



23 December 1992

Mr. F. Stanonik
Gas Appliance Manufacturing Association
1901 North Moore Street, Suite 1100
ARLINGTON, VA 22209

Dear Mr. Stanonik:

Re: Draft Bi-National Standards for Gas Water Heaters and Pool Heaters

At its 21-22 September, 1992 meeting, the Z21/CGA Joint Water Heater Subcommittee unanimously agreed to request the Water Heater Division of the Gas Appliance Manufacturers Association (GAMA), to consider hiring a qualified consultants to draft harmonized ANSI/CGA standards covering gas-fired water heaters and pool heaters. The harmonized documents would be based on the relevant ANSI Z21 and CGA standards.

A working group was established at that meeting to evaluate the scope, format and framework of the project, prepare a work plan for the project, determine the need for consulting services, and provide assistance in directing the project. The working group comprising of Raymond Thurton, Chairman (CGA Standards Staff); Frank Myers (Lochinvar); Paul Beach (White-Rogers Div.); Robert Hamos (Teledyne Laars); Joseph Boros (GSW Water Products Co.); Horst Krause (Consumers Gas Co); and John Bartholomew (Columbia Gas) met on 15 December, 1993 at the offices of CGA in Toronto. The following directions were given:

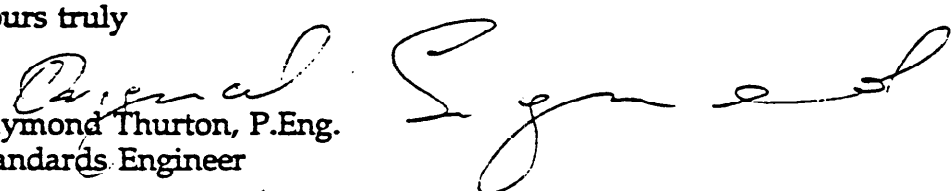
- One person be given the responsibility to develop all three draft harmonized standards because there are sufficient overlap in these standards. Members indicated that it is not possible for this group to complete this work in a timely fashion, consequently, recommended that a consultant be hired.
- Recommended that proposed new changes to the standards under consideration in this project be halted until the project is completed.
- Recommended that the standards be harmonized as three separate drafts, rather than as a single combined draft standard on gas water heaters and pool heaters.
- Use the draft harmonized ANSI/CGA Central Furnace Standard or the draft ANSI/CGA Clothes Dryer Standard as a guide in preparing the draft harmonized water heaters and pool heaters standards.
- Recommended that it participates in the selection process of the consultant, and it would like to liaise with the consultant.

- Suggested that it meet with the consultant when 25 per cent of the work on the first draft is completed, for review and offering guidance.

Please find enclosed a work statement prepared for your convenience by the working group.

If you have any questions on this matter please call me.

Yours truly


Raymond Thurton, P.Eng.
Standards Engineer

CC: Daryl Hosler
David Bixby
Al Callahan
Ken Bales

Working Group Members: F. Myers, P. Beach, R.Hamos, J.Boros, H. Krause,
D. Hupp

9212STAN.LTR

16 December, 1992

**WORK STATEMENT FOR
ANSI/CGA HARMONIZED STANDARDS DEVELOPMENT
FOR GAS WATER HEATERS AND POOL HEATERS**

Objective

Prepare three draft harmonized standards (U.S.A./Canada) for Gas Water Heaters with Inputs of 75,000 Btuh or Less, Gas Water Heaters with Inputs over 75,000 Btuh, and Gas Pool Heaters, in a format to facilitate easy committee review, and to serve as a new focal point for the Joint Subcommittee for future adoption for standards coverage for U.S.A. and Canada. The draft shall be provided on computer disc in Wordperfect 5.1.

