

Guideline Working Groups (Active) status reports

Guideline	Status	Convenor
Dam break modelling and Consequence Assessment	New guideline in preparation.	David Stephens
Dam Safety Emergency Plans and Emergency Management	New guideline undergoing international review.	Angus Paton
Dam Safety Management	Updated guideline in preparation. 2003 version is still available for purchase.	David Stewart
Design, Construction, and Operation of Retarding Basins-Wetlands and Large Ornamental Lakes	New guideline in final stages of preparation.	Richard Rodd
Design Criteria for Concrete Arch Dams	Content in development, appropriate form of dissemination TBA.	Marius Jonker
Outlet Works for Dams	New guideline in preparation.	Marius Jonker
Selection of Acceptable Flood Capacity for Dams	Updated guideline has been released for member consultation. 2000 version is still available for purchase.	Peter Hill
Tailings Dams – Planning, Design, Construction, Operation and Closure – REVISION 1	Revision 1 published in 2019. Major review underway in light of global tailings standard. Revision 1 (2019) is still available for purchase.	Brett Stephens

Guidelines on Dambreak Modelling and Consequence Assessment

Significant progress has been made on first drafts of a number of sections of the dambreak modelling and consequence assessment guidelines. Initial drafting of the first section of the document (focused on dambreak modelling) is largely complete. Progress has been slow on the subsequent sections relating to consequence assessment however it is hoped to accelerate this over late 2024.

Membership of the Working Group	Company
David Stephens	HARC
Michel Raymond	HARC
Michael Smith	Water Corporation
Andrew Northfield	HARC
Kevin Bartlett	Seqwater
Rob Fowden	DRDMW
Tim Rhodes	SMEC

David Stephens

Convenor

Dam Safety Emergency Plans and Emergency Management

The Reference Group reviewed the draft guidelines for a second time. Working Group incorporated comments and completed the final draft of the Guideline in March 2024. It is currently undergoing International Review with comments expected in the next few months.

Membership of the Working Group	Company
Angus Paton	Murray-Darling Basin Authority
John Tibaldi	Seqwater
Siraj Perera	Department of Energy, Environment and Climate Action
Jonathon Reid	GHD
Neil Smith	Hydro Tasmania
Paul Sureda	Murray-Darling Basin Authority
Tansy Huang	HARC
Reference Group	
Michel Raymond	HARC
Chris Nielsen	Department of Regional Development Manufacturing and Water Queensland
Michael Smith	Water Corporation
Laurie Dwyer	Department of Natural Resources and Environment
Damien Bryan	Water NSW
Craig Ronan	NSW State Emergency Services
Russell Dippy	South Australia Police
Michael Hughes	Sunwater
David Jeffery	Goulbourn-Murray Water
International Expert Review	
Tony Bennett	KGS Group (previously with Ontario Power Corporation)

Angus Paton
Convenor

Dam Safety Management

1 Introduction

The Working Group has agreed on an overall structure and focus for the revision of the Guideline and individual members and small groups are drafting chapters for internal review.

