

November 23, 2010

MEMORANDUM TO: Michael R. Johnson, Director
Office of New Reactors

FROM: David Terao, Chief */RA/*
Component, Integrity, Performance, and Testing Branch 1
Division of Engineering
Office of New Reactors

SUBJECT: REPORT OF FOREIGN TRAVEL TO VANCOUVER FOR AMERICAN
SOCIETY OF MECHANICAL ENGINEERS BOILER CODE
MEETINGS

Enclosed is a summary trip report of the Office of New Reactor's (NRO's) participation in meetings related to the voluntary consensus standards development activities for the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (BPV) Code in Vancouver, British Columbia, Canada from October 30 – November 4, 2010. The purpose of attending the ASME Code meetings was to participate in the development of new rules and revisions to existing rules for the ASME BPV Code. The trip report also includes a summary of a meeting between the ASME and other international Standards Development Organizations (SDOs). The purpose of this meeting was to discuss the status of the SDO's code-comparison project being performed in conjunction with the Multi-national Design Evaluation Program's (MDEP's) Codes and Standards Working Group activities.

The meeting was held during the ASME Boiler Code Week at the Westin Bayshore hotel in Vancouver. The SDO/MDEP meeting was attended by SDO representatives from the United States (U.S.) ASME, Japan (JSME), France (AFCEN), Canada (CSA) and Russia (ENES/NIKIET). Also attending were MDEP representatives from the Canadian Nuclear Safety Commission and the U.S. Nuclear Regulatory Commission.

This report serves as a combined trip report for all NRO travelers to Vancouver, Canada. Because of their interest in MDEP activities, this report may be of interest to the Commission.

Enclosures: As stated

cc: M. Virgilio, DEDR

CONTACT: David Terao, NRO/DE
(301) 415-3317

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ADAMS Accession Number: ML102460087 (pkg) NRO-002

OFFICE	NRO/DE/CIB1	NRO/DE
NAME	DTerao:TYB	TBergman
DATE	11/22/2010	11/23/2010

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FOREIGN TRIP REPORT

Travelers, Office, Division, Phone Number:

David Terao, NRO/DE, 301-415-3317
John Honcharik, NRO/DE, 301-415-1157
Eric Reichelt, NRO/DE, 301-415-7632
Robert Davis, NRO/DE, 301-415-4028
Kerri Kavanagh, NRO/DCIP, 301-415-3743
Richard McIntyre, NRO/DCIP, 301-415-3215
Cheng-Ih Wu, NRO/DE, 301-415-2764
Kaihwa Hsu, NRO/DE, 301-415-4088

Subject

Participate in meetings of the American Society of Mechanical Engineers (ASME) and other meetings with international standards development organizations (SDOs) on the MDEP Code-comparison project.

Dates of Travel, Countries and Organizations Visited

October 30 – November 4, 2010; Vancouver, British Columbia, Canada

Desired Outcome:

From October 30 to November 4, 2010, the Nuclear Regulatory Commission staff from the Office of New Reactors (NRO) participated in meetings related to the voluntary consensus standards development activities for the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code in Vancouver, British Columbia, Canada. The purpose of attending the ASME Code meetings was to participate in the development of new rules and revisions to existing rules for the ASME BPV Code. Endorsing consensus standards benefits the agency in several ways including eliminating the effort and cost that would be needed to develop Government-unique requirements such as rules for designing and inspecting nuclear power plant components. The trip report also includes a summary of a meeting between the ASME and other international Standards Development Organizations (SDOs). The purpose of this meeting was to discuss the status of the SDO's code-comparison project being performed in conjunction with the Multi-national Design Evaluation Program's (MDEP's) Codes and Standards Working Group activities.

The ASME and SDO meetings were held during the ASME Boiler Code week at the Westin Bayshore hotel in Vancouver, Canada.

Results Achieved:

Several separate meetings were held with industry representatives to obtain additional information on industry activities related to ASME Code actions. Notable committee actions included the development of Code provisions in response to NRC staff requests for Section XI to consider addressing: degradation of buried piping, and pressure boundary leakage outside of scheduled Code examinations. A summary of the committee meetings that the NRO staff attended is provided below.

Enclosure

Summary of Trip:

Standards Development Organizations Code-Comparison Project Meeting

Attended and Reported by: David Terao, NRO

On October 31, 2010, the SDO representatives from Japan, France, Canada, Russia and the U.S. met in Vancouver, British Columbia, Canada in conjunction with the ASME Boiler Code Week to discuss the status of their efforts on the Code-comparison project. This meeting summary provides the highlights of the meeting that is relevant to the MDEP/CSWG.