Scope

The three drafts will consolidate the current coverage of

- CAN1-2.21-M85, Gas-Fired Appliances for Outdoor Installation
- CAN1-4.1-M85, Gas-fired Automatic Storage Type Water Heaters With Inputs Less Than 75,000 Btuh
- CAN1-4.3-M85, Circulating Tank Instantaneous and Large Automatic Storage Type Gas Water Heaters
- CAN1-4.7-M85, Swimming Pool Heaters
- ANSI Z21.10.1 1990, Gas-Fired Storage Water Heaters with Input Ratings of 75,000 Btuh or Less
- ANSI Z21.10.3 1990, Gas-Fired Storage Water Heaters with Input Ratings Above 75,000 Btuh, Circulating, and Instantaneous Water Heaters
- ANSI Z21.56-1989, Gas-Fired Pool Heaters

The drafts will also reflect common harmonization issues as have been resolved through other ANSI Z21 Committee, ANSI Z83 Committee, CGA Appliance Steering Committee, and the ANSI/CGA Standards Joint Water Heater Subcommittee; such as that covered by the Central Furnace Draft harmonized Standard. The work shall include consideration of the following Mexican standards as reference:

- Q-28/1-1987 Instantaneous Water Heaters for Domestic Use - L.P. or Natural Gas (Mexico)
- Q-28/2-1981 L.P. or Natural Gas - Instantaneous Water Heaters - Operation Temperature - Test Method (Mexico)
- L.P. or Natural Gas - Instantaneous Water Heaters - Thermal Effectiveness - Testing Method (Mexico)

This consideration shall not require a comparison of the Mexican standards requirements, but suggestions and recommendations to facilitate Mexican adoption. Consideration shall be given to the requirements contained in the CAN/CGA-2.17-M91, Gas-Fired Appliances For Use at High Altitudes. A similar approach to that of the Draft harmonized Central Furnace standards shall

be taken on the high altitude requirements of these drafts. The requirements on Outdoor Installation in the ANSI standards shall be compared with that of the CAN1-2.21-M85. Requirements for Recreational Vehicles and Mobile Homes shall be consistent with that of the harmonized Central Furnace Standard.

With regards to the comparison the following pairs of standards shall be considered for each draft harmonized standard:

- CAN1-4.1-M85 and ANSI Z21.10.1 1990
- CAN1-4.3-M85 and ANSI Z21.10.3 1990
- CAN1-4.7-M85 and ANSI Z21.56 1989

The Scope of each draft document shall provide the broadest coverage provided by each pair of standards being compared. Accordingly, it was suggested that the scope of the CAN1-4.3/ANSI Z21.10.3 not provide an upper Btuh limitation on its coverage to 400,000 Btuh; likewise for the CAN1-4.7/ANSI Z21.56.

Members suggested that provision be made to accommodate the Categorization of Pool Heaters and Water Heaters as given in the harmonized Central Furnace Standard, even though such categorization for both these appliances are under review. This provision may be in the form of a Reserved Section of each draft.

Information may be obtained by a task group of the joint Subcommittee on Water Heaters, whose purpose is to direct and provide background information for the preparation of these draft harmonized standards.

Deliverables

A draft harmonized standards shall be prepared, and for review purposes identify the source of each clause, and comparable clause(s) of the existing ANSI/CGA standards, whether the clause(s) are identical to, or differ from, the existing CGA or ANSI standards, and to what extent they differs. Support material shall be compiled wherever appropriate, and rationale statements shall be developed to facilitate adoption of the drafts. The final drafts shall be provided on computer disc in Wordperfect 5.1.

Cost Estimate

At this stage an estimate of charges to complete the above task should be submitted together with an estimate of the time required to deliver the completed assignment.

WKTHIR.HMN



INTERNATIONAL APPROVAL SERVICES

A JOINT VENTURE OF A.G.A. LABORATORIES AND CGA APPROVALS, INC.