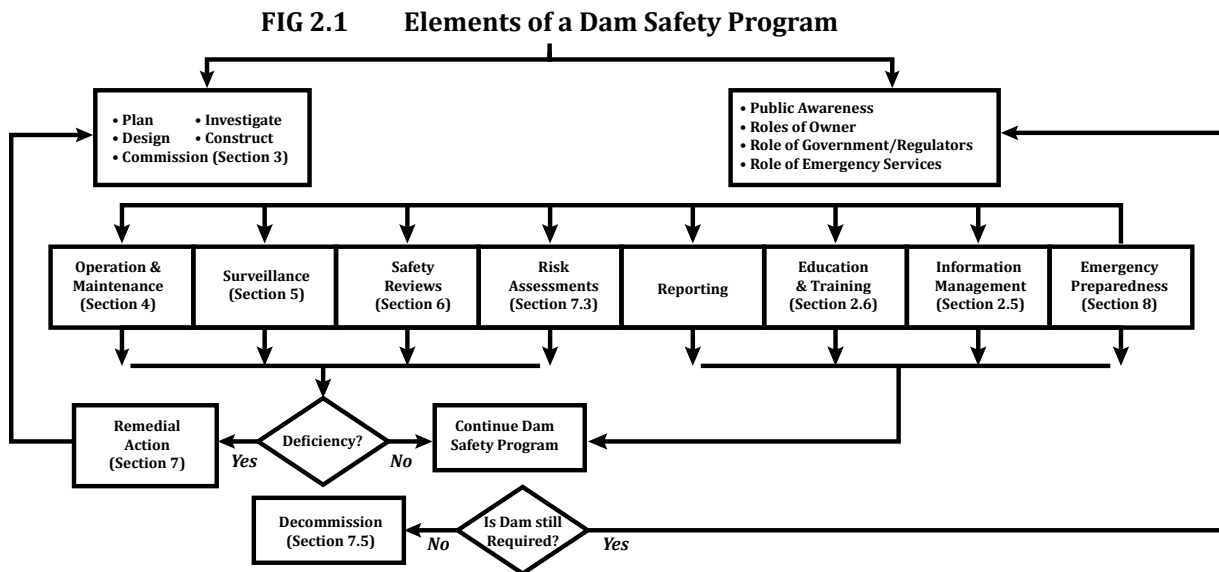
Following our presentation to the ANCOLD Conference in Cairns last year, we have again been invited to present an update to members at the Conference in Adelaide in November this year.

Our approach continues with the premise that there is nothing technically wrong with the current 2003 guideline which is still widely used in the industry. Our key areas for review have been:

- Update or remove dated content.
- Structure the document to align with the ISO 55000 International Asset Management Standard.
- Outline the importance of an integrated Dam Safety Management System (DSMS) approach.
- Reflect current risk management approaches in relation to surveillance.
- Reflect current practices in relation to data management and the use of new technologies.
- Ensure applicability of content to all dams, including TSFs and scalable to all dam owners.
- Recognise that some aspects will now be covered in other documents (e.g. Dam Safety Emergency Preparedness).

2 Proposed Guideline Structure

The current Guideline is well structured and based around its Figure 2.1, reproduced below for reference.