Before starting the presentations on the SDOs' status of the Code-comparison project, the SDOs discussed some concerns and issues in preparing the draft Code-comparison report. The SDOs noted that the Code is far more than a technical requirements document and contains many administrative requirements that are established at the national level (e.g., quality assurance). Also, there are many philosophical differences between various countries' regulatory requirements that determined how the Code was to be developed. Because of these significant differences, the SDOs are having difficulty in agreeing on the scope and purpose of the Code comparison since it was unclear how the Code-comparison would be used. Some SDOs expressed their opinion that the line-by-line comparison did not provide any useful information. Others stated that the major differences cannot be resolved by the SDOs (e.g., quality assurance and other general requirements). The SDOs agreed to address how quality assurance is addressed by each country and discuss it in a specific section in each SDO's Code-comparison report.

Status of Code-Comparison Project by SDOs

Canada: The effort to compare the CSA Standard N285.0 to the ASME Code, Section III has resumed after the work was stopped in May 2010 due to the reorganization and disbanding of parts of AECL. The Code-comparison activity is now being performed by the same individual (Charles MacDonald), but is being performed under a different organization (ANRIC) who has sub-contracted the effort to Mr. MacDonald. Mr. MacDonald discussed the history of the Code-comparison for CSA, results to date of the comparison, and the current plans and schedule for completing the effort. The CSA N285A Technical Committee will discuss the updated status of the N285.0 Code-comparison activity at its next meeting on November 11, 2010. The final endorsement by CSA is not expected until June 15, 2011. In the meantime, Mr. MacDonald will provide the draft N285.0 draft comparison results and report to the ASME for its review in March 2011.

Russia: The ENES/NIKIET representative presented the status of the comparison of the PNAE G-7 Code with the ASME Code, Section III. ENES/NIKIET discussed its comparison strategy; the organization of the PNAE G-7 Code; requirements for materials, design, and fabrication; and the results of the comparison to date. The overall results of the Code-comparison identified a significant number of differences in material, design, fabrication, and overpressure protection requirements.

Japan: The Code-comparison report for comparing the requirements in JSME S-NC1 for Class 1 vessels is complete. JSME also completed its Class 1 report for piping, pumps and valves, but did not present it at this meeting. JSME will update its Class 1 vessel report to include Class 1 piping, pumps and valves. JSME will provide the updated report to ASME by January 2011.

France: The ASME explained that each SDO is responsible for preparing the Code-comparison tables, but ASME Standards Technology LLC is responsible for preparing the report for ASME with input from each SDO including ASME. Westinghouse prepared the draft report comparing the RCC-M results with the ASME Code, Section III requirements after meetings with AFCEN in France. Westinghouse explained how they prepared the draft report and AFCEN provided feedback at this meeting. AFCEN expressed dissatisfaction about the draft Code-comparison report prepared by Westinghouse and believes the report does not accurately reflect AFCEN's Code-comparison results. AFCEN noted that there were many statements in the draft report with which he did not agree, and it would take much effort to correct the report.

Consequently, the AFCEN representative stated that although the AFCEN report may be distributed to the MDEP/CSWG for discussion, it should not be put into the MDEP library at this time. The AFCEN and Westinghouse plan to meet in France in the next few weeks to reconcile the concerns of AFCEN.

Content and Format of SDO Report

The ASME presented the overall format and content of the final Code-comparison report. The report will include a section for each country that describes the results of the Code-comparisons for material, design, fabrication, examination, testing, and overpressure protection. The first part of the report will discuss the background and historical perspective of each country's Code. The SDOs also proposed to add a section on "Regulations," that would discuss how each country's regulations addresses use of codes and standards. The SDOs did not feel comfortable writing such a section asked by the MDEP/CSWG representatives in attendance of their views. It was decided that the MDEP/CSWG will discuss this question at its next meeting on November 16-18, 2010, in Paris, in order to determine whether such a section should be included in the report or written as a separate document and whether the CSWG will commit to writing such a section or document.

The next SDO meeting will be held in conjunction with ASME Boiler Code Week in Seattle, Washington on January 30, 2011.

