



MINUTES – FALL 2008 MEETING ALBUQUERQUE, NM – NOVEMBER 20, 2008

Opening comments were offered by Mike Brisson and Melecita Archuleta. Many new attendees were there thanks to the preceding symposium. Mike encouraged all to become members of the BHSC and participate. 34 persons were in attendance, with call in participants numbering 6.

Morning Session

The Emerging Contaminants program within the Office of the Secretary of Defense (Department of Defense (DoD)), represented by contractor Kelly Scanlon, was discussed and a beryllium case study was highlighted.

In 2006, the office was set up to anticipate contaminants that might move into view as a risk to the DoD. The process has three bins: Scan, Watch, and Action. Peer-reviewed journals, documents of regulatory agencies, as well as news media releases are monitored. When sufficient interest is shown, the office posts that contaminant to the “Watch” list. Agents making the watch list undergo a phase I assessment, where fundamental information specific to the DoD is collated. A grading and ranking process is used for Watch list items for prioritization to the “Action” list. When moved to the Action list, a Phase II assessment occurs which includes quantitative risk measurement and discussion of development of potential risk management options. Impact areas are identified from among six defined areas specific to the DoD: Environment, Safety, and Health; Training and Readiness; Acquisition/Research, Development, Testing and Evaluation; Production, Operations, and Maintenance of Assets; and Cleanup. A simple risk matrix plot of probability versus severity for each of the six items conveys to military leadership the risks of the selected agent as the next emerging contaminant likely to impact DOD. Should Risk Management Options be developed, they are vetted with and through a governance council and steering committee.

Questions were posed by the audience during the presentation as follows:

Q1 (Brisson): Please elaborate on the Steering Committee versus Governance Council functions and structures.

Scanlon: Steering Committee is made up of 10 to 15 DoD people. Governance Council is Senior Executive Service staff of 25 to 30 people.

Q2 (unknown): How does data get acquired?

Scanlon: Consultants as well as site and Services members throughout the DoD participate in data collection with focused attention given to the effort by the US Army Centers for Health Promotion and Preventive Medicine (USACHPPM).

Q3 (unknown): What is the duration of these phases of investigation? With respect to beryllium where is the process?

Scanlon: Process elements may take several years or only a few months, depending on the qualitative and quantitative research and review. For Beryllium, Phase I assessment began March of 2007 culminating in a report issued August of 2007. Phase II assessment began April of 2008, with part A (quantitative risk assessment) report targeted for December 2008 and part B (risk management options) anticipated for March of 2009. Target for presentation to the Governance Council is late in 2009. Both perchlorate and hexavalent chromium have moved that far as models of the office output.

A case study of beryllium was presented next. Beryllium is an Action list item that is currently undergoing a phase II impact assessment.

Q4 (unknown): Why is there interest in beryllium by DOD?

Scanlon: It is a critical strategic material.

Q5 (unknown): How did it make the watch list?

Scanlon: Several reasons. The OSHA PEL change has been forecast as pending for years. US EPA is working on an IRIS cancer assessment. Trends have been observed in ACGIH, NIOSH, and DOE. The European legislation REACH will have impact to DOD overseas. IARC also continues to refine its classifications.

Comments from the audience (Dale Brown from Kansas City, Tom Ford from Y-12) on the Risk Matrix plot of the six impact areas found that the cleanup impact position was low risk to the DoD. Many DOE site experiences find that the surface contamination requirements and the technical issues around identifying them have been very expensive to reconcile. Paul Wambach commented that Emerging Contaminants program should look at the Iowa Munitions facility report for insight on the types of impacts they could reasonably anticipate.

Ms. Scanlon provided ideas for preliminary conclusions from the Phase I assessment and offered suggestions for preliminary risk management options. Audience members were invited to provide comments and ideas and several members provided suggestions both during the presentation and immediately following the presentation during break.

Round Table on National Academy of Science Report

Four speakers presented information on this topic.

Dr. Carrie Redlick (by phone) as one of the authors of the report recapped the course of study and conclusions.

The Air Force requested that the NAS answer a series of questions with respect to beryllium use and occupational health management. To that end, the group broke its study plan to two phases. In the first phase, they reviewed literature in support of the study. In the second phase report, they addressed the Air Force questions. Her complete presentation is found at.....

John Bishop of the Navy Environmental Health Center (NEHC) offered his opinion regarding issues with the report from a practical perspective.

