Multinational Design Evaluation Programme (MDEP)

Issue Specific - Codes and Standards Working Group (CSWG)

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Members of the CSWG

- CSWG member states are: Canada, China, Finland, France, Japan, Korea, Russian Federation, South Africa, the United Kingdom and the United States.

- The OECD Nuclear Energy Agency (NEA) is the technical secretariat and IAEA takes part in the CSWG meetings.

- In addition, the Code Development Organizations (SDOs) are invited to attend the WG meetings.

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Scope

- **The codes and standards to be used are the pressure boundary component design codes developed by: ASME (United States), AFCEN (France), JSME (Japan), KEA (Korea), CSA (Canada) and the Russian Norms and Rules (Russian Federation)**

- **The CSWG will:**

  - evaluate the code differences in component design codes used in member countries (based on inputs identified by the Standards Development Organizations - SDOs) & identify the most beneficial areas for convergence (or harmonization) of codes

  - examine potential paths for reconciliation of the code differences

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- ***Schedule***

- 2008: ***Initial Code Comparison Work (Phase 1; Class 1 - Vessels)***
SDOs presented their work progress on October 2008

- 2009/2010: ***Continue comparison work / Identification of differences/ Examination of potential convergence/Harmonization &***
Initiate Phase 2 (Class 1 – piping, pumps, and valves)

- Beyond 2010: ***The MDEP Program extended from a 2 yrs programme to a long-term programme that focuses on interim results.***
The 5- year planning period may be used

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- **CODE Effective Dates**

The specific pressure boundary codes and standards to be utilised in the comparisons by the SDOs are:

- ASME B&PV Code, 2007;
- AFCEN RCC-M, 2007;
- JSME S NC I, 2008; and
- KEA KEPIC, 2007.

- Incorporation of the Russian Norms and Rules and the Canadian Codes comparisons will also be initiated as soon as feasible

Codes Comparison Work Plan - 1

- **SDOs Plan for 2008-2009/2010:**

The SDOs started the comparison between the design codes by:

- Developing of a spreadsheet to compare the requirements of the codes
- Evaluating significant differences in technical and administrative requirements – (Recently the SDOs decided not to perform this activity)
- Comparing other codes against ASME Code starting with Class 1 vessels, addressing: scope, classification, responsibilities, material, design, fabrication, examination, pressure testing, overpressure protection, and administrative requirements – Phase 1
- Start Phase 2 comparison work for class 1 piping, pumps and valves

Codes Comparison Work Plan - 2

- **CSWG Plan for 2008-2009:**

The WG will review the SDOs code comparison results and:

- Provide an assessment of the identified differences (through correspondence and joint meetings between the CSWG and the SDOs).
  (Based on the recent SDOs decision not to evaluate the significance, the CSWG will discuss the impact on the schedule during the WG next meeting, November 2009)
- Documenting the findings, into a retrievable database (within the MDEP-Library)
- Providing recommendations for the most beneficial areas for convergence (harmonization) of codes and reconciliation of code differences

Codes Comparison Work Plan - 3

- **CSWG Plan for 2009-2010:**

The specific actions to be completed based on the SDOs progress:

- Further developing the code comparison table by the SDOs to include Class 1: piping, valves, and pumps; (It is expected to start before the end of 2009)
- Continuation of discussions on potential areas of code Harmonization
- Include the comparisons of the Russian Norms and rules and the Canadian Codes
- Developing of harmonization approach(*) for pressure boundary design codes
- Developing of a process to communicate and interact with the SDOs on their respective future new code requirements, to enhance harmonization

The plan will be adjusted based on the results by end of 2009

(*) Discussion on harmonization started during the CSWG July 2009 meeting

Status/Achievement of Codes Comparison

- **Status of Phase 1 Comparison, Class 1-Vessels, against ASME Code requirements, as of July 2009**

- Korea (KEPIC) Code

  Korea completed Phase 1 of the Code-comparison activity, October 2008. The technical requirements of the KEPIC and the ASME Codes are identical

- Japan (JSME) Code

  A comparison of the rules on material, design, fabrication, examination, testing, and over pressure protection of Class 1 Vessel in JSME and ASME codes is completed. Design and construction requirements are almost identical. Differences were identified

- France (RCCM) Code

  The comparison between rules on design, material, fabrication, welding, NDE, hydro test, over pressure protection in RCCM and ASME was completed in the scope of Class 1 components. Differences were identified. (full comparison , August 26, 2009)

Conclusions

1. The result from the SDOs code comparison to-date showed differences exist in the Class 1 vessels design requirements

2. As such, code conversion is NOT Possible.

3. Harmonization of the technical requirements of design codes and standards is feasible.

4. Not all technical requirements can be harmonized.

5. Model for harmonization has been recently initiated by the CSWG, will be further discussed in next working group meetings.

Thank You

Q & A