Task Group on Part 52 (Monday, November 1, 2010)

Attended by: John Honcharik NRO, David Terao, NRO

Reported by: David Terao, NRO

The Task Group (TG) discussed the status of the proposed Code case that was prepared by the TG specifically for Watts Bar, Unit 2, but could also be applicable to new reactors licensed under Part 52. The Code case is critically needed for Watts Bar, Unit 2 because repairs have been made under Section III (as committed by TVA to be consistent with the licensing basis for Watts Bar, Unit 1), but the ANI at Unit 2 will not sign the N-5 Data Reports without an approved clarification from the ASME Code on how repairs may be completed under Section III. Although the ASME Code allows repairs to be made under both Sections III and XI, the Code is unclear how repairs are to be made under Section III. As a result, the Code case would clarify how Section III should be revised and supplemented to allow repairs of components in plants under construction to be made under Section III. The proposed Code case was originally developed as a single Code case, but has evolved into two separate cases: (1) for repairs to stamped components under Section III by organizations that are not the original manufacturer (Action 10-858) and (2) repairs to stamped components under Section III by the original manufacturer (Actions 10-1335 and 10-1336).

The TG discussed the negative votes received and how they have been addressed. Most of the negative votes have been addressed, but the remaining concerns involve more of a philosophical difference of opinion than a technical or procedural issue (e.g., the commenter erroneously believes the jurisdiction of Section III ends after a component is stamped and, consequently, the Code case extends the jurisdiction of Section III into that of Section XI, and such a change in scope of Section III needs to be approved by the Board of Nuclear Codes and Standards). The plan is to move the revised Code cases through the appropriate Code groups over the next few days for reconsideration.

The TG discussed the feasibility of and the strategy for developing a separate Section III Code case that would describe how repairs can be made to stamped components under Section XI for plants under construction. The need for such a Code case might be necessary if a repair is needed after the N-3 Data Report form is signed but before fuel load, i.e., before the Commission makes its finding under 10 CFR 52.103(g). The TG decided to explore this option further at its next meeting in February 2011.

Special Working Group For New Advanced Light Water Cooled Reactor Construction Issues (Tuesday, November 2, 2010)

Attended by: John Honcharik, NRO; David Terao, NRO

Reported by: John Honcharik, NRO

The purpose and charter of the newly formed special working group (SWG) with the benefits of solving immediate issues not addressed in the ASME Code were discussed during the meeting. This SWG will review relevant information from new advanced light water cooled reactor plant designers, fabricators, installers, utilities and regulatory agencies worldwide to identify actions for ASME Code changes to address new design, construction and licensing issues that are emerging and/or urgent. The membership on this SWG was also discussed, and envisions a broad range of personnel currently active in the design, construction and licensing of advanced light water cooled reactors. John Honcharik (NRO) will submit the necessary documentation to become a member representing the NRC on this SWG, which will interface with the subgroup on Industry Experience for New Plants, which John Honcharik also attends. Some current construction issues that were discussed included the use of digital radiography, new designs introducing new welds not currently categorized in the ASME Code, and modular construction issues.

Subgroup on Industry Experience for New Plants (BPV III/XI) (Monday, November 1, 2010)

Attended by: John Honcharik, NRO; David Terao, NRO

Reported by: John Honcharik, NRO

The subgroup (SG) met to discuss operating experience issues and how they apply to new reactors. In addition, the SG reviewed the status of the previous Code cases sent to various Section III and Section XI Working Groups for action. These Code cases dealt with various issues from the allowance of embedded flaws in new construction, the accessibility for inservice inspection and the proper condition of weld surfaces for inspections. In addition, the status of Code case (Item Number 10-005) was discussed regarding when a new plant can develop and implement risk-informed inservice inspections. The NRC noted that NRC SECY Paper 10-021, which was forwarded to the NRC Commission on September 14, 2010, may supplement the quantitative risk criteria for new plants to ensure that a significant decrease in the level of safety would not result. This information would be forwarded to the appropriate working group for this Code case. In addition, the NRC presentation to the SG discussed the new reactor licensing status and other related NRC activities, such as the status of the proposed rule incorporating by

reference the 2005 Addenda through the 2008 Addenda of Section III and Section XI of the ASME Code, NRC Information Notices, etc., that may have some implications on new reactors. No other new industry issues were presented.