8501 East Pleasant Valley Rd. • Cleveland, Ohio, U.S.A. 44131-5575 • Phone: (216) 524-4990 • Fax: (216) 642-3463

August 10, 1993

Mr. Al Callahan
 Administrative Secretary
 Z21 Accredited Standards Committee
 8501 E. Pleasant Valley Rd.
 Cleveland, Ohio 44131

Subject: Agenda Item for Z21 Water Heater Subcommittee, Reduced
 Inlet Pressure Combustion Test Clarification

Dear Mr. Callahan:

The Laboratories is requesting that the Z21 Water Heater Subcommittee revise the water heater standards, ANSI Z21.10.1 and Z21.10.3, to clarify provision 2.4.1 regarding combustion testing at reduced inlet pressure. The current wording of 2.4.1 implies that the appliance pressure regulator remains at the increased setting while the inlet pressure to the appliance is reduced. Leaving the appliance pressure regulator set at the increased input rate setting does not simulate normal field operation.

We believe the following proposed wording would help clarify 2.4.1. The last sentence of the fourth paragraph of the "Method of Test" would be modified as shown below:

~~The second sample shall be secured with the appliance operating at the reduced inlet test pressure after an additional 5 minutes of operation at that pressure. The outlet pressure of the appliance regulator shall then be returned to it's normal setting to provide the manufacturer's specified input rate. The gas supply pressure to the appliance shall be adjusted to the reduced inlet pressure shown in Table X. After 5 minutes of operation at this pressure, a second sample of flue gases shall be secured at a point immediately preceding their discharge from the flue outlet of the appliance.~~

Thank you for your attention to this matter.

Sincerely,

S. Grieco

S. P. Grieco
 Vice President
 U.S. Operations

(b) CHANGED 3/13/95
 No More Modified
 Comments Processed

Chin -

ITEM 2.
Z21/CGA Joint Water Heater
Subcommittee Meeting,
September 23-24, 1993

STATUS REPORT ON HARMONIZATION OF Z21/Z83 AND CGA STANDARDS

Action Requested

Review for information an updated report on harmonization. It addresses:

- The Z21/CGA harmonization efforts since the Z21 Committee's April 1992 meeting, including a status report on the harmonization of Z21/Z83 standards with their comparable Canadian standards; and
- A status report on the U.S./Canada/Mexican Standards Harmonization efforts.

Background

Background 1. Report on Z21/CGA Harmonization Efforts

Z21 Chairman's Advisory Committee Actions:

An update report on harmonization efforts, similar to this agenda item, was presented to the Z21 Chairman's Advisory Committee (CAC) for consideration at its April 7, 1993 meeting. The CAC accepted the report as information.

In addition, the Z21 CAC was informed that under letter dated January 28, 1993, the CGA Standards Steering Committee had approved the appointment of a Z21 Committee representative on the Steering Committee.

CGA Standards Steering Committee on Gas Burning Appliances and Related Accessories:

At its April 15, 1992 meeting, the CGA Standards Steering Committee No.1 approved, with modifications, the proposed harmonized fourth draft of the standard for gas-fired central furnaces, Z21.47 - CAN/CGA 2.3, for submittal to the InterProvincial Gas Advisory Council (IGAC) for approval. The modifications included additions to Exhibit M (Items Unique to One Country) of the proposed harmonized standard to provide clarification and to correlate with specifications required in Canada under other standards.

(2-1) Furnace Std Harmonized in mail "final" 5-6 year process completed.
Z21.47 can/2-3

CLEARED 3/13/95
 No MP's to be filed
 Comments Processed

In addition to the above, several issues regarding the harmonized central furnace standard and general issues pertaining to all gas appliance standards were discussed. The Steering Committee requested that these issues be presented to all Z21/Z83/CGA joint subcommittees for consideration during harmonization efforts. Canadian Gas Association Memorandums, dated July 17 and July 20, 1992 were subsequently received from Mr. Kenneth Bales, which respectively outlined the issues to be discussed by the various joint subcommittees and the joint central furnace subcommittee. The July 17, 1992 memorandum is presently being presented to the applicable joint subcommittees for consideration. The July 20, 1992 memorandum, which pertained to the harmonized central furnace standard was considered by the Z21/CGA joint central furnace subcommittee at its February 2-3, 1993 meeting.

