# Beryllium Health and Safety Committee

**Kathy Creek, Committee Chairman**
**creek@lanl.gov 505.667.3954**


**Meeting Minutes**
**April 27, 2004**
**Atomic Weapons Establishment (AWE) Training Centre**
**Portland House, Aldermaston, England**

Meeting Minutes:

William Haight (MD, AWE) provided the welcome, Kathy Creek provided the mornings announcements, and J. McKenney went on an overview of the last meeting minutes.

## Kathy Creek – Announcements, Old Business:

**Announcements:**

Kathy revisited the idea having a symposium that invites the international community to hear the presentations that are given at the BHSC meetings. This would enable the community to participate in a more international setting. Any volunteers for a potential conference community were asked if they could dedicate the time and had the support of their respective organizations. Contacts for those in the EU were also requested. The vision of the meeting would be to have it extremely open for a well attended and useful meeting.

A new Analytical Sub-Committee was formed at the last meeting, and substantial work has done. A medical surveillance and medical sub-committees are being formed, and have been historical aspects of the BHSC. This process is still underway and the list of potential members is being put together by Debra Hurst.

## Tony Quinn – History of Beryllium Manufacturing Operations at AWE:

Tony Quinn gave a brief history of beryllium manufacturing activities at AWE. The briefing was unclassified:

1952 – Beryllium processing begins, both R&D and production (including melting, hot pressing and powder handling

1962 – New building constructed – used for research and development, production (including new hot press)

1964 – Main production transferred to AWE Cardiff – Aldermaston concentrates on R&D

1989 – New building closed for refurbishment – all operations were transferred back to the original building

1993 – Refurbishment completed, emphasis shifted from beryllium

1996 – AWE announces rationalization plan – AWE Cardiff to close – new building to become only beryllium facility

1997 – Machining activities recommence in new building

1998 – Rationalization plan commences – extra machine tools and ancillary equipment installed

2001 – AWE Cardiff decommissioned

2001 – Consolidation Programme – Concentration of all beryllium processed in one facility

Present Status:

- Basic machining capability and associated processes
- Consolidation Programme – All beryllium processes being concentrated in one facility
- New glovebox being commissioned for handling SWARF and legacy material
- No current plans for powder processing – could change

Brief History

We have also carried out at various times:

- Rolling and extrusion
- CIP and HIP
- Plasma Spraying
- Deep drawing

Since opening all buildings have had as a minimum of 3 ventilation systems

Low pressure extract – machine enclosures, fume cupboards, and space extract

High velocity extract – tool tip extraction

High pressure extract

Monitoring – AWE has always monitored for beryllium – PAS, area sampling and smear (swipe) sampling

Personal air sampling – AWE has an extensive database of personal air sampling results

**Alex Romero – Self Assessment / Best Management Practices:**

Self Assessment Best Management Practices:

a) LANL background information
b) 10CFR850.40 (assessment requirement)
c) Essential organizational characteristics
d) Purpose of a Self Assessment (SA) program
e) Key benefits of a SA program
f) Recommended SA criteria and process
g) SA do's and don'ts
h) Conclusion

Laboratory Background Information:

- Employs approximately 10,000 workers
- Property boundary – 43 sq. mi.
- 3000 plus facilities
- Annual operating budget – 2.2 billion dollars
- Facility and area hazards may include
    - Hazardous chemicals, gases, and metals (including Be)
    - Radiological hazards
    - High explosives
    - Biohazards (blood products – Hanta and West Nile Virus)
    - Construction site hazards

Alex Romero Background:

- Member of the Beryllium Rule Making Committee
- 17 years of IH and safety and health experience
- Beryllium sampling for maintenance and demolition work
- 8 years of audit of assessment experience

10 CFR 850

- 10 CFR 850 Chronic Beryllium Disease Prevention Program (CBDPP)
- 10 CFR 850 Performance Feedback

- "a) The responsible employer must conduct periodic analyses and assessment of monitoring activities, hazards, medical surveillance, exposure reduction and minimization and occurrence reporting data".

    - Note that the periodic requirement is not defined

- "b) To ensure that information is available to maintain and improve all elements of the CBDPP continuously, the responsible employer must give results of periodic analyses and assessments to the line managers, planners, worker protection staff, workers, medical staff, and labor organizations representing beryllium-associated workers who request such information."

Essential Organizational Characteristics

- An organizational environment that encourages employees to participate in the SA processes. Management fosters this environment by communicating the importance of these programs in improving performance.