Task Group on Plastic Pipe, Section IX

Attended and Reported by: Eric Reichelt, NRO

The NRO staff participated in the Task Group on Plastic Pipe Section IX. During these meetings the staff presented the NRC position on Code Case N-755 "Use of Polyethylene (PE) Plastic Pipe Section III, Division I and Section XI." In addition, the NRC staff continued to work with the members to develop requirements for fusing polyethylene pipe. This includes incorporating essential variables destructive, nondestructive testing for the qualification for fusion of polyethylene piping. The Task Group plans to provide an update to the Subcommittee on Welding Section IX related to the developments in the February meetings in Seattle Washington.

The CIB 1 staff participated in the Section XI Repair Replacement Activities and discussions for the repair and mitigation of stress corrosion cracking in pressurized water reactors, the discussions focused on finalizing the rules for full structural weld overlays, developing the rules for an optimized weld overlay (an overlay whose thickness is less than the thickness of a full structural weld overlay), and developing the rules for applying a weld inlay and cladding on materials susceptible to cracking. The most significant outstanding issue for the overlays is the extent to which the design criteria are specified in the rules. Many issues were discussed with respect to repair and mitigation of stress corrosion cracking using inlays and cladding. The outstanding technical issues include the corrosion resistance of the as-deposited weld metal, the ability to reliably examine the resulting weldment, and the design rules for the inlay/cladding.

The above activities are beneficial to the NRC since (a) it exposes the NRC staff to new technologies that the industry may implement in the field, and (b) it permits the NRC staff to provide its insights on what may result in acceptable rules.

Qualifications for Authorized Inspection (QAI) Subcommittee on Accreditation (closed)

Attended and Reported by: Richard McIntyre, NRO; Kerri Kavanagh, NRO

Members of NRO staff attended the November 1, 2010, meeting of the QAI Subcommittee on Accreditation. The SC discussed the ASME team report for new issuance of an authorized inspection agency (AIA) certificate of accreditation for the Peoples Republic of China, China Special Equipment and Research Institute (CSEI), ASME Inspection Division. The ballot did not pass first consideration due to confusion as to whether CSEI is recognized by the Chinese government as required by QAI-1-2010 or whether CSEI is a jurisdiction providing third party inspection services. In either case, the SC did not believe CSEI does not meet the requirements of QAI-1-2010 as currently described in the team report. A second consideration ballot will be issued.

Committee on Nuclear Certification (CNC) (closed)

Attended and Reported by: Richard McIntyre, NRO; Kerri Kavanagh, NRO

Members of NRO staff attended the November 1, 2010, meeting of CNC. CNC reviewed certification ballots, administrative ballots, ASME nuclear survey team reports and all other

applications requiring CNC consideration. CNC members vote on approximately 50 nuclear (N type) and quality system (QSC) certification ballots between meetings of CNC. Ballots that are not approved are discussed along with any certificate hearings that are conducted during the CNC meetings. There were no hearings held during the November meeting of CNC.

QAI Standards Committee

Attended and Reported by: Richard McIntyre, NRO; Kerri Kavanagh, NRO

Members of NRO staff attended the November 1, 2010, meeting of the QAI Standards Committee. The Standards Committee formed a task group (TG) to develop additional changes to the administrative procedures for implementation of revisions on expansion of AIA eligibility beyond jurisdictions and insurance companies. AIA eligibility was recently expanded to include independent third party inspection agencies. Other committee procedures were also approved to support changes made to QAI-1-2010.

Special TG NCA Reorganization (General Requirements for Division 1 and Division 2 Rules for Construction of Nuclear Facility Components)

Attended and Reported by: Richard McIntyre, NRO; Kerri Kavanagh, NRO

Members of NRO staff attended the November 2, 2010, meeting of the Special TG NCA Reorganization. The TG has been tasked to consolidate all general requirements into one book with a section applicable to all Divisions (i.e., 1, 2, 3, etc.) and a separate section for each Division that identifies unique exceptions or additions for those Divisions. The TG is completing a matrix identifying all the general requirements for Divisions 1, 2, and 3 which will be a starting point for the TG meeting in February 2011. The NRO staff is responsible for the reorganization of NCA 3200 and 4000.

