiation Protection Subgroup Meeting

## Minutes of the May 1<sup>st</sup> and 2<sup>nd</sup>, 2007 Meeting, Atlanta, GA

May 15, 2007

The EFCOG ISM Semi-annual meeting for the Radiation Protection Subgroup (RPSG) was conducted at the Airport Marriott in Atlanta, GA. Approximately 35 individuals attended one or both sessions conducted on May 1 and May 2, 2007. The meeting was chaired by Greg Perkins, Fluor Hanford, Inc. The following is a summary of topics discussed.

| Time                                | Summary of Presentation/Discussion   |
|-------------------------------------|--|
| <b>Tuesday, May 1, 2007 Meeting</b> |  |
| 0800                                | <p><b>Opening:</b></p> <p>Greg Perkins, Chairman of the RPSG provided opening remarks, safety topic and introductions of meeting attendees. Greg provided a summary of planned highlights of the RPSG meeting schedule.</p> <p>In addition, Greg promoted the EFCOG Best Practices Program. Any of the RPSG members that have a good Best Practice that they might like to share across the DOE Complex were encouraged to contact Will Broucker, EFCOG Best Practices Team Lead. He can be reached at (630) 252-1186 or <a href="mailto:wbrocker@anl.gov">wbrocker@anl.gov</a>.</p>   |
| 0820                                | <p><b>Joe Demers (WCH) provided an update for their request for authorized limits for Hard to Detect Radionuclides (HTD).</b></p> <ul style="list-style-type: none"> <li>• History and background of the request to DOE for 6 HTD radionuclides. Discussion of contributing reasons for process and approval to take over 4 years. Impacts of not having approved authorized limits.</li> <li>• Alternatives that were evaluated as a part of application development were discussed and questions from the group answered.</li> <li>• MEI calculated dose is &lt;0.1 mrem in a year and &lt; 2 rem collective dose. Some discussion of why higher values were not selected occurred.</li> <li>• Discussed current status of application approval and potential impacts in using anticipated approved authorized limits. <ul style="list-style-type: none"> <li>○ Exemption request for 10 CFR 835 has been drafted.</li> <li>○ Anticipated management issues if released material is reintroduced into a DOE facility.</li> </ul> </li> <li>• Suggestion that Andy Wallow attend the next RPSG meeting was favorably supported by the attendees. Greg Perkins will follow-up to check Andy's availability.</li> </ul> |
| 9:00                                | <p><b>Pete O'Connell (DOE HSS) – 10 CFR 835 amendment update.</b></p> <ul style="list-style-type: none"> <li>• Federal Register publishing should occur soon. Amendment has been approved by Office of General Council (OGC). Mr. O'Connell was unable to speak to specific changes but highlighted the changes that were published.</li> <li>• He provided a brief history of the development of the amendment. 19 sets of written comments were received and no comments were received from the public meeting.</li> <li>• Responses to Questions from the audience were provided: <ul style="list-style-type: none"> <li>○ Potential impacts of property release exclusion (new) and impacts from inter-contractor exchange of released material were discussed.</li> </ul> </li> </ul>   |