- Management demonstrates ownership for the SA programs by directing, prioritizing, and staffing program activities.
- Employees recognize that minor problems are often precursors to more significant events, and they identify undesirable behaviors and deficient processes from these minor problems
- Management develops and supports an effective corrective and preventive action processes

Purpose of a Self Assessment Program:

- It's a process of actively identifying opportunities for improvement to prevent performance shortfalls

Key Benefits:

- Provides managers with a tool to improve and better manage their safety management program
- Prepares you for internal and external audits and assessments
- Identifies low level problems before they escalate
- Worker-Supervisor- Manager Interaction
    - Managers benefit from direct feedback from workers (improved communication and worker moral
- Performance-based improvement process (observe operations)
- Measuring your performance helps justify your programs and cost

Recommended Self Assessment Criteria

- Tailor to your local operating environment (determine frequency of SA
- Focus on performance, but don't ignore compliance (observe work)
- Evaluate a process that requires routine monitoring or ongoing communication
- Recognize and reinforce good performance
- Facility walk-arounds (LANL uses Management Walk-arounds)

Self Assessment Process Summary

- Review operations using work procedures and work permits
- If needed, consult with, or accompany a Health and Safety professional, Industrial Hygienist Security specialist
- Spend quality time performing the results
- Document and share the results

Self Assessment Do's

- Introduce yourself
- State purpose
- Reduce anxiety
- Observe work
- Obtain feedback – meets expectations or not
- Follow up

Self Assessment Don'ts

- Break or bend the rules
- Play "Gotcha"
- Look and place blame
- Interfere with routines
- Gang up on people (gang audit)

Conclusion / Q and A

**Nick Lewis, Prof Jones-Williams: Beryllium Disease in the UK – A Historical Perspective**

UK Beryllium Case Registry

- Chronic beryllium disease: 51
    - Acute to chronic: 1
- Acute beryllium disease: 1
- Skin Only: 7
- Total: 59

Criteria for Diagnosis of CBD

a) History of exposure
b) Consistent clinical / radiological features
c) Granulomas
d) Beryllium analysis
e) Be sensitization
f) Progressive disease

The professor demonstrated the lag period time in 48 cases for time from end of exposure to onset of chronic beryllium disease, and showed a characteristic legion in the lung

The professor demonstrated how he had also utilized laser ablation and mass spectrometer analysis techniques to determine spectroscopically the presence of beryllium and the Sensitivity Test Results

**Dr. Nick Lewis – AWE Medical Surveillance Programme:**

Early Surveillance

i) Started early 1950's
j) Annual physical, blood count, bi-annual chest x-ray;
    - Spirometry early 1960s annual at Aldermaston; monthly with hand inspection at Cardiff
    - 199s: 1100 under surveillance 75 workers
    - Chest X-Rays abolished 1991 saving 4 man Sv (400 mrem)
    - Graphing 1991
        - Lung function graphing data was presented with consent

4 Categories:

- Current high 125

- Past High 17
- Current low 588
- Past low 2

Lymphocyte Proliferation Testing:

1. Willie Tests 1979 – 80: 63 tests
2. AWE 1986 –
    a. 90: 2 series at Cardiff, March 86 – Feb 88; Nov 89 – Dec 1990; 272 tests 159 staff
3. 13 positive at Cardiff
4. 3 positive at Aldermaston,
    a. Known CBD
    b. Heart Disease at Post mortem,
    c. Well at last know 1986

**Clive Le Gresley – Pictoral Presentation of Beryllium Facility:**

Clive walked us through a virtual picture tour of the facility

**Kathy Creek – Committee reconvening:**

The committee reconvened collectively to decide which topics were most relevant to discuss on the agenda through the end of the committee. The topics were reviewed, and decision was deferred until later in the afternoon or for tomorrow's meeting.

