NATIONAL FIRE PROTECTION ASSOCIATION

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NFPA 85 Technical Committee on Heat Recovery Steam Generators

Pre-First Draft Meeting Minutes

Web/Teleconference
Sept 16, 2020

ATTENDANCE

Chair	Dwight G. Hyche	Swiss Re America Holding Corporation	I
Staff Liaison	Heath Dehn	NFPA	Staff
Principals	Jennifer A. Beckmann	Nooter Eriksen	M
	David E. Dexter	Dow Corning Corporation	U
	Fedja Drndarevic	Technical Standards and Safety Authority	E
	Joseph E. Fehr	Power Engineers, Inc.	SE
	Steven V. Graf	Emerson Automation Solutions	M
	David J. Hinshaw	Dynegy, Inc.	U
	David W. King	Electric Power Research Institute (EPRI)	R/T
	Randy J. Kleen	General Electric Company	M
	David Leeper	Burns & McDonnell	SE
	Mark S. Loomer	AECOM	SE
	Thomas Primke	Siemens Energy Inc.	M
	Alan R. Robertson		SE
	Jimmie J. Schexnayder	Entergy Corporation	U
	Elia Sung	Sargent & Lundy LLC	SE
Voting Alternates	Harrison B. Manning	Southern Company Services, Inc.	U
Alternates	Glen Wilson	Nooter Eriksen	M
	Michael R. Bischof	Emerson Automation Solutions	M
	Donald W. Bairley	General Electric	M
	Humberto Gonzalez	Siemens Energy Inc.	M
	Karen Whitehead	Black & Veatch Corporation	SE
Guest	Denise Beach (BCS-FUN Member)	FM Global	I

1. **Call to Order.** Dwight Hyche, Chair
   a. 11:05 am (ET)
2. **Approval of Second Draft Meeting Minutes from Jan 25, 2018.**
   a. Approved as written.
3. **Chairman's Remarks.**
   a. Welcome to new and existing TC members and guests
   b. Request to TC members to participate and contribute freely

4. Remaining Key Dates of NFPA 85 Revision Cycle.

Process Stage	Process Step	Dates for TC	Dates for TC with CC
Public Input Stage (First Draft)	Public Input Closing Date*	1/06/2021	1/06/2021
	Final Date for TC First Draft Meeting	6/16/2021	3/17/2021
	Posting of First Draft and TC Ballot	9/08/2021	6/09/2021
	Final date for Receipt of TC First Draft ballot	9/29/2021	6/30/2021
	Final date for Receipt of TC First Draft ballot - recirc	10/13/2021	7/07/2021
	Posting of First Draft for CC Meeting		7/21/2021
	Final date for CC First Draft Meeting		9/01/2021
	Posting of First Draft and CC Ballot		9/22/2021
	Final date for Receipt of CC First Draft ballot		10/13/2021
	Final date for Receipt of CC First Draft ballot - recirc		10/20/2021
	Post First Draft Report for Public Comment	10/27/2021	10/27/2021
Comment Stage (Second Draft)	Public Comment Closing Date*	1/05/2022	1/05/2022
	Notice Published on Consent Standards (Standards that received no Comments) Note: Date varies and determined via TC ballot.		
	Appeal Closing Date for Consent Standards (Standards that received no Comments)		
	Final date for TC Second Draft Meeting	6/29/2022	3/30/2022
	Posting of Second Draft and TC Ballot	8/24/2022	5/11/2022
	Final date for Receipt of TC Second Draft ballot	9/14/2022	6/01/2022
	Final date for receipt of TC Second Draft ballot - recirc	9/21/2022	6/08/2022
	Posting of Second Draft for CC Meeting		6/22/2022
	Final date for CC Second Draft Meeting		8/03/2022
	Posting of Second Draft for CC Ballot		8/24/2022
	Final date for Receipt of CC Second Draft ballot		9/14/2022
	Final date for Receipt of CC Second Draft ballot - recirc		9/21/2022
	Post Second Draft Report for NITMAM Review	10/05/2022	10/05/2022
Tech Session Preparation (& Issuance)	**Notice of Intent to Make a Motion (NITMAM) Closing Date**	11/02/2022	11/02/2022
	Posting of Certified Amending Motions (CAMs) and Consent Standards	12/14/2022	12/14/2022
	Appeal Closing Date for Consent Standards	12/29/2022	12/29/2022
	SC Issuance Date for Consent Standards	1/09/2023	1/09/2023
Tech Session	Association Meeting for Standards with CAMs		
Appeals and Issuance	Appeal Closing Date for Standards with CAMs		
	SC Issuance Date for Standards with CAMs		

5. Business.

a. Task Groups

- Appointment to an NFPA Task Group is open to all committee members and members of the public. If you are interested in becoming an active member in any of the following task groups please contact Yiu Lee at ylee@nfpa.org.