The scope of the above CGA Standards Steering Committee was also revised; in addition to having responsibility over domestic equipment, it now has jurisdiction over industrial and commercial equipment standards.

Another meeting of the Canadian Gas Association (CGA) Standards Steering Committee was scheduled for May 6-7, 1993.

Z21 Committee Actions:

Under a June 16, 1992 letter ballot, the Committee approved, for submittal to the American National Standards Institute (ANSI), additional modifications to the proposed harmonized central furnace standard, as adopted by the CGA Standards Steering Committee No.1 at its April 1992 meeting.

At its April 8, 1993 meeting the Committee was informed that the proposed harmonized gas-fired central furnace standard, Z21.47/CGA 2.3, has recently been approved by the Standards Advisory Committee (SAC) and Standards Council of Canada (SCC). Subsequently, the proposed Z21.47/CGA 2.3 central furnace standard was also approved by ANSI on May 26, 1993.

Harmonization Meeting

A meeting of the secretariat staffs of the American Gas Association Laboratories (AGAL) and Canadian Gas Association (CGA) was held on January 12-14, 1993 at the AGAL in Cleveland. The purpose of this and such future meetings will be to develop and coordinate consistent secretarial services to the joint subcommittees.

Subcommittee Activities

Attached (Attachments I and II) is an update on the harmonization of various Z21 and Z83 standards with the applicable Canadian standards.

Background 2. U.S./Canada/Mexico Conference

The American National Standards Institute (ANSI), the Standards Council of Canada and CANACINTRA (chamber of manufacturer interests in Mexico) have been jointly sponsoring a trilateral conference between the United States, Canada and Mexico.

As reported at the subcommittee's September 1992 meeting, the goals of the conferences have been to assure continued and appropriate expanded standards and conformity assessment relationships between Mexico, Canada and the United States. This would involve promoting the harmonization of Mexican, Canadian and U.S. standards, as appropriate. It is believed that the resultant contributions of standards and conformity assessment will strengthen National economies. "Gas Sector" interests met during the first and second conferences and have since held separate discussions on July 8-12, 1992, in Mexico City, to expedite discussions and focus available time on issues specific to the gas industry.

The July 1992 meetings were well attended by (1) Mexican representatives of the LP gas equipment industry, and (2) Mexican water heater and thermostat control manufacturers. Meetings have been divided into these two group activities. Agreement has been reached to continue standards harmonization discussions addressing separately, LP-gas cylinders and water heater/thermostat standards.

Three Mexican representatives manufacturing water heater thermostat controls participated in the September 23-24, 1992 meeting of the Z21/CGA joint thermostat and automatic ignition systems subcommittee, and observed the procedures and activities of the joint subcommittee. One Mexican representative also attended the September 1992 outdoor gas grill subcommittee meeting. A Mexican representative for water heater interests was unable to attend the water heater subcommittee's September 21-22, 1992 meeting.

The LP-gas cylinder group met on September 29, 1992 in Dallas, Texas, to discuss the harmonization of LP-gas cylinder and cylinder valve standards. This resulted in forming two applicable subcommittees to begin developing applicable North American standards.

A third trilateral conference was held on March 23-25, 1993 in Mexico City, Mexico.

Background 3. Highlighted Standards Activities

Summit Meeting

Various issues remain outstanding to accomplishing complete harmonization. These issues were identified during harmonization of the central furnace standard, in addition to other standards currently being harmonized. Such issues include common electrical coverage, appliances with input ratings less than, or greater than 400,000 Btu per hour, duplicate "Z"/CGA/UL/IEC standards, U.S./Canada Code harmonization, etc. The Gas Appliance Manufacturers Association (GAMA) has undertaken the lead role in coordinating a summit of those organizations involved in standards development including A.G.A., CGA, UL, IGAC, GAMA and SCC. It is anticipated that a date for such a summit will be determined in the near future.