**Bharat Patel – JET Operations Overview:**

Joint European Torus (JET) – Culham, Oxfordshire

- The world's largest tokamak research machine, operating since 1983
    - Aim: produce deuterium/tritium fuelled plasmas in conditions close to break even
    - Study:
        - Plasma heating
        - Plasma confinement, temperature, density control
        - Plasma-wall interaction, impurity control
        - Use of beryllium as first wall protection, fabricated tiles and evaporated deposit
            - Approx. 3000 kg beryllium installed 1990-92
            - Approx. 300 kg currently

- Beryllium Operations
    - Maintain and replacement of torus components
    - Breach of beryllium containments
    - Handling of beryllium components
    - Decontamination
    - Processing of wastes

- Jet – Beryllium Facilities
    - Torus access cabins
    - Be handling facilities
    - Waste handling facilities

  - RPE Cleaning
  - Plastic Containment Workshop
  - Beryllium analysis laboratory

- Jet in vessel remote operations, most of the access is controlled and mitigated because of high radiation areas in addition to other hazards
  - Tritium contamination
    - Activation

- JET control Limits
  - Airoborn Contamination
    - Contol measoures above 0.2 micro grams/cubic meter
    - Exposure limit 2 micrograms/cubic meter

- JET – Beryllium Workplace monitoring
  - Exposure sampling – 100% personal sampling in all beryllium areas
  - Area static samplers, stack discharges
  - PAS: 2 l/min, 0.8 micrometer cellulose
  - Static A?S: approx. 40 l/min, 2.5 micrometer cellulose

JET Results of exposure monitoring were reviewed from 1989 – 2003, by frequency (no. of assessments of 8hr TWA, adjusted for respiratory protection (slide no. 11)

Slide number of 12 was a comparison of the results not adjusted for respiratory protection

ITER – International Thermonuclear Experimental Reactor

- The scale of the ITER versus the existing JET facility is substantial
  - Mass and area of beryllium is likely to be much greater by several factors than present levels

**<u>John Spiro – JET Occupational Health Programme:</u>**

Provided by:

- Capita Health Solutions – private contractor to UKAEA
- Services, when initially provided (and until 1997), were in-house
- Provided from dedicated facility on Culham Science Centre
- Provided Monday to Friday, normal working hours

The Team

- Occupational Physician (part-time) appointed under IRRs
- Occupational Health Advisors
- Administrative Support
- Physiotherapist
- Local management

The Service

- Emergency treatment, backing up site First Aiders
- Health Surveillance
- Advice on health matters affecting work
- Emergency exercises
- Other services available e.g. for EURATOM staff

Health Surveillance

- Ionizing Radiations (IRRs)
- Beryllium
- Respiratory Protective Equipment
- Others e.g. Fork Lift Truck operation
- According to statutory or advisory protocols
- Records and certification

Ionizing Radiations

- According to specific regulations (IRR, 1999)
- Requires Appointed Doctor
- Pre-employment, periodic and special
- Format mainly statutory
- Subject to HSE audit
- Few exclusions, some restrictions

Respiratory Protection

- Covered generally by regulations
- Main concerns are full face respirators, and air-fed suits, hoods and blouses
- Standards and procedure not laid down, but agreed locally
- Common health concerns and age

Beryllium

- Health surveillance prgramme since late 1980s
- Essentially clinical assessment, based on HSE guidance
- Gas transfer tests initially included periodically instead of regular chest x-rays
- Annual assessments
- Assessments OHA (nurse) based
- Specific attention to history of respiratory and skin conditions and allergies
- Questionnaire
- Adequate lung function required
- Occupational physician review
- At least 300 assessments per year

Beryllium HS – Outcomes

- Gas transfer test problematic – abandoned
- Lung function abnormalities common
- Various non-specific skin problems
- Other general pathology, most non-work related

**But...no case of CBD so far known from JET**

Further Beryllium Issues:

- Risk of CBD at JET expected to be lower than in some other environments
- Long term follow up limited to date
- Influence of other factors at or outside work
- BeLPT has not been used for screening

Beryllium cuts:

- Protocol for cuts and wounds
    - Swab, irrigate, and swab
    - Several per year
    - Generally low levels of beryllium, if any

**Sandra Cruz – Analytical Sub-Committee Report:**

Subcommittee Background

- BHSC originally had analytical subcommittee that became dormant over time
- Implementation of f10 CFR 850 revealed vulnerabilities

Key Goals:

- Improve quality and consistency of methodologies
- Foster communications among analytical and IH communities
- Develop technical guidance and offer assistance to others

Sandra covered the current Subcommittee Membership, across the DOE complex with representation from the AWE

Initial Subcommittee Activities

- Bega regular conference calls 12-3
    - Every 2-3 weeks
    - Typically 14-18 participants each

Sandra reviewed the working groups activities and overview of action items, and showed the baseline questionnaire:

- Where is everyone now
- Background
- Surface Swipe sampling methods
- Digestion protocols
- Air Analysis
    - Method
    - Detection Limits
    - Quality Control
    - Interferences and how corrected

Where do we go from here?