John discussed the second phase report. He had already presented the information informally to the DOD IH Working Group and Occupational Medicine Working Group. The big question on everyone's mind was would other services follow suit in looking at these same issues. As DOD OEC presentation pointed out, they probably will. John voiced a great concern with dealing with no occupational exposure limit (OEL) in the context of a logical AIHA strategy on exposures management. Without the OEL, one is stuck with considerations of detection limit versus real health risk, which remains quite unclear. A management program around "potentially exposed" when potential exposure is elusive is difficult if not impossible to implement. There is also the consideration of sampling and analytical sensitivity; what is acceptable today may not be acceptable tomorrow. Several in the audience interjected comments.

C1 (Oatts): In the absence of an OEL, what lab criteria are you trying to hit?

C2 (Jahn): To address that issue following an audit, a technical basis document "Criteria for Defining Potential Exposure to Chemical, Physical or Biological Agents (ESHQA-HSS-00025)" was created at Savannah River Site that will gladly be shared.

C3 (Bishop): We (Navy) could live with an ALARA process, but a measure without understanding actions to come from it is not a good system of managing the risk.

C4 (Braybrooke): One needs to be concerned with ambient levels of beryllium and appropriateness of criteria. If ambient levels are equal to manmade, then everybody is potentially exposed.

Q1 (Kolan): How are California Naval installations affected by the state rule? Bishop: Not at all since the federal installations do not have to meet it.

For timekeeping purposes, Mike Brisson as moderator cut off discussion with a plea for everyone to be in the meeting later when a discussion of ALARA versus OEL would occur.

Dr. Scott Burchiel of the University of New Mexico, also on the author's panel for the report, discussed the opportunity for further study of the correlation of surface contamination to disease incidence and sensitization. He finds beryllium to be confounding, since "safe levels" and sensitization are mutually exclusive. There is a need to identify potentially exposed persons, and then move to genetic profiles for them to avoid the exposure. Trying to find the gene environment interactions are challenges for modeling. Lots of inhalation exposures were examined at Lovelace Laboratory at the Sandia site. Perhaps that data holds the key for understanding sensitization mechanisms, but we do not know. The toxicology groups are feeling our pain in implementation of program burdens. The study author's could not address alloys and physical material form questions. If development of minimal models were complete, then we could segregate the risks. Humanized animal models hold promise, but since there is no single gene tied to sensitization, even that probably will not work well.

C1 (Dr. Redlick): These difficulties demonstrate the need for a national surveillance database.

C2 (Dr. Burchiel): Clearly the industry has been successful in reducing exposures. Unfortunately latency is the problem (can't tell soon enough you are doing enough to avoid future exposures).

C3 (Unknown): Air Force levels of exposure are orders of magnitude below our abilities to assess empirically via mass. We therefore ought to consider our abilities targeted at genetics as a screening tool relative to disease.

Lastly, Steven Jahn on behalf of the BHSC spoke on the corollaries of the NAS report with respect to the current DOE 10 CFR 850. He compared the discussions of the NAS report to existing regulatory citations with the rule.

Roundtable

Mike Brisson opened the roundtable. Department of Defense members are simply in attendance; nothing is official with regards to any information that may be discussed. The goal is collectively to hold informal and educational discussions.

Mike returned to the topic of ALARA versus OEL by framing the first roundtable question: What are the pros and cons of each approach?

C1 (Weitzman): For better or worse, numbers are out there. Dave believes that ALARA is problematic, especially with respect to conventions in hazards communications where material safety data sheets lack information where beryllium exists at less than 0.1%.

C2 (Bishop): Agreed. Various sites in the DOD will do well while others less so across the DOD sites. Defining what is the common ground for decision making and standard controls is the real hurdle with the ALARA approach.

Q2 (Bertness(DOE Richland): Limits are set for rad when one argues ALARA. One simply manages downward from acceptance criteria. Data is out there; we have to start somewhere. Key part of our problem is the relationship of exposure and impracticality of implementing any program.

C3 (Oatts): The existing criteria level under the DOE rule is fairly high yet close to analytical capabilities. This makes it difficult to adopt the ALARA strategy.

C4 (Bishop): ALARA is driven by undefined relationships in dose/response space. That same problem means that with respect to generating a policy demanding medical surveillance, the appearance is that we are treating people like guinea pigs.

C5 (Wambach): Another system to learn from is case studies. Matching people, materials, and processes can give us some insight. We need to do more of it.