STATUS OF HARMONIZATION OF
Z21 AND CGA STANDARDS

Subcommittee	Standards	Status	Meeting Date	Remarks
Auto Valves Press. Regs. & Combination Controls	Z21.18/CGA 6.3 Z21.21/CGA 6.5 Z21.78	comp docs. for AV & PR stds (see "Remarks") comb control std. adopted in Canada for R&C, as a harm doc.	8/21/91 4/22/92	review of Z21.21 c tabled until next First jt subc meet of GAMA to provide of Z21.18/CGA 6.3 6.5 in conjunction comments rec'd on combination contro Current efforts in combine CGA 3.9 (A shutoff valves) & (Auto. Valves for Once completed jt. reevaluate harm. o CGA 6.5. At prese valves do not fall scope of jt. subc.
Automatic Vent Dampers	Z21.66 CAN1-6.14 CAN1-2.28		12/16/92	Harm. std to be de Z21.66, CAN1-6.14 Requested appl. su respond to proposa deleting auto. ven coverage in appl. harm doc.

STATUS OF HARMONIZATION OF
Z21 AND CGA STANDARDS

Subcommittee	Standards	Status	Meeting Date	Remarks
Boilers	Z21.13/CGA 3.1, 3.3, 4.9		6/9-10/92 5/18-19/93	Jt. WG rec. GAMA consultant to dra: doc./Z21.13 scope for harm. draft st Jt. subc. to act recommendation
Clothes Dryers	Z21.5.1/CGA 7.1 Z21.5.2/CGA 7.2 /CGA 7.3 (Irons)	comp. doc. for Z21.5.1/CGA 7.1 to be develop by CGA under AHAM contract	12/2-3/92	First jt. subc. m Comparison doc. fo Z21.5.1/CGA 7.1 w and adopted for i review.
Connectors	Z21.24/CGA 6.10 Z21.45/CGA 8.3 Z21.69/CGA 6.16 Z21.2/CGA 8.1 Z21.54	Comparison documents to be developed by: Bob Stachowiak Daryl Hosler Rick Sekerchak	11/17/92	First jt. subc. m

STATUS OF HARMONIZATION OF
Z21 AND CGA STANDARDS

Subcommittee	Standards	Status	Meeting Date	Remarks
Conversion Burners	Z21.17/CGA 2.7 Z21.12/CGA 6.2 Z21.8		10-16-91	rec jt subc be fo rec to Z21 Comm t transf. to auto. (Z21 Comm. approv its 4/11/92 mtg.) only Z21.17 & CGA harm./no rec re.
	/CGA 3.4 (Indst. Conv. Burners)		10/21/92	harm of Z21.8 to at first jt subc Z21 Ch. Adv. Comm whether non-jt. s rec. std. to Z21 Steering Comm. fo long as requireme processing met in countries.
			12/15/92	unable to form jo to lack of Canadi participation. C of jt. subc. not undertaken. CGA w Steering Comm.

STATUS OF HARMONIZATION OF
Z21 AND CGA STANDARDS

Subcommittee	Standards	Status	Meeting Date	Remarks
Decorative Appliances	Z21.50/CGA 2.22 Z21.60/CGA 2.26	reports from 9 task group not yet complete	4/22/92	Task Groups status due July 1st; final due Sept. 1st.
		Comp. of vented gas fireplace stds. (Z21.50/CGA 2.22) compl.		Reviewed comp. doc Z21.50/CGA 2.22 as by task group. Final harm. std. to be at 10/92 mtg. Est 1992 date for harm. doc Committees.
		Comp. of Z21.60/CGA 2.26 completed by 10/92	10/27-28/92	Reviewed comp. doc Z21.60/CGA 2.26. Modifications to complete doc. sent before next mtg
			6/15-16/93	Revised title of Z21.50/CGA 2.22 std. to "Vented Gas Fireplaces. Proposed for R&C in 3/93. Reconsideration of proposed stds for Z21.50/CGA 2.22 and Z21.60/CGA 2.26 in 3/93. Comments rec'd