Board of Conformity Assessment

Attended and Reported by: Richard McIntyre, NRO; Kerri Kavanagh, NRO

Members of NRO staff attended a special meeting of the Board of Conformity Assessment (BCA) on November 2, 2010. During the meeting, the ASME staff presented a proposal to revise the management of the approval process for ASME conformity assessment programs. CNC reports to BCA and would be affected by the proposal. Specifically, the ASME staff is proposing to provide each Committee with an opportunity to have access to the reports and the ability to submit comments during the review and comment period. A Report Review Group(s) is to be established to evaluate the reports & volunteers' comments. The Report Review Group(s) is to meet (in-person and/or by telephone conference) on a weekly basis for two hours and take a voted action on the Team recommendation. The Report Review Group should meet no later than 3 days from the close of the review and comment period. Since full attendance would not be required or necessary for the Group to act on the Team's recommendation, a minimum of two ASME staff members could replace the votes of an entire Committee. The NRO staff has concerns with the proposal due to the perceived removal of the consensus process. A ballot will be prepared for the members of BCA to consider the proposal.

Working Group Quality Assurance, Certification, and Stamping, and Working Group on Duties and Responsibilities

Attended and Reported by: Richard McIntyre, NRO; Kerri Kavanagh, NRO

Members of NRO staff attended the WG meetings on November 2, 2010. Both WGs support Subgroup General Requirements (SGGR), Section III, and are responsible for working on changes to NCA to be considered during the SGGR meeting. The WGs spent the majority of their meeting time working on responses to interpretation requests.

Subgroup General Requirements, Section III

Attended and Reported by: Richard McIntyre, NRO; Kerri Kavanagh, NRO

Members of NRO staff attended the November 3, 2010, meeting of SGGR. SGGR considered the actions brought forth from the WGs for consideration of BPV Committee on Construction of Nuclear Facility Components (III). A significant amount of time was utilized to discuss the proposed Code Case for Repair of N stamped components at facilities without a Section XI program in place. This was initiated by the TG on Part 52 specifically for Watts Bar, Unit 2 activities, however, it could also be applicable to new reactors licensed under Part 52.

SGGR also discussed the proposed reorganization of BPV Committee on Construction of Nuclear Facility Components (III) which will become effective prior to the next meeting in February 2011. As part of this re-organization, SGGR will become the Subcommittee on General Requirements, Section III, and the Subgroup will be renamed Subgroup on Duties & Responsibilities and will oversee general requirements for Section III Divisions (1, 2, 3, 4, and 5).

BPV Committee on Construction of Nuclear Facility Components (III)

Attended and Reported by: Richard McIntyre, NRO; Kerri Kavanagh, NRO

Members of NRO staff attended the November 4, 2010, meeting of Standard Committee III. NRO staff supported the NRC representative that is a member of the committee on issues that were brought forth from SGGR.

Subgroup Fatigue Strength Committee Meeting & Environmental Fatigue Expert Panel Task Group (BPV III)

Attended and Reported by: Robert Hsu, NRO

Members of NRO staff attended the November 2, 2010, meetings of the SG fatigue strength and environmental fatigue expert panel task group.

The SC discussed the ASME fatigue curve code case, strain rate code case, and Fen new code case N-792.

The Bettis laboratory presented piping thermal fatigue testing status/result. The test used thermal loading and cycling stresses were caused by step increasing and decreasing the water temperatures. The stresses were evaluated by using NB-3600 piping stress equation. For a 10 mm crack initiation, it required 2000 cycles and 17000 cycles for leaking failure. The stress cycle result was compared with ASME Code and NUREG/CR-6909. The testing is on-progress and will be presented in next meeting.

Question was raised for the NB-3600 piping stress equation to be used for environmental assisted fatigue analysis. The fatigue stress equation is a simplified stress result to represent whole pipe cross-section. However, the environmental assisted fatigue is for inside surface. The EAF evaluation may consider the inside surface piping stress only.

The expert panel discussed the new Fen code case N-792. The comment with regard to the temperature to be used for the modulus of elasticity and Fen calculation was considered by the committee member. N-792 will address this comment and issue in next meeting. The expert panel provided the status of the high energy line break (HELB) locations EPRI project. The current approach is using PRA to determine the criteria for selecting HELB locations.

The EAF sample problem benchmark among SIA, Westinghouse, and NRC is in progress. EDF engineer presented French fatigue approach and stated that French is not taking RG 1.207 at this moment. They will wait until all the current uncertainties resolved. For example, the fatigue life definition needs clarification using N25, 3mm, failure, etc.

NRC staff provided NRC/ANL activities/Plans on EAF update.

Subgroup on Strength of Weldments

Attended and Reported by: Robert Davis, NRO

On November 1, 2010, NRO staff attended the Sections II and IX, Subgroup on Strength of Weldments. This meeting summary provides the highlights of the meeting that is relevant to the design, construction and repair of nuclear power plant components.