Q3 (Wambach): Did the NAS committee see this as a step wise process with IH decision making driving medical decisions, or were they redundant and independent?

Dr. Burchiel responded: both would inform the other. Since it is an immune phenomenon rather than dose response dependant, it is very difficult to set an "allowable limit". Medical practitioners would want to understand unique exposure profiles. It isn't purely exposures alone (magnitude of contact with the agent).

C6 (Fields): Process of IH and medical department collaboration leads to minimizing exposures.

C7 (Dr. Burchiel): One cannot place a lot of faith in case studies. One needs a control group and appropriate cohorts. Real need rests with a definition of risk. Heretofore it has been done with zones of plants (areas) or tasks descriptors or measurements. We need to push the limits of our chemistry and analytical capability. If those were to improve, then practices could go beyond Be LPT (simply a currently convenient corollary) to genetic

screening tools. We talk of CBD as a single disease. It may not be because cases do not fit when we explore them retrospectively. The limiting factor appears to always be exposure. If we then define the appropriate groups with that exposure potential, and take a single measurement, it proves nothing. For this reason Dr. Burchell is a big fan of standard practices. Refine conduct of the BeLPT as stated in the NAS report, then do the same thing for all of us in exposure assessment and exposure management.

C8 (Dr. Reclich): NAS has not recommended case investigation.

C9 (Weitzman): A recommendation to the Navy (John Bishop) would be to start where we (DOE sites) have already learned something: machinists. Our experience has been that we are not doing a good prospective job of sizing up exposure opportunities.

C10 (Bishop): To do so will be clinician's decision. Historically medical surveillance is a demonstration of proper management of exposures, not a tool for defining exposures. Choosing those to enroll in surveillance is based upon risk factors, hence back to the need for OELs.

C11 (Mroz): Everyone should recall that the purpose of medical surveillance is to identify consequences in a population. It is inherent that the increased at-risk population upon which one focuses resources for surveillance are those with exposures.

C12 (Dr. Redlich): Yes, that is where the NAS authors landed.

C13 (McCawley): Absent a relevant exposure limit, one cannot pick the target population!

C14 (Mroz): In such a case our surveillance burden must help us drive to the limit.

C15 (McCawley): At the end of the day, it has to be good epidemiology that determines the criteria for selection of candidates for surveillance.

C16 (Civic): Terry reminded everyone we are not breaking new ground with this discussion!! DOE should consider funding those research needs. Conducting surveillance on more people will not "solve" the problem. Too many unanswered questions.....

C17 (Van Dyke): It remains a horse and cart (and not necessarily in the right order) problem.

C18 (Quinn): Tony asked that everyone indulge him from his operational perspective. Abandon the overt research approach and instead pour all the energies into PREVENTING EXPOSURES. Regarding anything the NAS study people brought up, the BHSC has discussed these same issues for 10 years.

C19 (Immele by phone): Affected workers with CBD have only one focus: prevention through avoiding exposure. Those same workers recognize the difficulty with the technical measurement problems, but frankly don't care.

Q4 (Brisson): What should be the additional steps to take to control exposures?

C20 (Spezialetti): You cannot administratively control via boundaries and demarcations in many situations. Team needs to look at the macro environment levels (1300 square miles at his site) that aren't solvable with engineering devices.

C21 (Wambach): One of the aspects of CBD is latency, and the exposure may have occurred years ago. There is no monitoring data. Case investigation is the only thing you can do. Medical Surveillance that is offered is not related to a current exposure profile. It merely finds the marker that can identify the right people to intervene with treatment. To that end, here is a question: Did the NAS find that medical surveillance was a value

added to the individual for health management, or that it was a value to improve organizational risk management, or both?

C22 (Dr. Redlich): First, medical surveillance is a tool for risk reduction given the prevalence of information showing the relationship of sensitization plus exposure could lead to CBD (ie a reasonable Positive Predictive Value). Second, it is of benefit to the individual worker. Any immunological process once initiated to sensitization should yield management action to cease the exposure. Ongoing exposures would be imprudent.

Q5 (Dr. Burchiel): What about intervention with steroids to reduce progression of disease; should it be done regardless of cohort understanding the damages of steroids?

C 23 (Dr. Redlich): one recent paper described the benefits of such treatments. Decision on an imperfect understanding of the disease is to reduce exposure.

Q6 (Dr. Nieblas): exposure reduction after sensitization?

C24 (Dr. Redlich): Refer to the language in the NAS report for clarity.