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|      | <p>Depending on the final rule language additional clarification/ administrative controls may be necessary to communicate that an item may have been released to criteria other than 10 CFR 835.</p> <ul style="list-style-type: none"> <li>○ Several comments were received on the change language for the DOT exemption. Pete indicated that this attribute consumed a significant amount of OGC and HSS time in considering the final language.</li> <li>○ ICRP changes were opposed by NRC due to expected near-term revisions within ICRP guidance. Other impacts identified were long implementation period (3 years) and change resulting in no improvement in safety or cost. A difference in terms used between the NRC and DOE and potential confusion in assigning exposures was also an issue.</li> <li>○ Values for some label exemptions were questioned due to perception issues rather continuing dose based values.</li> <li>○ Comments from Complex contractors were generally not supportive for making changes in applied training or adding requirements for retention training. Some support was received for adding RCT training back into to rule.</li> <li>○ App. D addition of Sr/Y technical position paper received a significant amount of negative comments due to need to characterize percentage of Sr present in a material. Commenter's generally preferred to stay with existing gross values.</li> <li>○ DNFSB has not concurred with DOE resolution of their comments.</li> </ul> <ul style="list-style-type: none"> <li>● Other discussion topics <ul style="list-style-type: none"> <li>○ Some organizations are seeing Rad Con Standard being added to their new contracts. Discussion centered on impacts of mandatory compliance with standard. Discussion moved to use of DOE Guides and if their content was mandatory based on DOE O 251.1. (See attached response received after meeting)</li> <li>○ Discussion of sealed source control and DOE alignment with IAEA code of conduct for CAT I and II sources. Details of implementation are still being worked but general consensus was that transfer was intended to be transfer from DOE control and not transfer between contractors or sites. Also discussion was conducted on when a sealed source can be removed from the requirements of §835.1202 due to disposal. Recent lost/misplaced source occurred due to being in a waste container for several years but actual disposal had not occurred. Should the semi-annual inventory still be required? This question will be carried forward to next meeting.</li> <li>○ One site had received a HQ assessment team comment that they had a deficiency because they had not evaluated the potential dose resulting from grinding and use of Thorium welding rods. Although the anticipated dose was low the contractor could not produce documentation for their conclusion. Impacts are potentially significant if expectation is that dose evaluations be conducted for use of NORM or commercial products that contain radioactivity. [Discussed again later in the meeting.]</li> </ul> </li> </ul> |
| 0945 | <p><b>Reducing Hand Injuries and Potential Uptakes- Ted Giltz (FH)</b></p> <ul style="list-style-type: none"> <li>● Ted provided a summary of hand injuries that involved abrasion, cuts, or punctures</li> </ul>   |

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|      | <p>in FH facilities during the last 3 years. Few resulted in verification of uptakes but the potential for a significant exposure is present. A table of DPM/100 cm<sup>2</sup> to potential dose from Pu was presented to demonstrate the impact of an internal deposition and dose.</p> <ul style="list-style-type: none"> <li>• SRS had a puncture wound last year that without excising the wound and chelating would have resulted in a several rem exposure.</li> <li>• A summary of the actions and attention being paid to reducing any 1<sup>st</sup> aids and hand injuries in particular was presented. The elimination of the potential hazard and selection of techniques and tools to reduce the potential for puncture is critical.</li> <li>• FH has been using the ALARA Center to aid in identifying sources of gloves that might aid in potential puncture wounds.</li> <li>• Ted provided video demonstrating a new type of glove material that is highly puncture resistant. The video demonstrated what happened with syringes, sharp metal and nails attempted to penetrate the glove material. Samples of the glove provided by HexArmour® were provided to the group. Additional information on these materials can be obtained from either the Hanford or SRS ALARA Centers.</li> </ul> |
| 1030 | <p><b>Gene Carbaugh (PNNL) – Presentation on Legacy Bioassay</b></p> <ul style="list-style-type: none"> <li>• Gene provided an introductory overview of the Hanford bioassay routine monitoring program, definitions, false positive rate, investigation protocols, and laboratory capabilities.</li> <li>• 7 actual scenarios were presented and the application of the investigation protocols, research, and conclusions were presented.</li> <li>• Demonstrated the impacts of previously unrecorded or unrecognized uptakes that occurred more than 25 years previously. These ‘old’ exposures and the conclusions regarding them were supported by interview, records, experience with the potential impacts of drugs and individual medical history.</li> <li>• Obtaining the employee history for their working career and hobbies was critical to developing the supporting detail that aligned with observed laboratory and dose evaluation results. Employees must be involved in arriving at the final answer and understanding the implications of any assigned dose.</li> </ul>   |
| 1130 | <p><b>Discussion of use of modesty garments as PPE – Result of Survey</b><br/><b>Marcia Maria Campos Torres (ANL-E)</b></p> <ul style="list-style-type: none"> <li>• Provided a summary of information received as a result of the PPE survey.</li> <li>• ANL-E has provision for use of specially marked blue coveralls that are considered PPE. Most other contractors do not allow use of modesty clothing as PPE as a general practice; some contractors have provisions for special clothing or specific applications when approved through the RWP.</li> <li>• Discussed management of the use of individuals as a posting control vs. physical posting. Most contractors are using on a limited basis for simple activities with few people involved. Some contractors have had issues with implementing the requirements for the individual to exercise the appropriate controls and for assuring the requirements for downposting are met when the job is done. Overall the use of individuals has provided flexibility and aided support of Rad Con controls.</li> </ul>  |