- Sampling (10 action items)
    - Perform additional studies
    - Develop/enhance standard ASTM methods
        - Wet and dry
        - Bulk sampling
        - Vacuum sampling
    - Investigate ways to swipe materials more consistently
        - LANL
    - Questionnaire results may drive new actions
- Digestion (8 action items)
- Analysis/Reporting/Accreditation (10 Action Items)
- Future Needs (2 action items)
    - Pursue BeO standard reference material
    - Near – real time monitoring equipment
    - Questionnaire results may drive new actions
- Cross-cutting issues (6 action items)
    - Expand subcommittee membership
    - Develop list of common terms
    - Interface issues

Issues for Full BHSC

- Sampling
- Analysis / Reporting / Accreditation
- Cross Cutting

Conclusions:

- Subcommittee has broad membership which is continuing to grow
- Currently 36 action items being worked
- Regular Conference calls

**Ross Breese – AWE Chemical Analysis Operations:**

AWE Toxic Metal Analytical Services

Dosimetry and Radiological Metrology Services

- Chemistry
    - Routine programmes AST/EDT
    - Measurement and Calibration
    - Dose Assessment
    - HPRO
    - HSE Approved dosimitery services
    - Radiochemistry of biological samples
    - Alpha emitting radionuclide
    - Toxic metal analysis
        - Air PAS, Workplace, Stack = 12,000/year
        - Survey – Smear = 17,000/year

- Digestion Analysis
    - Air sample/Smear
        - Nitric Acid digestion
        - Atomic Absorption Spectroscopy
        - 0.02ug/sample, 0.2ug/samp.
    - Stack Samples
        - Nitric Acid / Perchloric acid
        - GFAAS
        - 2.5 ng/sample
        - 1 week analysis

**Andy Fox-Boudewijn – Beryllium Hydrodynamics Operations at AWE:**

Brief UK Legislative overview
AWE Arrangements

- Be risk assessment process
- Be air sampling limits
- Be surface contamination limits
- Analysis procedures for air/smear samples
- Health surveillance arrangements
- Be area designation
- Be Clean up

UK Legislation overview

- Control of Substances Hazardous to health regulations 2002
- UK Maximum exposure Limit (MEL) for Be
- Guidance limit short term exposure
- Adequate control: Less than MEL and ALARP
- No limit

COSHH Assessment identifies:

- Risks to health from work/process
- Measures required to adequately control exposure

Typical Exposures were considered and reviewed

Be Air Sampling was covered, as well as the Personal Air Sampling techniques, alert levels, action levels, facility internal investigation levels, etc.

Be Air Sampling: Static air sampling with no specific limits,
Risk assessment determines – number, location, filter change frequency
'Standard' results are below the detection threshold
Any 'higher' readings are abnormal
Stack Air Sampling, has environmental concerns

Be Surface Contamination Limits:

Dry Smears, 10 % pick up assumed
Two Surface contamination Limits (controlled area versus non-controlled area
Specific 'small item' rules

Analysis of PAS, SAS and Smears

Routine PAS and SAS
- Flame AAS
- Approx. 50 samples/week
- Detection threshold, 0.02 ug

Routine Smears
- Flame AAS\\approx 60 samples/week
- 0.2 ug / week

Stack Results
- Graphite Furnace AAS
- Approx. 3 samples/week

Be Health Surveillance

Flagged up via COSHH Assessment
HS Categories dependent on:
- Significant Risk Current//historic exposure

Significant risk:
- Initial and annual medical examination
    - Respiratory questionnaire and lung function test

Be Area Designation

Supervised Area – Potential risk from Be considered low
Clean Be handled /stored
Demarcated, barrier on mandatory
PAS not mandatory

General points for all Be Areas:
Access controlled
AWE Be surface contamination limits applied

Be Area Designations:
Controlled Area – Principal wok areas for handling beryllium

- Controls:
    - Barrier System
    - Full PPE
    - PAS, Coveralls, Gloves, Shoes (over shoes)
    - Specific change room procedures

Be Area Designations

- Exclusion Area – Potential risk from Be Considered
    - Controls
    - Full Safe System
    - RPE

  - Barrier System
  - Full PPE
  - Specific Change room Procedures

**David Weitzman – Update on DOE Release Criteria:**

David walked us through the release criteria updates for sites for a topic of discussion. There is some discussion as to whether the gray areas should be empirically defined or left up for site specific judgment.