Q7 (McCawley): Should the Be LPT be required of all potentially exposed? Seems the report has landed there....

C 27 (Lt. C. Thomas): We need to move our resources to risk: intervention with good engineering practices.

C26 (Jahn): Brings the issue back around to defense of selection of potential. As our site, potential exposure to sensitizers means no OEL target.....you move to detectability as criteria. Colonel Thomas agrees.

Q7 (Dr. Binion): General incidence of sensitization appears to be 0.1% to 1% in the general population. Where is this coming from? Dr. Redlich responded this may or may not be an accurate rate.

Mike Brisson drew the session to a close with this question:

Is the “elephant in the room” CBD or sensitization or both? DOE folks said sensitization, contractors said it is both, researchers did not offer opinion.

Next Session was discussion of pending NNSA direction on surface limit guidance for buffer areas outside of beryllium areas. Presented by Dan Fields on behalf of Don Harvey.

NNSA will soon be issuing a guidance document on the subject of beryllium buffer areas (modeled after radiological contamination practices) for activities and legacy areas. *It is the result of a request made by Kevin Smith (NNSA Y-12 Site Office Deputy Site Manager) the NNSA-HQ to form an Enterprise Resource Group (ERG) to review the issue raised during our Office of Inspector General investigation regarding surface contamination outside of beryllium operational areas.*

In January of 2008, NNSA concern was raised with NNSA sites, rates of sensitization increases, and disease progression. Headquarters took on evaluating the best management practices, looking at how different sites were minimizing exposures as indexed by BeS and CBD metrics.

A small group of NNSA staff took all the CBDPP plans submitted from the sites, looked at the lessons learned, the rates of sensitization and disease. They especially looked at the use of buffer zones around regulated areas similar to radiological control programs.

The same concept was seen at several sites. NNSA has established a summary paper and it should be released soon.

The guidance will require greater numbers and frequencies of surveillance in adjacent areas, and was formulated in response to Y-12 inquiries. This document mimics what the NAS study group found. Document is 2 ½ pages with a stated goal of sensitization avoidance. It also focuses efforts towards exceptionally comprehensive exposure assessments.

Dan also reported that HQ is also looking to centralize the database retention of information into the DOEHRS database. He expects final issuance of these documents and a decision on them by the end of the calendar year.

Afternoon session

Lori Geckle of the USACHPPM and a Risk Communicator presented an overview of the social science behind risk communication. Lori cautioned the technical experts in the room that their message would be easily lost and that energies in risk communication planning needed to reduce the jargon significantly to be effective. Most of the tools for good planning of risk communication strategies already exist at many sites, you just have to ferret them out.

Stakeholders generally fall into one of three bins: advocates that support, skeptics straddling the fence, and adversaries. CDC publishes a Crisis Intervention Emergency Risk Communication document (<http://emergency.cdc.gov/cerc/pdf/CRC-SEPT02.pdf>) that identifies the need to meet the “paradigm of the affected”. She cited a study done with litigants who appealed losses in the courts. The process becomes important to them; 85% who appealed decisions did not expect a different outcome. They had an expectation for the process and simply sought the emotional satisfaction of trying. Stakeholders in any adverse event, group catastrophe or personal condition wish to be heard.

She also discussed the paradigm shift within the military where recent war events lead to subordinate positions refusing to obey orders. Risk communication skills development has to happen individually as well as organizationally.

Kelly Scanlon commented how “stigma” interferes in resolving risk communication. Recommendation to the BHSC members is to bring in “victims” (affected and workers under surveillance) early and involve them in decisions, as doing so reduces stigma.

Tom Ford recapped the Y-12 experiences he and his occupational health team faced during a recent spate of positive beryllium LPT test results. Y-12 has had a beryllium oxide mission since the 1940’s. The success of their immediate implementation of DOE beryllium rule had been going well, until in 2006, they trended a positive BeLPT rate of 21% versus a running average at 3.6%. This brought all kinds of management attention and concern, which he attended to within his organization. He was not satisfied with the

results, and turned to Ron Edmond, a risk communication expert at Oak Ridge Associated Universities.

Tom reported that there were some simple things that showed immediate impact. Who delivers the message is important. The manager may be technically the best person, but may have low trust to match that high intelligence. Tom could effectively speak to the guys still on the shop floor from his early career, but could not do so for the younger generation of workers on the floor. Recognizing this he soon turned to managing the message and having the younger (trustworthy) staff deliver the message. Preparation of a simple message to be repeated over and over is important. If the message is garbled or handed off with changes, it does not build confidence.