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| 1150    | <p><b>ISM Working Group Executive Sponsor: (Special Introduction)</b></p> <p>Joe Yanek, ISMWG Chairman introduced his new sponsoring director, Dave Amerine to the RPSG. Dave has returned from special assignment and renewed his involvement with EFCOG.</p>  |
| 1 PM    | <p><b>Presentation – Improved Waste Tank Sampling – Joel Cantrell &amp; Phil Owens (WSRC)</b></p> <ul style="list-style-type: none"> <li>• Provided a historical summary of typical tank sampling techniques and control. Summary included description of various methods employed to complete sampling techniques.</li> <li>• 2006 event highlighted need for additional improvements due to unexpected worker extremity dose during sampling evolution that involved multiple samples rather than a single sample. Sample scope had changed when compared to previous sampling and impacts were not fully appreciated.</li> <li>• With full operations support SRS implemented a team approach to identify and implement immediate solutions that could be attained with little or no funding and longer term solutions. Focus was on development of techniques that supported remote, hands-off sampling and sample handling.</li> <li>• Different aspects of sampling evolution were evaluated through mockups and simple solutions identified using readily available materials. Team modified ideas as materials and techniques were tried to make improvements. Electronic monitoring of dose rates was implemented. Ergonomic improvements were also considered. New sampling is done with the workers standing and sample process fully contained within an enclosure. No hands-on work with sample is needed and shallow dose to the worker has been significantly reduced. Development of further enhancements is continuing.</li> <li>• Factors of success – Active and visible operations support; willingness to discard what didn't work; use of mockups and equipment that workers were already familiar with; and use of dedicated team of workers.</li> </ul> |
| 1:50 PM | <p><b>Review of Independent Verification Business Plan – Greg Perkins (FH)</b></p> <ul style="list-style-type: none"> <li>• Greg reviewed the request from HQ and the D&amp;DWG to complete a review of the proposed business plan for conduct of independent verification of release programs and authorized limit development impacts. Copies of the business plan had been provided to RPSG members prior to the meeting.</li> <li>• Request was made to members to provide review comments to Greg Perkins by Friday, May 11<sup>th</sup>. Greg will consolidate the comments and provide to RPSG members for review the week of 5/14 and submit to the D&amp;DWG via the ISM working group the week of 5/21/07.</li> </ul>   |
| 2:30 PM | <p><b>Evaluation of Thorium Welding Rod Hazards – Kathy Shingleton (LLNL)</b></p> <p>LLNL has received an OA-50 assessment comment that a hazard analysis for the use of Th welding rod had not been completed. Kathy Shingleton indicated that the lab was evaluating their response and actions. The MSDS does not indicate that a radiological hazard is present. Preliminary estimates indicate that an individual would have to be grinding the welding rod over 200 hours in a year to receive an annual exposure of 800-1200 mrem. The discussion revolved around what controls and monitoring should be in place and the need for posting the area as a CA/RBA. The topic will be carried forward to</p>  |