STATUS OF HARMONIZATION OF
Z21 AND CGA STANDARDS

Subcommittee	Standards	Status	Meeting Date	Remarks
Outdoor Cooking	Z21.58/CGA 1.6	First draft harm. doc. completed (based on a comp.doc.)	2/19-20/92 6/8-10/92 9/23-24/92 2/17-18/93	jt subc/est. wg to doc of Z21.58 & CGA Proposals specifying safety attributes : types cylinder con (e.g. 510 POL, QD rec. to Z21/CGA Con Jt. wg reviewed con Z21.58/CGA 1.6. 2nd. draft harm. s for R&C Reconsid. 2nd. dra 11/92 in light of Add. revs. to be c subc. by LB for R& Anticipate 3rd dra Committees by 9/93

STATUS OF HARMONIZATION OF
Z21 AND CGA STANDARDS

Subcommittee	Standards	Status	Meeting Date	Remarks
Ranges	Z21.1/CGA 1.1	CGA 1.1 updated to Z21.1; distr. for R&C in Canada on 2/28/91	8/13-14/91	Canadian represent. mtg. request for next mtg held in Canada
	Z21.57/CGA 1.16/UL 1075	RV comp doc pending preparation Z21.1/CGA 1.1 comp. doc. to be prepared by CGA under AHAM contract	6/3-4/92	Jt. subc. Comments proposed CGA 1.1 t AHAM & EWG for con in efforts to reac UPDATE: CGA has contract to do a comparison clothes dryers & r for rngs. to be co after the clothes are addressed.

STATUS OF HARMONIZATION OF
Z21 AND CGA STANDARDS

Subcommittee	Standards	Status	Meeting Date	Remarks
Therm/Ign	Z21.20/CGA 6.4 Z21.23/CGA 6.6 Z21.35/CGA 6.8 Z21.71 (Int. Ign.) Z21.77 (Piezo elec) Z21.79 (Draft sediment trap std.)		9/18-19/91 9/23-24/92	Electronic versions & Z21.23 to GAMA to comp docs. Comp do be prepared. Joint subc. agreed Z21.77 and Z21.79 to CGA for process Canadian stds. (No stds. in Canada.) Sed. trap std. to under Fall 92 LB: approv.;to ANSI PR on 3/1/93
Vented Heaters	Z21.11.1 CAN1-2.1 Z21.44 CAN1-2.19 Z21.48 Z21.49 CAN/CGA 2.5		8/12-13/92 6/9-10/93	w.g. est. to addre stds

STATUS OF HARMONIZATION OF
Z21 AND CGA STANDARDS

Subcommittee	Standards	Status	Meeting Date	Remarks
Water Heaters	Z21.10.1/CGA 4.1 Z21.10.3/CGA 4.2 Z21.56/CGA 4.7		11/13-14/91 6/9-10/92 9/21-22/92 12/15/92	Z21 W.H. subc rec. be transf. to boiler be part of a harm h GAMA efforts to dev of Z21.10.1 & CGA Z21 boil. subc. and joint w.g. agreed subc. not to trans jt. subc. requeste Div. to fund consu draft harm. docs. Jt. WG est. to eva format & struct. f docs. to provide a the above project jt. wg (est at 9/9 in Toronto. - reco & work statement f GAMA on 12/23/92

STATUS OF HARMONIZATION OF
Z83 AND CGA STANDARDS

Subcommittee	Standards	Status	Meeting Date	Remarks
Construction Htrs.	Z83.7/CGA 2.14 Draft Agricultural Htr. Standard	WG dev. comp. doc.	6/16-17/92 8/17-18/93	Wg est. to compare CGA 2.14