As a result of the lessons learned, Tom convinced management to endorse creation of a video that is delivered with any result of the first BeLPT being positive.

Q1 (Kolan): Marc asked if there was senior management participation in the briefings when first responding to the dramatic rate increase of BeLPTs? Tom reported no that they had not. Marc also asked if that rate was real. Tom reported that it was a laboratory reporting problem.

Steve Jahn reiterated the lessons learned by personal experience in risk communication. He echoed those points made in Tom's presentation.

Group Discussion:

Tom Oatts discussed the Data Reporting Task Force and the potential impact of data from an emotional standpoint (detecting anything rather than detecting enough to meet reporting goals of IH sampler). Be very careful of data under reporting limits; reality is perception and you cannot unfire the gun once the trigger is pulled.

Tom Ford explained the development of the Beryllium Communicator to put the most current sampling data onto building diagrams as part of their data management platform. They got away from numbers and simply categorized to red/yellow/green light reporting system. It has been received well by the affected worker community.

Paul Wambach commented that you have the opposite problem of doing the right thing. How do you get management to act on your data for the right reason rather than a political reason? Tom Ford replied that beryllium is a niche industry, and one with substantial cost burdens to impose these requirements. You need to get management squarely on your side. At Y-12, the surveillance costs of the program, most notably control of surface contamination and associated management is \$3.6 million per year; this despite the shutdown of beryllium oxide production. Perhaps the managers directing these H&S burdens will now see fit to fund the commitments.

Lori Geckle commented that within DOD, you have to get to a trusted agent who can influence the right level of management to implement the right things. Marc Kolan commented that he has had to use the same tools at his organization: building relationships to influence what is being done matches what needs to be done.

JOWOG Update

Tom Ford reported on the proceedings of the Monday, November 17, 2008 JOWOG preceding the symposium. The central issue for the JOWOG members was consideration of the plans to address implementation of the ACGIH TLV change should it become adopted. A plan of attack will be drafted and circulated by Tom to the JOWOG membership.

Marc Kolanz asked why DOE is pushing an ACGIH guidance document that is not a consensus standard? Dave Wietzman responded that it appeared to reduce protection to the work force if not adopted. He reported that he did not envision the ACGIH value being adopted as de facto a compliance burden. He did comment that NNSA may adopt it.

John Bishop reminded all that NFPA 306, Standard for the Control of Gas Hazards on Vessels, specifies TLVs, in essence becoming a backdoor regulation.

Mike Brisson indicated that it is politically difficult to ignore the relation of such a limit to its current feasibility.

Terry Civic stated that he thought ACGIH could constrain the inappropriate use of the TLV trademark. Dave Weitzman indicated the DOE lawyers looked at this issue and said that ACGIH could not. It should be noted that ACGIH offers a clear caution on the use of TLVs and these points; regulators are forewarned that economic and technological feasibility burdens are theirs alone when adopting a TLV.

Mike Brisson reported on the Wall Deposits Task Force. A White paper was previously approved by the BHSC.

Wall deposits and the JOWOG issue of TLV implementation raised a question as to the need for these two issues to merge within the BHSC by Mike. After discussion, it was agreed that they should be considered that way. Mike McCawley will lead the team near term as a research need item. Kevin Ashley asked if the team's intention was to come to some recommendation on the issue. If not, he felt it adequately covered in other initiatives. Melecita Archuleta countered that we have not collectively searched all the literature, identified all the issues politically and contractually, etc. Therefore in her mind the need is clear. Terry Civic responded that we need a clear scope and objectives to make such a decision. Mike Brisson replied that at this point the team charter is to build that scope.

BHSC Operations Report

Mike Brisson offered the following for the Operations report:

1. Charter and bylaws revision is in process with a goal of more formality to our Operations. The final documents will be available for membership action at the April BHSC meeting at Savannah River Site.

2. JOEH manuscript is planned from the Symposium proceedings. Eighteen articles are committed to for a December 31 manuscript deadline.
3. The Website is up and running well thanks to significant efforts by Melecita Archuleta.
4. BHSC Newsletter goes out about every 6 weeks. Currently a duty that Mike Brisson tackles, perhaps someone else soon.
5. Conference Call schedule will be issued in December with a goal that people bookmark their calendars for participation.
6. BHSC Meetings will be pursuing webcasting. BHSC Board meeting in January will be a demonstration project with Dave Weitzman leading it.
7. Aerosols studies briefing in calm air is targeted for April meeting by University of Michigan researchers. Additional topics we hope to hear more about: NNSA status of buffer areas; progress of actions from the LLNL audit; tour of the SRS hot lab.
8. Geoff Braybrooke continuing with At Large membership. Chairman Brisson thanked Jim Jenkins and Melecita Archuleta for their years of service (Steve Jahn forgot the certificates prepared for the occasion and will send them in the mail).