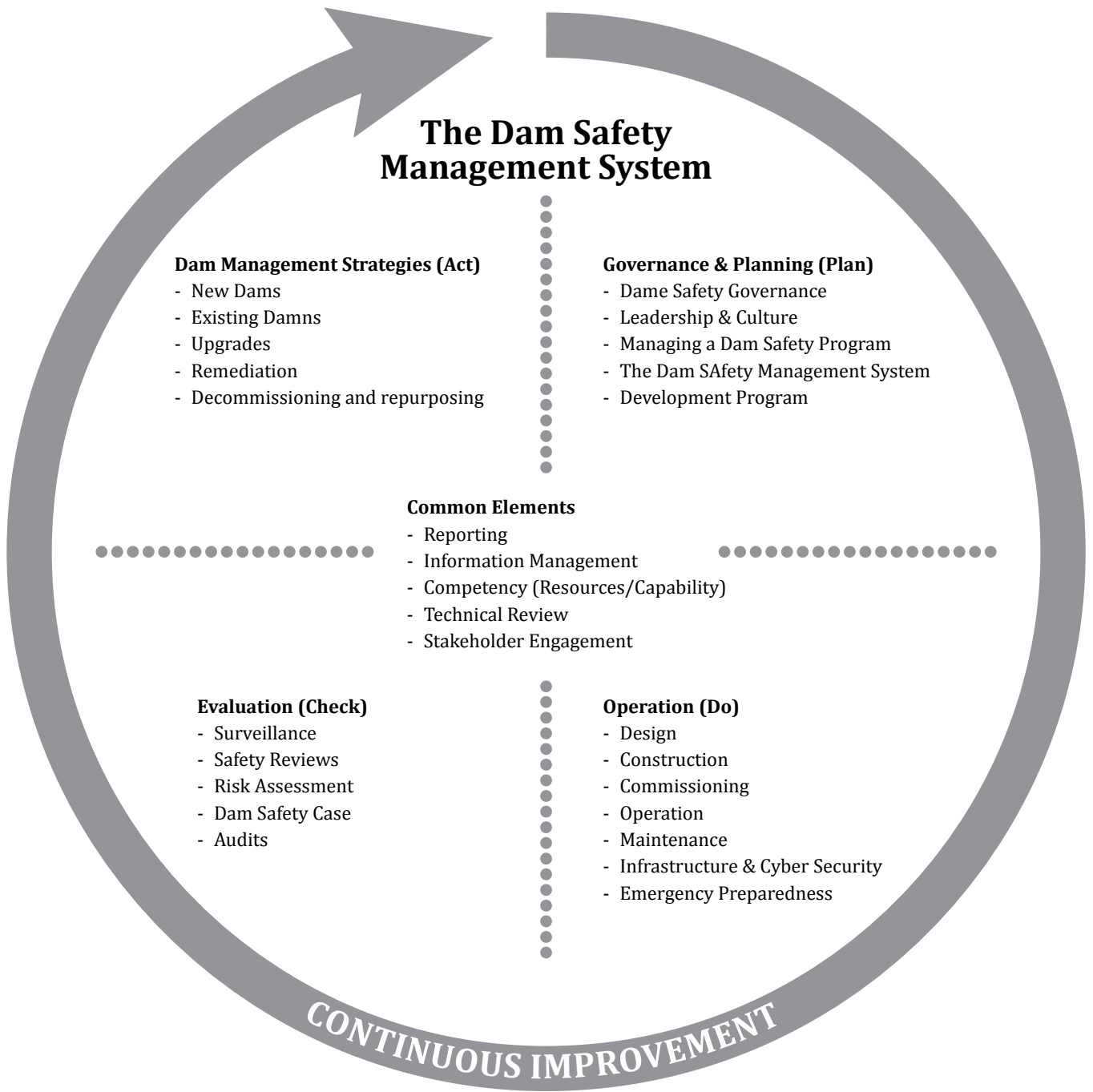


We have spent some time reviewing this figure and content and have developed a revised structure of the Guideline to include all these elements (and more). We propose a new figure which reflects the concept of “Plan”, “Do”, “Check” and “Act” (PDCA) as an operating principle of ISO 55000, founded on the tenet of continuous improvement throughout the lifecycle of the dam.

The figure will be renamed as “The Dam Safety Management System” and as with the 2003 Guideline, this figure will form the basis of the table of contents and roadmap through the document.

We have worked through several iterations and our current thinking is shown in the figure on page 22.

Proposed replacement for the current Figure 2.1:



Following from this concept, our current Draft Table of Contents is:

Preamble

1. Introduction

Part A – Governance & Planning

2. **Dam Safety Governance**
3. **Leadership & Culture**
4. **Managing a Dam Safety Program**
5. **The Dam Safety Management System**
6. **Dam Development Process**

Part B – Dam Operation

7. **Design**
8. **Construction**
9. **Commissioning**
10. **Operation**
11. **Maintenance**
12. **Infrastructure & Cyber Security**
13. **Emergency Preparedness**

Part C – Performance Evaluation

14. **Surveillance**
15. **Safety Reviews**
16. **Risk Assessments**
17. **Dam Safety Case**
18. **Audit**

Part D – Dam Management Strategies

19. **New Dams**
20. **Existing Dams**
21. **Dam Upgrades**
22. **Dam Remediation**
23. **Decommissioning and repurposing**

Part E – Common Elements

24. **Reporting**
25. **Information Management**
26. **Competencies, Resources and Capability**
27. **Technical Review**
28. **Stakeholder Engagement**

Glossary

References

Appendices

Based on this approach and the underlying theme of an integrated DSMS, the Working Group will recommend the revised guideline be retitled to the “ANCOLD Guidelines on Dam Safety”.