STATUS OF HARMONIZATION OF
Z83 AND CGA STANDARDS

Subcommittee	Standards	Status	Meeting Date	Remarks
Food Service Equipment	Z83.11/CGA 1.8** Z83.12/CGA 1.10+ Z83.13/CGA 1.9+ Z83.14/CGA 1.11+ Z83.15/CGA 1.15*	(*) harm'd drafts adopted for R&C (see remarks)	1/28-29/92	joint subc./Rec ha Z83 Comm/Several i electrical, biling review by wgs - to with Central Furna Z83.12/CGA 1.10 & 1.11 adopted for F
	CGA 1.12 (dishwashers) CGA 1.14 (smoke hse/ food proc. ovens)	(**) draft prepared (See remarks) (+) proposed harm'd std. approved by Z83 Comm.	8/19-20/92	Harm. Z83.12/CGA 1 Z83.13/CGA 1.9 and 1.11 to Z83 Comm. CGA Str. Comm. to 5/93.
			3/31-4/1/93	Harm. Z83.15/CGA 1 for R&C. Draft ha Z83.11/CGA 1.8 to at next mtg. Bilingual instr. & correlate with ha Harm. of CGA 1.12 addressed by CGA & recs. for next sub Harm. Z83.15/CGA 1 reconsider in ligh comments received. Comm. and CGA Str. 10/93. Z83.11/CGA for R&C

STATUS OF HARMONIZATION OF
Z83 AND CGA STANDARDS

Subcommittee	Standards	Status	Meeting Date	Remarks
Hvy Duty Htrs.	Z83.4/CGA 3.7 Z83.8/CGA 2.6 Z83.9/CGA 2.9 Z83.17/CGA 3.12 Z83.18	<p>comp. doc for Z83.8/CGA 2.6 and Z83.9/CGA - 2.9 compl. by task group (See remarks)</p> <p>Comp. doc. for Z83.4/CGA 3.7, Z83.17/CGA 3.2 and Z83.18 under development. (See remarks.)</p>	<p>10/22/91</p> <p>7/14-15/92</p>	<p>W.G. Strategy mtg. Wash. D.C. on Harm htr. stds.</p> <p>General Scopes of standards drafted</p> <p>Task Groups formed drafts by next mee</p> <p>Adopted for R&C ha cover both Z83.8/C Z83/9/CGA 2.9 stds</p> <p>Comp. doc to cover Z83.4/Z83.17/Z83.1 comparable CGA std consid. at next mt</p> <p>CGA 3.2 (Industr. Package Furnaces) reviewed by task g determine if it fa scope of harm. std unit htrs. and duc</p>

STATUS OF HARMONIZATION OF
Z83 AND CGA STANDARDS

Subcommittee	Standards	Status	Meeting Date	Remarks
Infrared Htrs.	Z83.6/CGA 2.16 CGA 2.23	Four (4) harm. stds to be drafted to address: (i) tubular, (ii) high intensity, (iii) port. patio and (iv) infrared type construction heaters (See remarks.)	3/24-25/92 7/20-21/93	Two (2) task group dev. respective pa of a harm std. for radiant htrs. by 8 distr. for R&C by The above task gro incl. necessary re CAN1-2.17 (High Al CAN1-2.21 (Outdoor in the draft std f htrs. As of 2/93 docs. 1 htrs. still to be
Large Boilers (Install. of Equip. in)	Z83.3			It has not yet bee if this standard v relocated to anotl and/or harmonized.

ITEM 3.
Z21/CGA Joint Water Heater
Subcommittee Meeting,
September 23-24, 1993

**REVIEW OF PROPOSED REVISIONS TO AMERICAN NATIONAL STANDARD
FOR GAS WATER HEATERS, VOLUME I**

Action Requested

Reconsider in light of comments received, proposed revisions to the Volume I water heater standard, ANSI Z21.10.1, distributed for review and comment in July 1993.

Proposals adopted without substantive change by the subcommittee will be presented to Accredited Standards Committee Z21 for consideration of approval. Substantive revisions will require redistribution for review and comment.