Subcommittee Reports:

Nominations

Dave Weitzman indicated John Bishop has agreed to the nomination for the other at large member. No additional voice nominations were made, and all present voted favorably for John to join in that leadership position.

Research Needs

Mike McCawley indicated a Survey Monkey questionnaire would soon be redistributed with additional questions. The subcommittee is undertaking the task of an annual literature review. Paul Wambach offered that the subcommittee might examine the future surveys issued in terms of “gap analysis” for identification of what is coming. Terry Civic asked if the laundry list of research needs would receive any assignment of prioritization. Mike replied that it would.

Technical Standards

Dave Weitzman reported nothing going on at this time. Bring a topic and the committee will gladly examine it.

Several participants offered ideas. Kevin Ashley asked if the committee could examine the pending NIOSH revised criteria document. Mike Brisson reported that Sampling and Analysis Subcommittee already had done so. Kelly Scanlon asked if the REACH document would be something to examine. Terry Civic explained the complexity of the REACH document to the European community, giving it DOD implications. Dave offered to have the committee help if there was a view that they could, even if no clear link to DOE. After lively discussion, Mike Brisson asked that a conference call go off line between interested parties for a final decision on action.

Sampling and Analysis

Melecita Archuleta reported on the activities of several working groups:

Accreditation working group is pulsing AIHA as to what the wall wiping issue might do to data quality issues. The group assisted AIHA in the area of field portable accreditation via the registry similar to asbestos that was discussed a day earlier by Chris Morton of AIHA.

Oxide working group is pursuing Standard Reference Material rollout to the PAT rounds thru the efforts of Tom Oatts.

The Beryllium Fluorescence group is pursuing automation of the fluorescence into the NIOSH and ASTM methods. The Soils method, worked on by Anoop Agrawal and Kevin Ashley, has been published.

The Standards working group is working on both the ISO and ASTM ICP Mass Spec methods.

Finally, the Validation working group under Amy Ekechukwu has assembled a summary of validated methods. She and the group will try to have it completed for publication into the proceedings.

Melecita reported that two new areas are in search of a leader to tackle: Speciation of beryllium in analysis, and informatics (referred from the Risk Communication subcommittee by way of Mark Hoover's proposal for sharing of literature).

The Standards group is now acting as a reference for others regarding methods standardization and development. With Melecita's departure from day to day analytical work with beryllium she is stepping down. Amy Ekechukwu will take over as chair.

Symposium Report

In general the symposium held the previous two days was well received. There were more papers than anticipated, because they flowed in later. Consideration might be given for some to be eliminated if prudent and done without malice to the authors. (Example would be Jahn's recap of sampling burdens since duplicative of the previous day's training). Consideration might also be given to putting forth more dollars for a polished and prominent website announcing the symposium.

A panel discussion for hot topics might be an improvement to bring the newcomers up to speed. Plenary session needs an update; we are covering old news. If old topics are out there and need to be covered, at least update the information. Consider changing the plenary session to a keynoted speaker.

Include the BHSC meeting agenda into the symposium to make it clear to people that the functions are connected. Resolve the agenda early enough to make it happen (it had been a work in progress late into the due date for the event).

Melecita said the sponsors were not pleased with what their money bought for sponsorships of the luncheons. Tom Oatts recommends that everyone understand their time limits, build their presentations accordingly and practice. No excuse for running long.

Additional comments to follow symposium closeout conference call scheduled for 12-16-08.

Regulatory updates

850 continuing draft by DOE HSS. No comments on anything around it.

New business: Steve Jahn proposed that the BHSC would write a letter of commendation to Laurissa Welch and Y-12 as well as National Institute for Standards and Testing (NIST) for their development work and bringing to fruition the BeO standard. He will simply draft it with the permission of the membership and provide to Mike Brisson for a decision on when and whether it should go out. Marc Kolanz inquired if anyone had heard of DOE proposed leadership from the new administration. No one had.

Recorded November 20, 2008

Steven D. Jahn

Board Recording Secretary