3 Current Progress

Drafting and internal review of all chapters is currently underway and as at September 2024 we are around 30% complete in chapter drafting with some internal review complete.

While we continue to review existing and draft new content, it is now an opportune time to request a broader review from industry and in September 2024 we established a Reference Panel representing a broad spectrum of experienced industry professionals. The Reference Panel has been asked initially to provide comments on overall intent, direction and structure of the revised guideline.

4 Summary Program

Our current program in summary is:

Late October 2024	Receive comments from Reference Panel
November 2024	Information session to members at ANCOLD Conference Include initial feedback from Reference Panel Update ANCOLD Executive
January/February 2025	Second round engagement of Reference Panel Update ANCOLD Executive
April 2025	Initial content drafting complete and internally reviewed by Working Group.
May 2025	Third round engagement of Reference Panel Update ANCOLD Executive
July 2025	Draft document ready for editing, Executive endorsement and engagement of International Reviewer(s)
Late 2025 (TBC)	Update on final draft to members at ANCOLD Conference

Final review, drafting and publication following review and consultation process.

REFERENCE PANEL MEMBERS		
Working Group Members	Affiliation	State
David Stewart (Convenor)	Australian Dams & Water Consultants	Vic
Josh Clark (Secretary)	Tasmanian Irrigation	Tas
Mark Arnold	Melbourne Water	Vic
Jarrad Coffey	Red Earth Engineering, formerly Rio Tinto	WA
Oliver Giudici	Hydro Tasmania	Tas
Chris Nielsen	Dept. of Regional Development, Manufacturing & Water	Qld
Louise Thomas	GHD (Northern Division)	WA/Norway
Guy Jayasekara	WaterNSW	NSW
Siraj Perera	Department of Energy, Environment and Climate Action	Vic
REFERENCE PANEL MEMBERS		
Michael Smith	Water Corporation	WA
Brian Peters	Local Government officer	Qld
Rob Keogh	Rob Keogh Advisory	Qld
Shane McGrath	SGM	Vic
Barton Maher	AECOM	Qld
David Brett	GHD	Tas
Yuqi Tan	ATC Williams	NT
Andrew Reynolds	GHD	ACT

David Stewart

Convenor

Design, Construction, and Operation of Retarding Basins-Wetlands and Large Ornamental Lakes

Mark Arnold and I are currently working on a Commentary Section to offer additional guidance and interpretation for designers. While the task is taking longer than originally expected due to other workload demands, progress is being made.

Richard Rodd

Convenor

Design Criteria for Concrete Arch Dams

Alongside the existing guidelines on Design Criteria for Concrete Gravity Dams (2013), new guidelines have been proposed to establish the design criteria specific to arch dams and their foundations.

The development of these guidelines is currently suspended pending a decision on whether to proceed with them as independent guidelines or to integrate them into the upcoming revision of the Design Criteria for Concrete Gravity Dams. Efforts are presently focused on evaluating the feasibility of merging the guidelines or maintaining them as distinct publications.

Working Group	Company
Marius Jonker	Aurecon Australasia
Francisco Lopez	SMEC
Dr Radin Espandar	Mott McDonald
Independent Reviewer	
To be confirmed	
International Reviewer	
To be confirmed	

Marius Jonker

Convenor

Outlet Works for Dams

The guidelines for outlet works have reached a point where the Working Group will seek input from the reference group on specific chapters prior to releasing the draft version to the broader ANCOLD community.

Initially ten “practice notes” were considered in developing the guidelines. After careful consideration and drawing from experience in developing parts of the guidelines, the Working Group has decided to simplify the guidelines into 6 chapters, as shown in the diagram. Once Chapter 1 is completed, each following chapter can be released and in the future updated individually. The chapters maintain the original structure of four parts, organised around the concept of an asset lifecycle. Chapter 4 has taken the place of the original “Practice Note 8 - Operation & Maintenance”, as the Working Group is of the opinion that the operation and maintenance information will primarily be sourced from equipment suppliers. The objective of this section of the guidelines was to focus on the essential elements of equipment inspection and testing undertaken by asset owners.