Three Major Sections

- Release Criteria
- Characterization
- Remediation and Handling

Since there are consolidated efforts, methods, and techniques, there are still some inconsistencies that have to be ironed out.

Characterization:

- Statistics
- Strategies
- Methods
  - Surface
    - Wet
    - Dry
    - Vacuum
  - Air
  - Bulk
- Analytical Methods

Remediation and Handling

- Waste Disposal
- Servicing Vehicles
- D&D Activities
- Servicing Building Systems\Posting and Lableing\Packaging for internal transfer
- Dermal contamination

Includes Examples

Include Examples rather than selecting one method?

Needed Enhancements

- New Title
- Fill Content Gaps
- Overlap

Gaps:

- Examples of Site-specific Restrictions for Slightly Contaminated
- Statistics for non-parametric data Air Sampling Strategies
- Dry Swipe methods Bulk Sampling methods
- Reporting Strategy and Results
- Others not yet defined

Next Steps

- Reviews by teams (3)
- Reviews by All
- Obtain Input from BHSC Analytic Subcommittee
- Determine
    - "Voice"
    - Home
- Publish and Maintain

We have to be careful that the Federal Advisory Commission Act is honored

**Committee Adjourned for the day:**

Following David Weitzman's presentation on Release Criteria updates, the committee adjourned for the day.

**Mike McCawley – Beryllium Sampling Procedure:**

Mike McCawley briefed the BHSC on the lung deposition curves as it's understood. Mike also discussed the relationship of particle size versus deposition onto the lungs:

Mike also discussed the area types that had the highest risk with lung deposition as well as the adjusted disease prevalence pre 1997 versus the 1999 values.

Mike also discussed the development of method of sampling the way that the lung does. The size distribution size was down in the 0.01 micrometer regime. This sampling method utilized 3 polycarbonate filters inline with gravimetric analysis to measure the total mass, and then via chemical analysis to obtain the beryllium mass, and find that the % Be = Be mass/Total mass.

Mike showed the assembly of the monitoring system in a schematic to demonstrate the measurement technique, and the manner in which the data is collected.

**Ken Groves – Determining the Sensitivity of the Be Immuno-Lymphocyte Proliferation Test:**

This presentation will be presented on the web under the BHSC website (www.sandia.gov/BHSC)

Ken Groves briefed the committee on Determining the Sensitivity and Specificity of the Beryllium Immuno-Lymphocyte Proliferation Test as Compared to the Standard 3H-Thymidine Be Lymphocyte Proliferation Test.

There is a significant need for a more accurate and reliable test:

False positive (abnormal) tests produce anxiety and fear. Many workers refuse to get into or stay in surveillance programs
There is no consensus as to extent of beryllium sensitization, and we cannot screen the general population.

Ken briefed the committee on the sampling plan to determine the effectiveness of the new testing versus the standard Be-LPT test.

The following discussion ensued that talked about the comparative tests and that potential directions. David Weitzman led a discussion on research needs and the latest status of where the responsibility lies for accomplishing the tasks, as well as potential funding avenues.

The committee adjourned for lunch.

The committee reconvened after lunch to a series of open discussions on the floor.

**Kathy Creek – Open Discussion on the Need For Hand Samplings**

Mike McCawley introduced the subject that there was a significant disparity between populations on sensitivity with respect to hand level contamination. There is an issue with hand sampling as well within the dental community.

The analytical subcommittee was tasked with reviewing a way to sample skin, and perhaps get with the central beryllium IRB to discuss skin sampling issues. There has not been a clear delineation between operations and research work. Further discussion on this activity posed the question as to the fact that there are already protocols in place for skin sampling (i.e. via some beryllium and some lead). Kathy Creek tasked the sub-committee with finding out what is done in the HP/IH community before proceeding. The main point of contact will be with Shirley Frye.

**Kathy Creek – Review of Research Plan for Swipe Samples**

Kathy reviewed her notes on potential swipe methods from the Research Needs Sub-Committee. The notes were reviewed, and some discussion was given to the fact that the greatest variable in the case was the amount of pressure applied which is dependent upon who performs the swipe sample.

Consideration was given to the fact perhaps a weight on the sample or a spring loaded "virtual finger" could be utilized. It was decided that a weight could be pseudo "calibrated" to the weight of an experience sample operator and experimented with at LANL.

**David Weitzman – Presentation on Latest DOE Numbers from Site Sensitization/CBD**

David Weitzman presented the latest site numbers. There was some question about the accuracy of the numbers within the registry after examining some of the specific site's numbers. As a result, David will verify the numbers before they are reported on the BHSC meeting minutes and web site.

