



International Atomic Energy Agency

**SAFETY ASSESSMENT METHODOLOGIES AND
THEIR APPLICATION IN DEVELOPMENT OF
NEAR SURFACE WASTE DISPOSAL FACILITIES
-THE ASAM PROJECT-**

PHIL METCALF

**IAEA REGIONAL WORKSHOP ON SAFETY CONSIDERATIONS OF
DISPOSAL OF DISUSED SEALED SOURCES IN NEAR SURFACE
FACILITIES**

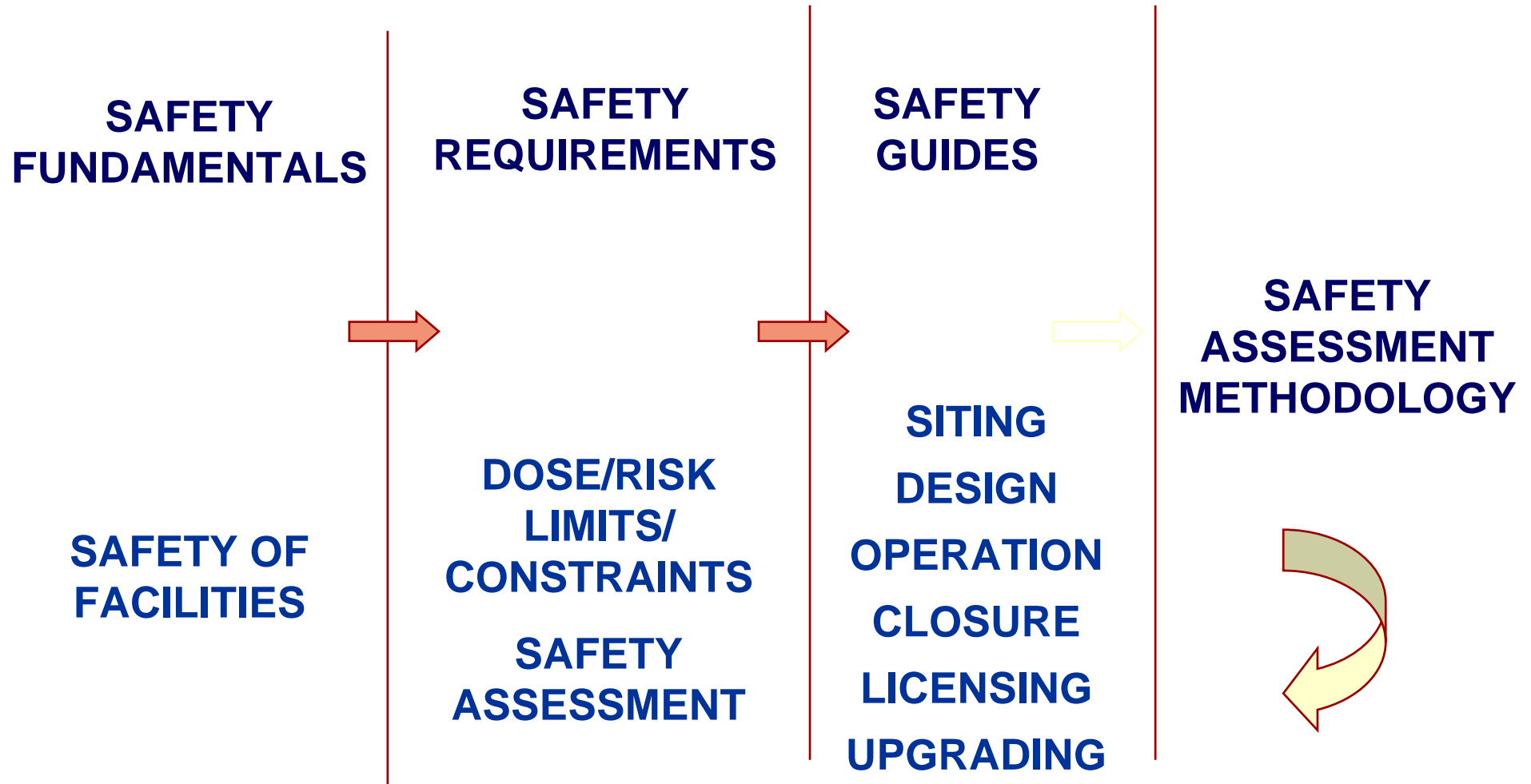
1-5 DECEMBER 2003, SOFIA, BULGARIA

AGENDA

- **BACKGROUND**
- **ASAM PROJECT**
 - **SCOPE AND OBJECTIVES**
 - **ACTIVITIES**
 - **1ST RCM**
- **CONTRIBUTION TO THE IAEA WASTE SAFETY PROGRAMME**
 - **SAFETY STANDARDS (RADWASS PROGRAMME)**
 - **SUPPORTING DOCUMENTS**
 - **APPLICATION OF STANDARDS**