The subgroup discussed chemical compositions limits for B9 weld filler material that are used to weld Grade 91 (CrMoV) components. Variations in chemical composition of B9 weld filler material can have a negative impact on the successful post weld heat treatment of welds due to its effect on the lower critical (A1) temperature. The subgroup also discussed ongoing research at The Ohio State University related to the A1 temperature of Grade 91 base material as a function of chemical composition. Grade 91 materials are not used in light water reactors but may be selected for use in high temperature gas reactor designs and are listed in ASME Code Section III, Subsection NH as an acceptable material for use in high temperature applications. The staff will continue to follow information, as it becomes available, regarding chemistry and PWHT requirements for Grade 91 material and B9 weld filler material to ensure that the above issues are addressed in any future high temperature gas reactor design reviews.

Subgroup on Materials Fabrication and Examination (MF&E)

Attended and Reported by: Robert Davis, NRO

On November 3, 2010, NRO staff attended the Section III, Subgroup on Materials, Fabrication and Examination (MF&E). This meeting summary provides the highlights of the meeting that is relevant to the design, fabrication, repair and examination of nuclear power plant components.

Item 10-1805: Proposed code case to allow the use of die forging materials fabricated to SB-247, UNS A96061, Class T-6 for the construction of components in accordance with ASME Code Section III, Division 1, Subsection NC (Class 2 components). This code case is needed to support the fabrication of the control rod drive (CRD) hydraulic control unit (HCU) accumulator piston for the ABWR. The Subgroup voted to approve the use of this material and proceed with the code case.

Item 10-1629: Proposed code to allow diffusion welding for the construction of micro channel heat exchangers in accordance with ASME Code Section III, Division 1. Micro channel heat exchangers are smaller and lighter than equivalent shell and tube heat exchangers. Heat exchangers made with this process can be fabricated from a variety of corrosion resistant materials and have the capability of being used at extreme temperatures up to 1650°F.

These heat exchangers may be used in high temperature gas reactor designs. Based on discussions with Subgroup members, the staff will vote to approve this item when it is placed on an upcoming Subgroup MF&E Ballot.

Item 10-1516: Proposed revision to Code Case N-60-5 to add modified Alloy 718 as an acceptable material for use in the fabrication of core support structures. Modified Alloy 718 has similar strength, greater ductility and improved resistance to stress corrosion cracking than Alloy X-750. Modified Alloy 718 has the same chemistry as standard SB-637 Alloy 718 but has a different solution heat treatment and precipitation hardening heat treatment. The subgroup will further discuss the above proposed changes to Code Case N-60-5 at the next meeting in Seattle, Washington.

Working Group on Piping Design (WGPD SGDIIII) Meeting

Attended and Reported by: Cheng-Ih Wu, NRO

On November 1, 2010, I participated in the meeting of ASME Section III Working Group on Piping Design chaired by Paul Hirschberg. The topics of interest discussed in the WGPD meeting are provided in the following.

WGPD-474, Environmental Fatigue Actions. The status was reported by Jack Cole. There was no progress reported for this item. Three Environmental Fatigue Code Cases including Fen method, ASME Fatigue Curves and the Flaw Tolerance Approach were included. The current NRC position is that (1) Fen method is acceptable based on the fact that it is consistent with NRC RG 1.207 and NUREG/CR-6909 method, (2) using ASME Fatigue Curves is unacceptable because the curves are considered non-conservative based on its 2/10 stress/cycles approach versus 2/12 factors used by RG 1.207, (3) The Flaw Tolerance approach assuming a CUF greater than 1 which is not acceptable in the design for the material usage limit.

WGPD-500, Making Appendix F Mandatory. Appendix F was written for Class 1, not for Class 2/3. NC/ND-3650 allows use of Appendix F, but no criteria are provided for Class 2/3. It should not allow limit load analysis. The revised appendix needs to use S for allowable instead of S_m for Class 2/3 piping. At the Vancouver WGPD meeting, Tim Adams presented a mark-up New Mandatory Appendix XX, which includes the limitation that plastic analysis is not permitted for Class 2/3 components and also provide requirements for Class 2/3 piping systems. This item is a on-going task making Appendix F to allow piping rules as an alternative to a mandatory Appendix XX for Class 1, 2 and 3 piping.