The development of chapters 1, 4, and 5 has been finalised, and the Working Group is advancing well with chapter 6. The Working Group is in the process of transferring the completed chapters into the ANCOLD guidelines template.

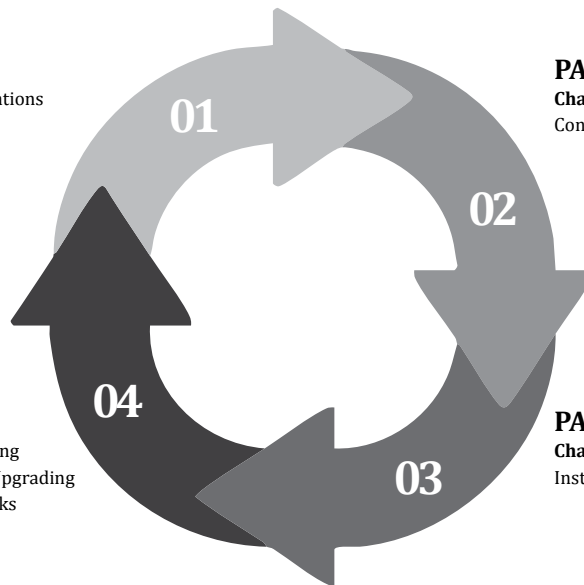
The Working Group has not yet begun work on Chapters 2 and 3; however, the progress achieved thus far has offered direction for the content of those chapters. After gathering insights from industry feedback during past workshops, the Working Group recognised that the content being requested would require an engineering manual approach, which is not the intention with these guidelines. In light of the material created for Chapters 4 to 6, Chapter 2 will now be a more succinct version of the original Practice Notes 3 to 6, which previously covered general, civil, mechanical, electrical and control elements of outlet works separately.

PART 1 PLANNING

Chapter 1: Functions, Configurations and Key Components

PART 2 DESIGN

Chapter 2: Design Considerations and Criteria



PART 4 OPERATION

Chapter 4: Inspection and Testing
Chapter 5: Rehabilitation and Upgrading
Chapter 6: Risk and Outlet Works

PART 3 CONSTRUCTION

Chapter 3: Procurement, Construction Installation and Commissioning

Working Group	Company
Marius Jonker (Civil)	Aurecon Australasia
Glen Hobbs (Mechanical)	Glen Hobbs & Associates
Frank Nitzsche (Mechanical)	GHD Pty Ltd
David Law (Mechanical)	Entura
Constantine Papas (Electrical)	GHD Pty Ltd
Reference Group	
Brian Simmons	WaterNSW
Charlie Curro	Department of Public Works
David Ryan	Stantec
Rod Mauger	Australian Asset Engineering
Alex Gower	Water Corporation
Additional Members	
Pieter van Breda	Project Manager
Independent Reviewers	
To be confirmed	

Marius Jonker

Convenor

Selection of Acceptable Flood Capacity for Dams

The ANCOLD Guidelines on Selection of Acceptable Flood Capacity (AFC) were published in 2000 and provide guidance on the selection of design flood capacities for dams. A Working Group was established in early 2014 and is supported by a Reference Group representing owners, consultants and regulators from around Australia.

The draft guidelines were substantially prepared by 2020 and progress then stalled for a few years. Since this time, there has been increasing awareness of the potential changes in flood estimates due to climate change and the need to incorporate these changes in decision making. The ARR chapter on climate change has just been updated. A new section has now been included in the draft AFC guideline to acknowledge the need to consider climate change and refer to this new industry guidance.

The next step is for the draft guidelines to be distributed to ANCOLD members to receive industry feedback before the guidelines are finalised and published (anticipated early 2025).