BACKGROUND



BACKGROUND

- **ISAM PROJECT**
 - EVALUATION AND ENHANCEMENT OF APPROACHES AND TOOLS
 - PROVIDE PARTICIPANTS WITH PRACTICAL EXPERIENCE ON IMPLEMENTATION OF THESE TOOLS
 - BUILD CONFIDENCE IN APPROACHES AND TOOLS

MAIN FOCUS: SAFETY ASSESSMENT METHODOLOGY



ISAM PROJECT-OUTCOMES

- BROADLY ACCEPTED METHODOLOGY
- SYSTEMATIC APPROACH FOR REVIEW OF SAFETY ASSESSMENT
- MAIN CRITERIA FOR DECISION MAKING ON ACCEPTABLE AND SUFFICIENT LEVEL OF DETAIL, ANALYSES AND PRESENTATION OF SAFETY ASSESSMENT AND RESULTS OBTAINED
- PROPOSALS FOR FOLLOW UP PROJECT ON APPLICATION OF METHODOLOGY



ASAM PROJECT

- BUILD ON ISAM PROJECT
- DIFFERENT LEVEL OF EXPERIENCE OF APPLICATION OF THE METHODOLOGY IN MEMBER STATES
- DECISION ON SAFETY OF WASTE DISPOSAL FACILITIES AND ROLE OF SAFETY ASSESSMENT
- COMMON ISSUES ON DEVELOPMENT AND REVIEW OF SAFETY ASSESSMENT
- PROPOSALS FROM OVER 80 EXPERTS FROM 40 COUNTRIES

MAIN FOCUS: APPLICATION OF METHODOLOGY



ASAM PROJECT

SCOPE

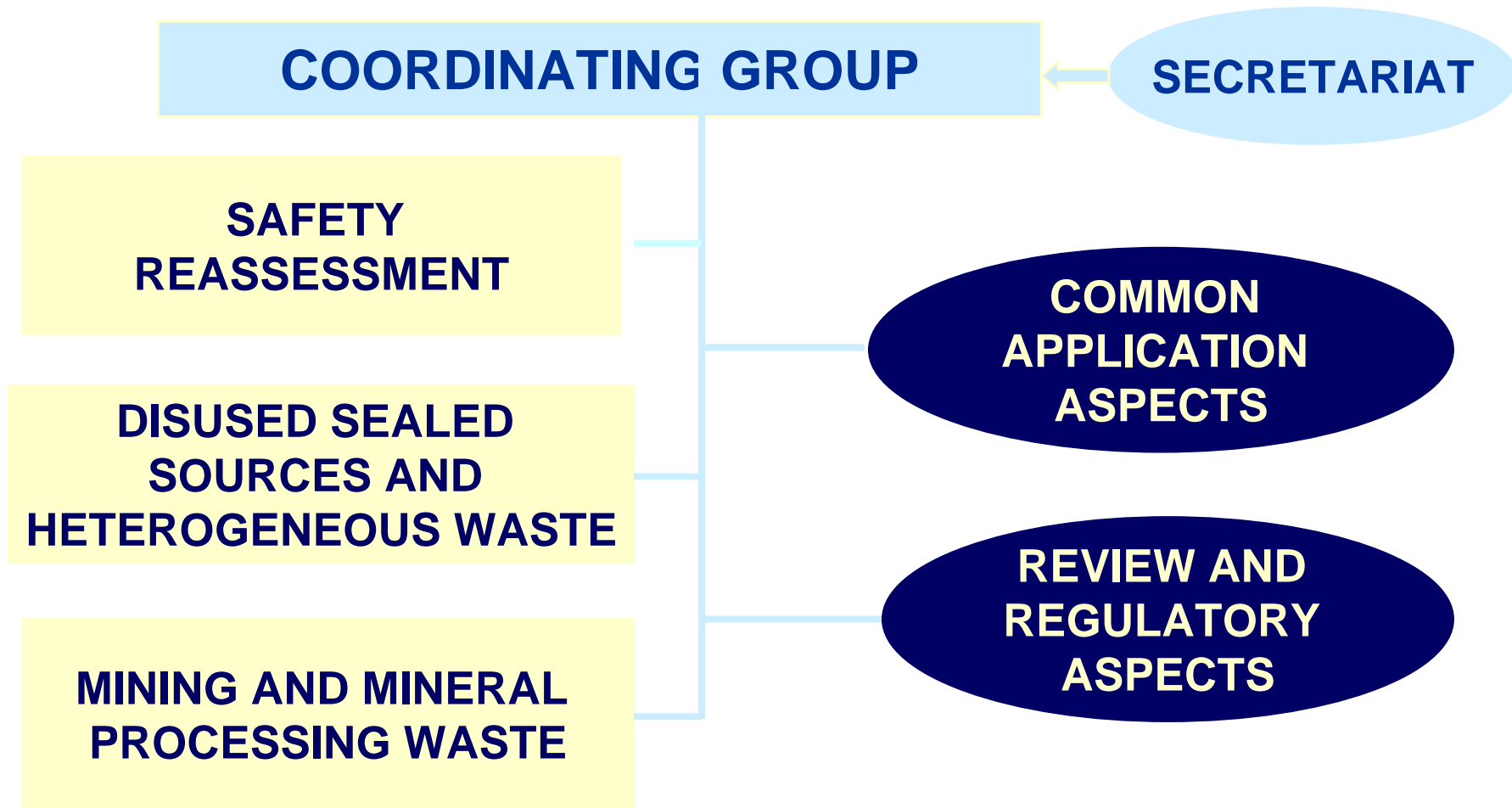
- NEAR SURFACE DISPOSAL FACILITIES
- ALL TYPES OF LOW & INTERMEDIATE LEVEL WASTE
- EMPHASIS ON POST-CLOSURE SAFETY ASSESSMENT
- ACTUAL FACILITIES WITH EXISTING SAFETY ASSESSMENTS