WGPD-503, Proposed Reducer Stress Indices. Mr. Joseph Catalano presented a proposal of alternative C2 and K2 stress indices for reducers in Class 1 piping. The proposed C2 and K2 were developed from the EPRI technical report TR-106416, 1997, test data and extensive finite element analyses performed on reducers. The proposed Code changes will be presented in the letter ballot.

Westinghouse has a Code Jurisdiction Inquiry in Attachment 11 of the agenda regarding Section III, Division 1, NE-1130 Boundaries of Jurisdiction between Class MC and Class 1 or 2 piping. Whether the weld between a Class MC vessel and Class 1 or Class 2 process piping be classified as a Class MC weld? After discussion, it was concluded that the weld at containment penetration should be considered part of containment weld.

Based on the comments during the review of WGPD-471, "Clarification of allowable pressure requirements in NX-3600." (Recor # 10-1653), a question was raised regarding the applicability

of Appendix XI for Class 1 piping. This is because the rules in Mandatory Appendix XI apply specifically to the design of bolted flange connections for Class 2 and 3 components and Class MC vessels. The question is – Are Appendix XI flanges acceptable for use in Class 1 piping systems? If not, the reference to Appendix XI in NB-3641.1 should be deleted. If Appendix XI flanges are acceptable for use in Class 1 components, the first sentence of Appendix XI should be revised. This new item needs to review additional references for consideration in proposal. A new item was discussed suggesting a change to NB-3656(b)(3) as stated follows: With respect to Level D for reversing dynamic loads not required to be combined with non-reversing the magnitude of Pd is controlled by 3656(b)(1) which limits it to Design Pressure so revise the definition of Pd in 3656(b)(3) to = Design Pressure. This will be considered by the WGPD members for discussion in the next meeting.

The Standardization & Testing Department has a new standard PTC 19.3 TW-2010 on Performance Test Code for Thermowell Design. This code incorporates theory in the areas of natural frequency, Strouhal frequency, in-line resonance and stress evaluation. WGPD should at least put a warning in NB-3643 for users that design thermalwell should avoid frequency due to flow induced vibration.

Working Group on Supports (WG Supports SGDIII) Meeting

Attended and Reported by: Cheng-Ih Wu, NRO

On November 2, 2010, I participated in the meeting of ASME Section III Working Group on Supports chaired by Paul Hirschberg. The topics of interest discussed in the WG Supports meeting are provided in the following.

NF-352 (10-217), Comparison of Snubber, Damper and Energy Absorber. This item was developed to create new definitions for snubber, damper & energy absorber in NCA-9200, and develop a new non-mandatory appendix. NCA-9200 was added new definitions for snubber, damper and energy absorber. At Vancouver meeting, this item was updated to address that the modal analysis is performed with damping per latest revision of RG 1.161 rather than using Appendix N. The function of Dampers and snubbers is changed to provide resistance to sudden movements which exceed a velocity threshold rather than acting like a rigid restraint as previously stated. I support the changes. WG Support passed unanimously for the changes.

NF-354, (09-1866), Revision of NRC Reg. Guide 1.124 Rev.2. This item is an on-going task performed by Mr. Tim Terryal to revise Section NF-3300 “Design Rules for Linear Type Supports” to incorporate any of the changes required based on the review of Regulatory Guide 1.124, “Service Limits and Loading Combinations for Class 1 Linear-Type Supports,” dated February 2007 Revision 2. As a result of his presentation, WGNF suggested a revision to include Design Rules for Plate and Shell Type Supports. Mr. Terryal is to update this item to incorporate Regulatory Guide 1.130, “Service Limits and Loading Combinations for Class 1 Plate-and-Shell-Type Component Supports,” into Section NF-3200 “Design Rules for Plate and Shell Type Supports,” for changes required based on his review. The update will be discussed in the next meeting.

Pending Actions/Planned Next Steps for NRC:

The staff will continue to participate in discussions with other ASME Code committee members, on the above issues, at the next ASME Boiler and Pressure Vessel Code meeting scheduled for January 31 through February 4, 2012, in Seattle, Washington.

Points for Commission Consideration/Items of Interest:

The Russian Federation is participating in a comparison of its PNAE G-7 Code with the U.S. ASME Boiler and Pressure Vessel Code, Section III. The results to date show significant differences in technical Code requirements. The significance of these differences has not yet been determined.

Attachments:

The meeting agenda and minutes (to be published by ASME in the next few months) can be made available upon request.