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|                                       | the next meeting.   |
| 3:00 PM                               | <p><b>Jayne Tye – Nuclear Decommissioning Authority UK provided a presentation on the status of nuclear power and decommissioning within the UK.</b></p> <ul style="list-style-type: none"> <li>• Provided a summary of her organization, their roles and responsibilities and the current missions.</li> <li>• Responsible for 20 sites within the UK; not responsible for defense facilities</li> <li>• A significant impact from actual and perceived stakeholding believes and culture.</li> <li>• Focus areas currently being pursued:               <ul style="list-style-type: none"> <li>○ Industry restructuring</li> <li>○ Skill redeployment and development</li> <li>○ Research and development</li> <li>○ Stakeholder involvement</li> <li>○ Soci-economic impacts of changes</li> <li>○ International collaboration. For example UK provides nuclear reprocessing services to France and Japan.</li> </ul> </li> <li>• Differences between DOE/NRC and UKAEA. The UKAEA does not regulate.</li> <li>• Status of completion and additional information is available on WEB site: <a href="http://www.nda.gov.uk">www.nda.gov.uk</a></li> </ul> |
| 3:45                                  | <p><b>Open Discussion</b></p> <ul style="list-style-type: none"> <li>• Additional discussion regarding use of Th welding rods. Adequacy of work controls and need to define nominal amount of concern were discuss. Potential topic for a future HQ safety bulletin.</li> <li>• General discussion of how contractor organizations deal with conflicts between IH; safety; and radiological hazards during hazard analysis. Most often radiological is the most conservative but conservative controls sometimes impose new/additional hazards (e.g., heat stress). Most organizations are managing through work control and ISM processes for hazard controls.</li> <li>• Few are allowing worker to omit respirator in favor of other safety factors due to DOE opposition for allowing worker to receive internal dose; similar situational pressure exists for not accepting skin contamination within DOE organizations.</li> </ul>  |
| <b>Wednesday, May 2, 2007 Meeting</b> |   |
| 8:00                                  | <p><b>Status of Volumetric Release Criteria at SRS – Mike Matheny (WSRC)</b></p> <ul style="list-style-type: none"> <li>• SRS limit unique in that it is approved for release of items only to on-site landfill for soils and rubble. Authorized Limit (AL) was approved in 2003 and based primarily on ANSI 13.12 values and justification for use of 3 • Ci/gram alpha and 30 • Ci/gram beta/gamma.</li> <li>• Release plans used to implement AL are MARSAME based. Release plans create the record and utilize four classes of MARSAME: Known Rad; Likely Rad; Potential Rad; and no Rad.</li> </ul>  |

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|       | <ul style="list-style-type: none"> <li>• PNNL has similar restricted AL for liquid lab samples that allows release from controls for use but still requires disposal as a hazardous material.</li> </ul>  |
| 9:30  | <p><b>Tracking and Trending of Radiological Information – Greg Perkins (FH)</b></p> <ul style="list-style-type: none"> <li>• Greg initiated the discussion by describing the leading and lagging indicators being tracked at Fluor Hanford. The use of the red, yellow, green summary process was also described (generally used by senior staff and DOE)</li> <li>• PNNL develops a quarterly assessment report highlighting 27 indicators. A summary report is provided to Battelle as a part of the overall lab reporting process.</li> <li>• SRS has similar tracking and has also been trying to capture the 'fixed-on-the-spot' issues for trending.</li> </ul>   |
| 9:45  | <p><b>Standardization of RP Training Programs – Ted Giltz (FH)</b></p> <ul style="list-style-type: none"> <li>• Ted provided a recommendation that the EFCOG consider options to establish reciprocity for core and fundamental training for Rad Workers and RCTs.</li> <li>• Content would be based on the existing DOE training course materials. Site specific training material would continue to be site or contractor specific. Model would be what was in place in the early 1990s and with what is currently being done through INPO.</li> <li>• Reasons for pursuing the proposal is to provide improved ease of moving between contractors and sites. Would aid in reducing costs and project support delays due to reperformance of basic training.</li> <li>• After discussion it was agreed that a EFCOG survey should be developed to capture current contractor and site practices; basis of course content, costs for training and other factors that might impact an effort to standardized DOE training. A survey will be provided to EFCOG members in June 2007.</li> </ul>  |
| 11:00 | <p><b>DOT shipment monitoring – Jim Stafford (WSRC)</b></p> <ul style="list-style-type: none"> <li>• Provided the background of an issue that occurred during an exclusive use Class 7 shipment coming to Hanford. At the Oregon/Washington border the inspector monitored the rad level on the container incorrectly and concluded that the shipment exceeded DOT shipping requirements. Subsequent surveys performed by CH2M Hill Hanford found that the inspector's survey was improperly performed using an uncalibrated instrument. There was not a DOT shipment issue.</li> <li>• Subsequent to the event opportunities for improvement were developed including the use of measurement tools; a desire to standardize survey and instrument expectations; and a desire to determine if EFCOG members were interested in evaluating their programs against the changes made by SRS.</li> <li>• Jim indicated that SRS also applies a 10% wipe efficiency based on their past experience with IAEA and international shipments. The general discussion from the group was that wipe efficiency was already build into the 10 CFR 835 values and resulted in unnecessary conservatism. SRS agreed to verify that the recent changes to DOT requirements did not already include the international assumptions for wipe efficiency.</li> </ul> |