Working Group	Company
Peter Hill	HARC
Fiona Ling	WMAwater
Michel Raymond	HARC, formerly Seqwater
Andrew Reynolds	GHD, formerly Murray-Darling Basin Authority
Michael Somerford	Water Corporation WA
Reference Group	
Peter Allen	Queensland Department of Energy and Water Supply (<i>dec</i>)
Mark Arnold	Melbourne Water
Malcolm Barker	GHD
Peter Cloke	NSW Urban Water Services
Janice Green	Murray-Darling Basin Authority, formerly Bureau of Meteorology
Norm Himsley	Consultant, formerly NSW Dams Safety Committee
Barton Maher	AECOM, formerly Seqwater
Joe Matthews	AECOM, formerly Southern Rural Water
Shane McGrath	SGM Consulting
Nanda Nandakumar	WaterNSW (<i>dec</i>)
Angus Paton	Murray-Darling Basin Authority, formerly SA Water
Siraj Perera	Victorian Department of Energy, Environment and Climate Action
Michael Thornton	Snowy Hydro Limited
Independent Reviewers	
Rory Nathan	University of Melbourne
Phil Cummins	Australian Dams and Water Consultants (<i>dec</i>)

Peter Hill
 Convenor

Tailings Dam – Planning, Design, Construction, Operation and Closure – REVISION 1

The Tailings Working Group (TWG) which formed in 2021 continues with the development of the updated guidance document. This guidance updated draws from feedback received from a range of ANCOLD members, and stakeholder groups, and a series of updated technical guidance released on tailings dams since 2015. This includes the about to be issued ICOLD Bulletin 194 on Tailings Dams, among other references.

As is current practice, the revised Tailings Guidance will be based on the ANCOLD Dam Safety Management (DSM) Guidelines, which are also in the process of being updated. A representative from the TWG is active within the Working Group for DSM, to reduce duplication and direct where different methods or processes may be necessary for application to tailings dams. The updated tailings guidance will continue to promote the application of risk-based design methods for tailings dams.

The writing of sections of the guidelines has been ongoing this year, with the first section of the draft guidance issued to the Reference Group in September 2024, with a goal to have the complete document ready for review in 2025.

Membership of the Working Group	Company
Michael Ashley	HATS Consulting
Jarrad Coffey	Red Earth Engineering, formerly Rio Tinto
Jiri Herza	HATS Consulting
Wade Ludlow	Red Earth Engineering
Genevieve New	ATC Williams
Jay Ranasooriya	DMIRS WA
David Reid	UWA
James Robinson	Alcoa
Brett Stephens	Archadia Consulting
David Williams	UQ
Justin Willis	BHP
Technical Review Panel	
David Brett	GHD
Keith Seddon	ATC Williams
Bruce Brown	Independent Consultant
Andy Fourie	UWA
Stephen Newman	MMG
Norman Himsley	Independent Consultant

Brett Stephens

Convenor

Guideline Working Groups (Watching Brief) status reports

Guideline	Status	Convenor
Strengthening and Raising Concrete Gravity Dams (1992)	1992 version available for purchase.	Richard Rodd
Design of Dams and Appurtenant Structures for Earthquake (2019)	2019 version available for purchase	Steven O'Brien
Guidelines on Risk Assessment (2022)	2022 version available for purchase	Mark Foster
Consequence Categories for Dams (2012)	2012 version available for purchase.	David Ryan
Dam Instrumentation & Monitoring Systems (1983)	1983 version available for purchase.	Vacant
Design Criteria for Concrete Gravity Dams (2013)	2013 version available for purchase	David Ryan
Geotechnical Investigations of Dams, their Foundations, and Appurtenant Structures (2020)	2020 version available for purchase.	Vacant
Environmental Management of Dams (2001)	2001 version available for purchase.	Vacant
Regulation and Practice for the Environmental Management of Dams in Australia (2014)	2014 version available for purchase.	Vacant

The Guidelines listed above are still available for purchase on the ANCOLD website, and a watching brief is being maintained by the convenor.