i. **NFPA 37 Coordination**

1. Scope – Communicate with the NFPA 37 Technical Committee to ensure that NFPA 85 requirements for combustion turbines are not in conflict with NFPA 37 requirements and are being referenced as appropriate within NFPA 37.
2. Members – David Hinshaw (chair), Randy Kleen, and Marc Lemmons

ii. **Combustion Turbine Normal Shutdown**
   1. Scope – Discuss the potential for adding additional qualifying language around what trips could be considered normal or safe for the purpose of purge credit.
   2. Members – Karen Whitehead (chair), Randy Kleen, Denise Beach, Alan Robertson, Martin Fry, David Hinshaw, and Thomas Primke
   3. The TG chair provided a status update various recommendations to be considered at the First Draft Meeting. (**Attachment A**)

iii. **Hydrogen Task Group**
   1. Scope – Provide feedback to the committee concerning the applicability of hydrogen use as a fuel and provide any recommended changes.
   2. Members – David Leeper (chair), Jennifer A. Beckmann, David E. Dexter, David W. King, Randy J. Kleen, Thomas Primke, Harrison B. Manning, Glen Wilson, Karen Whitehead, and Denise Beach
   3. During the committee discussion on the possibility of incorporating requirements for hydrogen as a fuel source, which led to the creation of this task group, they identified other resources such as NFPA 2, Hydrogen Technologies Code, and NFPA 55, Compressed Gases and Cryogenic Fluids Code. Also identified was that the NFPA 86, Standard for Ovens and Furnaces, technical committee has established a Task Group which is also looking to create requirements based around hydrogen.

6. **Other Business.**
   a. Public Inputs were reviewed and discussed with no action taken.

7. **Next Meeting.**
   a. The next committee meeting will be the First Draft meeting after the public input closing date.
8. **Adjourn.**
   a. The meeting was adjourned at 12:31 pm (ET).

Respectfully Submitted By:
Dwight Hyche – Technical Committee Chair
Heath Dehn – NFPA Staff

Attachment A

Proposed Language: 9/14/2020

8.8.4.6* Combustion Turbine Purge Credit for Gaseous Fuel Systems. Following a ~~normal~~ combustion turbine shutdown, ~~combustion turbine~~ purge credit shall be permitted to be established for the next start-up event provided that the following requirements are met for each combustion turbine and duct burner fuel system.

8.8.4.6.1 The HRSG/duct burner and combustion turbine systems' shutdown prior to establishing purge credit shall follow operating procedures prescribed by the manufacturer(s).

8.8.4.6.1.1* The combustion turbine shutdown process shall be operator-initiated or initiated by an interlock unrelated to the combustion control system that follows the lowering of load in accordance with the OEM practice.

8.8.4.6.1.1(A) Emergency or shutdowns that involve an immediate Sudden interruption of fuel shall not qualify for Purge Credit.

8.8.4.6.1.2 Purge credit shall be lost if the subsequent combustion turbine start-up is aborted by an interlock.

A.8.8.4.6.1.1* Purge credit can only be established when the shutdown process has not been initiated by interlocks resulting in sudden interruption of fuel to the turbine or HRSG, or the HRSG combustion system shutdown was initiated subsequent to a combustion turbine shutdown. A routine combustion turbine shutdown involves a gradual lowering of load in accordance with manufacturer's operating procedures. There are certain "soft" interlocks that can initiate a shutdown, but that shutdown essentially follows the same load-reduction curve as an operator-initiated shutdown. These "soft" interlocks include loss of cooling water, Battery System Low Voltage, AC generator winding temperature High, [others]

8.8.4.6.4* One of the following shall be used to establish purge credit:
(A)* Valve Proving Method(1) Where provided, duct burner normal shutdown shall be accomplished.
(2) Combustion turbine ~~normal~~ shutdown shall be accomplished in accordance with 8.8.4.6.1.
(6) Prior to each startup and following each ~~normal~~ shutdown…

8.8.4.7 Combustion Turbine Purge Credit for Liquid Fuel Systems. Following a ~~normal~~ shutdown in accordance with 8.8.4.6.1, combustion turbine purge credit…

Substantiation:

The definition of "combustion turbine normal shutdown" in Chapter 3 does not provide clear minimum safety requirements for conditions that enable purge credit to be established. Therefore, minimum safety requirements and annex text are added to Chapter 8 to better describe the conditions under

which a turbine/HRSG system can achieve combustion turbine purge credit. Combustion turbine purge credit must begin with a shutdown that follows a systematic lowering of load in response to operator initiation or an interlock unrelated to the combustion controls. The shutdown must follow the turbine manufacturers' operating procedures to ensure that the shutdown itself was accomplished in a safe manner, and all systems are in a safe state. If the combustion turbine shutdown is accomplished in accordance with these requirements, then there is a high degree of confidence that the combustion turbine and HRSG will remain in a safe state throughout the period where purge credit is maintained. Finally, purge credit must be lost if the subsequent startup is interrupted by an interlock related to the combustion control system because the actuation of an interlock indicates that the combustion turbine/HRSG system may no longer be in a safe state for startup without purge. Additional changes are proposed to make all terminology related to combustion turbine purge credit consistent with the new requirements in 8.8.4.6.1.