OBJECTIVES

- EXPLORE PRACTICAL APPLICATION TO A RANGE OF DISPOSAL FACILITIES FOR A NUMBER OF PURPOSES E.G. DEVELOPMENT OF DESIGN CONCEPTS, SAFETY RE-ASSESSMENT, UPGRADING SAFETY
- DEVELOP PRACTICAL APPROACHES TO ASSIST REGULATORS, OPERATORS AND OTHER EXPERTS IN REVIEW OF SAFETY ASSESSMENT



ASAM PROJECT – WORKING GROUPS

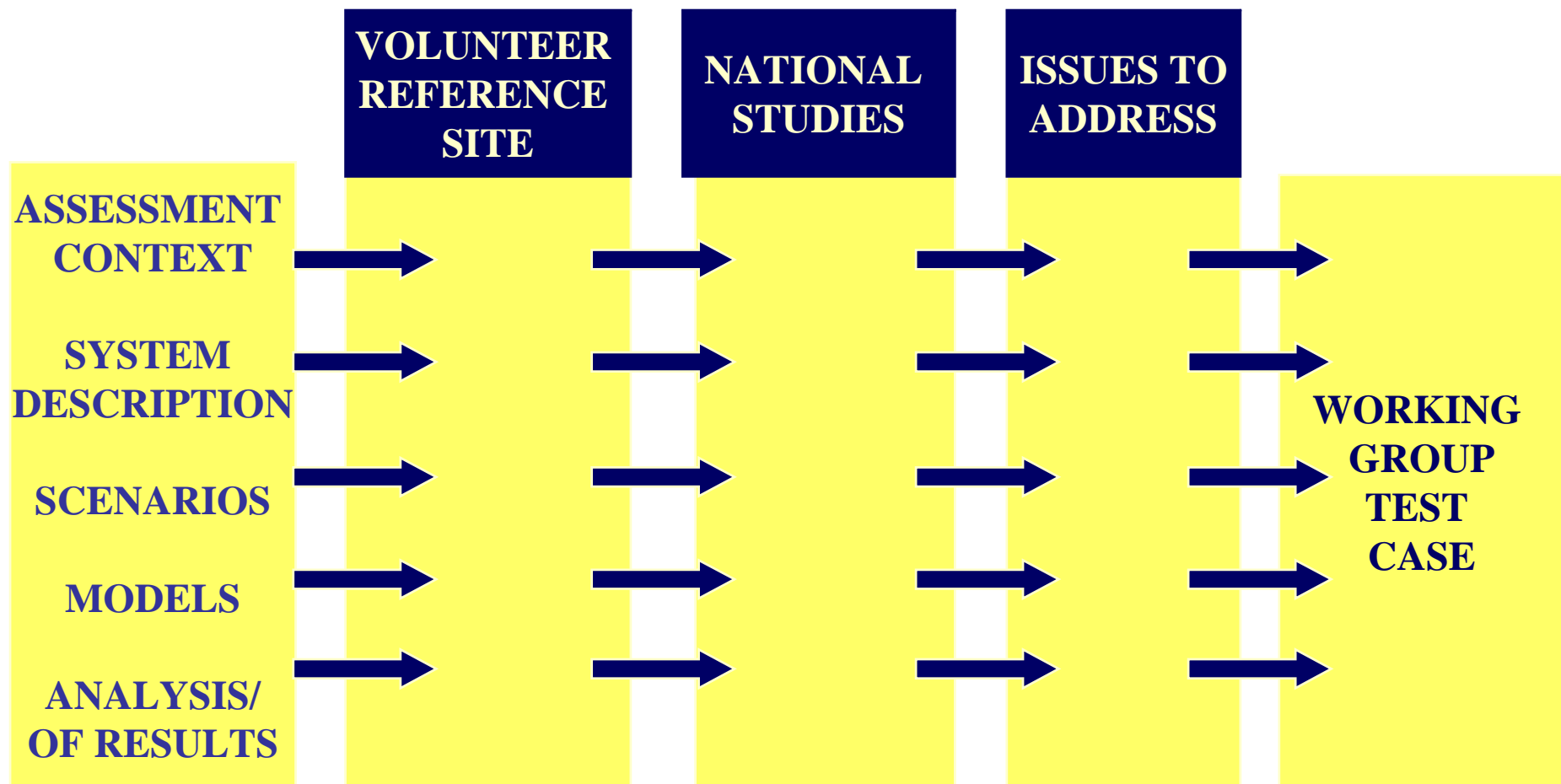


APPLICATION WGS

- **REASSESSMENT OF EXISTING FACILITIES**
 - USE OF SA IN DECISION MAKING ON SELECTION OF OPTIONS
 - VOLUNTEER SITE (HUNGARY)
- **DISUSED SEALED SOURCES**
 - EVALUATION OF DISPOSABILITY OF DISUSED SEALED SOURCES IN NEAR SURFACE FACILITIES
 - VOLUNTEER SITE (SARATOV, RUSSIA)
- **MINING AND MINERALS PROCESSING WASTE**
 - EVALUATION OF LONG-TERM SAFETY
 - VOLUNTEER SITE PMC (S. AFRICA)