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|         | <ul style="list-style-type: none"> <li>SRS is providing the draft Offsite Class 7 Exclusive Use Only shipping procedure to the EFCOG members for review and comment. Copies were provided during the meeting. Comments should be forwarded to Jim Stafford or Norris Johnson at SRS by the end of May 2007.</li> </ul>  |
| 1:00PM  | <p><b>Rad vs. Non-Rad Control Presentation – Mike Matheny (WSRC)</b></p> <ul style="list-style-type: none"> <li>The presentation provided a comparison in the different implementation philosophies between Rad and IH folks. Rad is generally based on ALARA while IH takes the perspective of establishing controls based on ALAP. Under ALARA measurement of any amount of airborne or contamination of thresholds requires control; under ALAP detection of a contaminate is okay providing the time-weight threshold value or maximum permissible exposure is not exceeded.</li> <li>Examples and discussion of common conflicts were presented.</li> <li>Benefit of the ISM approach has improved communications and allows for more opportunity to look at the overall integrated hazard and helps to eliminate the stove-piping that has occurred.</li> <li>Described the SRS improvements being made to pilot a single, integrated work document. Approach is to consolidate information needed by the worker into a single document and eliminate the background support information. The PIC/FWS would still be responsible for the support information such as reviews and permits.</li> <li>Update topic at next meeting.</li> </ul> |
| 2:15 PM | <p><b>Staff Resource Discussion – Greg Perkins (FH)</b></p> <ul style="list-style-type: none"> <li>Greg will be attending next NEI Radiation Protection meeting and attending industry resource session.</li> <li>All contractors are continuing to see a shrinking pool of qualified and interested HPs.</li> <li>Discussed activities going on in regards to education of new candidates. Several college programs are starting up to provide HPTs or being considered with support from local contractor organizations.</li> <li>College programs are still providing a insufficient number of candidates and all graduates for CY07 either already have jobs with many planning on medical HP careers. Starting salaries are clearly a factor.</li> </ul>   |

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| <b>Actions from Meeting</b> |   |                             |
|-----------------------------|---|-----------------------------|
| <b>Number</b>               | <b>Action</b>   | <b>Responsible</b>          |
| 1.                          | Establish RPSG best practice topic as meeting agenda item.  | RPSG Chairman               |
| 2.                          | Invite Andy Wallo, HS-20 to next RPSG meeting.  | RPSG Chairman               |
| 3.                          | Resolve expectation for removal of sealed sources from inventory requirements after disposal.   | RPSG Chairman               |
| 4.                          | Include update on evaluation of Th welding rod hazards in next meeting agenda.  | RPSG Chairman               |
| 5.                          | Provide business plan review comments to Greg Perkins by Friday, May 11 <sup>th</sup> .   | RPSG Members<br>(complete)  |
| 6.                          | Greg will consolidate the comments and provide to RPSG members for review the week of 5/14 and submit to the D&DWG via the ISM working group the week of 5/21/07. | RPSG Chairman<br>(complete) |
| 7.                          | Develop and issue RP Training Survey to RPSG members by 6/30/07   | RPSG Chairman               |
| 8.                          | Provide completed RP Training Surveys to Greg Perkins by 8/15/07  | RPSG Members                |
| 9.                          | Review and provide comments to SRS Offsite Exclusive Use shipment procedure by 6/30/07. Comments to Jim Stafford or Norris Johnson.                               | RPSG Members                |