**Kathy Creek – Controls for Worker Protection**

Overview:

Access Controls, Kathy briefed the group on the requirements for entry (need for entry, training, Med surveillance) and a badge reader

The facility was designed with 100% filtered air, multiple levels of filtration for exhaust, versatility in the exhaust system, analytical laboratory, laundry laboratory, laundry facilities, easy to clean surfaces, etc.

The engineering controls consisted of General and process exhaust, glove boxes, etc. Contamination controls consist of one normal route of entry/exit, housekeeping PPE, etc, PPE includes coveralls, gloves, booties and respiratory protection

Feedback systems include 100% personal exposure monitoring and stack monitoring, surface sampling on scheduled basis, action levels for personal sampling = 0.2 microgram per cubic meter for and 8 hour day. The surface limits for housekeeping – 3 micro gram per square 100 cm, and outside the beryllium is 0.2 microgram per square 100 cm.

Kathy gave a virtual picture tour of the BTF

# Agenda

## Beryllium Health & Safety Committee Meeting
## Aldermaston, April 2004

**Tuesday, April 27th**

AWE Training Centre (Aspects Learning), Portland House

| | | |
|---|---|---|
| 08-00 | Pick-up at Renaissance Reading Hotel | |
| 09-00 | Welcome | W. Haight (MD AWE) |
| 09-15 | Announcements | Kathryn Creek/Tony Quinn |
| 09-30 | Overview of last meeting minutes | J. McKenney |
| 09-45 | History of Beryllium Manufacturing Operations at AWE | Tony Quinn |
| 10-00 | Break | |
| 10-30 | Self Assessment – Best Management Practices | Alex Romero |
| 11-15 | Beryllium Disease in the UK – A historical Perspective | Prof Jones-Williams |
| 11-30 | AWE Medical Surveillance Programme | Dr Nick Lewis |
| 12-00 | Pictorial Presentation of Beryllium Facility | Clive Le Gresley |
| 12-30 | Lunch | |
| 14-00 | JET Occupational Health Programme | Bharat Patel |
| 14-30 | Analytical Sub-Committee Report | Sandra Cruz |
| 15-00 | AWE Chemical Analysis Operations | Ross Breese |
| 15-15 | Break | |
| 15-30 | Beryllium Hydrodynamics Operations at AWE | Andy Fox-Boudewijn |
| 16-00 | DoE Release Criteria | David Weitzman |
| 16-55 | Adjourn | |

# Agenda

## Beryllium Health & Safety Committee Meeting
## Aldermaston, April 2004

**Wednesday, April 28th**
AWE Training Centre (Aspects Learning), Portland House

| | | |
|---|---|---|
| 08-00 | Pick-up from Renaissance Reading Hotel | |
| 08-45 | Agenda | Kathryn Creek |
| 09-00 | TBD | Mike McCawley |
| 09-30 | Discussion on Surface Limits | All |
| 10-00 | Break | |
| 10-30 | Discussion on Skin Exposure | All |
| 11-30 | | |
| 12-00 | Research Needs Sub-Committee Report | Kathryn Creek |
| 12-30 | Lunch | |
| 14-00 | Topical Discussions – Low % Be Materials | All |
| 15-15 | Break | |
| 15-30 | Topical Discussions – Low % Be Materials (cont) | All |
| 16-00 | Plan For Tour of AWE | Tony Quinn |
| 16-25 | Adjourn | |

19-00 Pick-up from Renaissance Reading Hotel for Buffet/Skittles game at AWE Club

22-30 Pick-up for return to hotel

# Agenda

## Beryllium Health & Safety Committee Meeting
## Aldermaston, April 2004

**Thursday, April 29th**
AWE Aldermaston

08-00 Pick-up from Renaissance Reading Hotel (Cleared Group only)

08-45 AWE Aldermaston Main Gate – Cleared Group for badging

09-15 Cleared Group – Visit to Beryllium Facility

09-45 Pick-up from Reading Renaissance Hotel (Uncleared Group)

10-30 AWE Aldermaston Main Gate – Uncleared Group for badging

11-00 Whole Group – Visit to Chemical Analysis Labs

11-45 Whole Group – Visit to Medical Centre

12-30 Lunch

14-00 Wash-up – Medical Centre Conference Room

15-00 Afternoon Tea & Farewell

15-30 Adjourn