PROPOSED APPROACH



CROSS-CUTTING WGS

COMMON APPLICATION WG

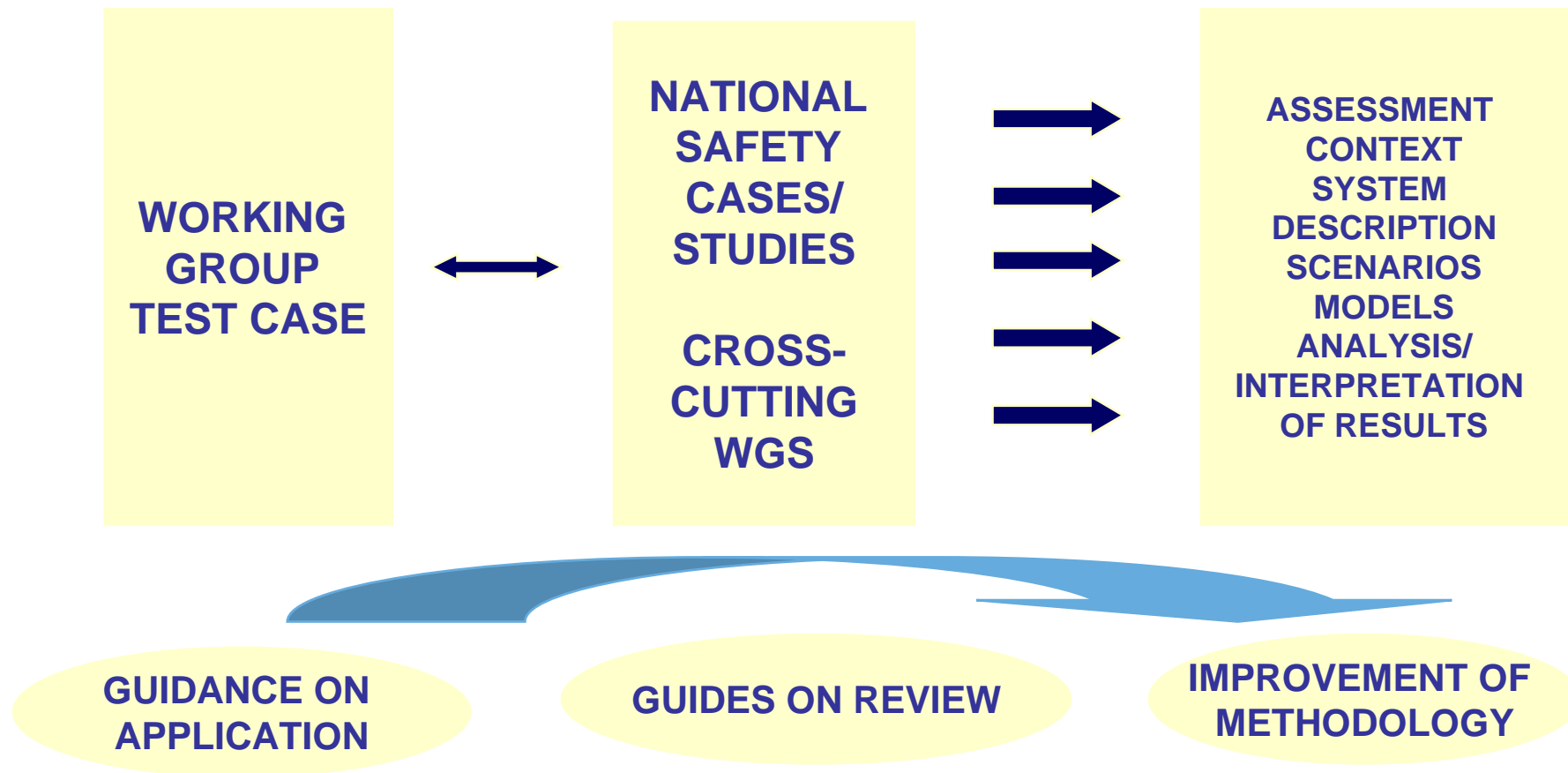
- INVESTIGATE APPROACHES FOR TREATMENT OF COMMON ISSUES TO SA
 - ASSESSMENT OF DISRUPTIVE EVENTS
 - ASSESSMENT OF EB PERFORMANCE
 - CONSERVATISM VS. REALISM
 - PRIORITIZATION OF SAFETY ASSESSMENT ACTIVITIES
 - LITTLE OR NO INFORMATION

REVIEW AND REGULATORY ASPECTS

- REVIEW OF POST-CLOSURE SA OF LILW FACILITIES
- INTEGRATION OF SA IN SAFETY CASE
- CONFIDENCE BUILDING



PROPOSED APPROACH



1ST RCM NOVEMBER 2002

68 PARTICIPANTS FROM 31 COUNTRIES

OUTCOMES OF THE MEETING

- AGREEMENT ON SCOPE, OBJECTIVES AND MAIN ACTIVITIES
- AGREEMENT OF DETAILED WG ACTIVITIES AND WORK PLANS
- USE OF VOLUNTEER SITES
- FURTHER CONSIDERATION:
 - HUMAN INTRUSION/INSTITUTIONAL CONTROL/SECURITY
 - WASTE FROM OIL/GAS INDUSTRY
 - VERY LOW LEVEL WASTE
 - CATEGORIZATION OF SEALED SOURCES COORDINATED WITH OTHER IAEA ACTIVITIES
 - INPUT FROM 1ST MEETING ON JOINT CONVENTION



POTENTIAL CONTRIBUTION TO IAEA WASTE SAFETY PROGRAMME

- **SAFETY STANDARDS**
 - SAFETY ASSESSMENT FOR NEAR SURFACE
 - SAFETY STANDARDS FOR BOREHOLE DISPOSAL
 - DEMONSTRATION OF COMPLIANCE WITH SAFETY REQUIREMENTS
- **SUPPORTING DOCUMENTS**
 - LIMITATIONS, CONDITIONS AND CONTROLS
- **APPLICATION**
 - PEER REVIEWS, APPRAISALS
 - TRAINING AND EDUCATION (MATERIAL)
 - TECHNICAL COOPERATION (AFRA/BDC)
 - RESEARCH AND DEVELOPMENT (CRPS)
 - EXCHANGE OF INFORMATION



MEETINGS

1st Research Coordination Meeting

November 2002

Joint Working Groups Meeting

2-6 June 2003, IAEA, Vienna

2nd Research Coordination Meeting

February 2004

ASAM Web Site

<http://www-rasanet.iaea.org/projects/asam.htm>