Background

At its September 21-22, 1992 meeting, the subcommittee adopted the attached (subcommittee only) proposed revisions to the Volume I water heater standard, dated July 1993, for distribution for review and comment.

A compilation of comments received on the proposed revisions is attached.

Additional Information

(See agenda Item 7.)

6(b) CLEARED: 3/13/95
No info identified
Exempt
Info Available
Comments Provided

ITEM 4.
Z21/CGA Joint Water Heater
Subcommittee Meeting,
September 23-24, 1993

**REVIEW OF PROPOSED REVISIONS TO AMERICAN NATIONAL STANDARD
FOR GAS WATER HEATERS, VOLUME III**

Action Requested

Reconsider in light of comments received, proposed revisions to the Volume III water heater standard, ANSI Z21.10.3, distributed for review and comment in July 1993.

Proposals adopted without substantive change by the subcommittee will be presented to Accredited Standards Committee Z21 for consideration of approval. Substantive revisions will require redistribution for review and comment.

Background

At its September 21-22, 1992 meeting, the subcommittee adopted the attached (subcommittee only) proposed revisions to the Volume III water heater standard, dated July 1993, for distribution for review and comment.

A compilation of comments received on the proposed revisions is attached to agenda Item 3.

Additional Information

(See agenda Item 7.)

(b) DULAGEN;
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ITEM 5.
Z21/CGA Joint Water Heater
Subcommittee Meeting,
September 23-24, 1993

**REVIEW OF PROPOSED REVISIONS TO AMERICAN NATIONAL STANDARD
FOR GAS-FIRED POOL HEATERS**

Action Requested

Reconsider in light of comments received, proposed revisions to the pool heater standard, ANSI Z21.56, distributed for review and comment in July 1993.

Proposals adopted without substantive change by the subcommittee will be presented to Accredited Standards Committee Z21 for consideration of approval. Substantive revisions will require redistribution for review and comment.

Background

At its September 21-22, 1992 meeting, the subcommittee adopted the attached (subcommittee only) proposed revisions to the Z21 pool heater standard, dated July 1993, for distribution for review and comment.

A compilation of comments received on the proposed revisions is attached to agenda Item 3.

3/13/95
PJD
COPIES
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DATE
BY

Compilation of Comments

Received on

Proposed Revisions to

**AMERICAN NATIONAL STANDARD FOR
GAS WATER HEATERS**

Volume I

Storage Water Heaters With Input Ratings
of 75,000 Btu Per Hour or Less

**AMERICAN NATIONAL STANDARD FOR
GAS WATER HEATERS**

Volume III

Storage, With Input Ratings Above 75,000 Btu
Per Hour, Circulating and Instantaneous Water Heaters

and

**AMERICAN NATIONAL STANDARD FOR
GAS-FIRED POOL HEATERS**

July 1993

Attached are comments received containing criticisms or further modifications to the proposed revisions to Z21.10.1, Z21.10.3 and Z21.56, distributed for review and comment in July 1993.

FORM FOR COMMENTS ON PROPOSED STANDARDS REVISIONS

Date: 13 July 1993 **Name:** Armand V. Brandao **Telephone Number:** 617-255-4860

Address: Post Office Box Number 9102, Norwood, Massachusetts 02062

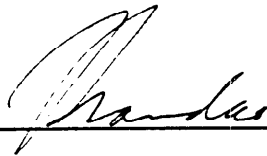
Affiliation: Factory Mutual Research Corporation

Standard Title: Gas Water Heaters, Volume I

Standard Number: ANSI/AGA Z21.10.1

1. **Endorse proposed revisions:** Yes.
2. **Comments:** Editorial only.
 - a. **Section/Paragraph:** 1.27.5
 - b. **Comment (include proposed wording or identification of wording to be deleted):**
"...less than .05 square inches..." should be "...less than 0.05 square inches..."
 - c. **Statement of Problem and Rationale for Comment:**

ASTM E 380, paragraph 3.5.4.1: "When writing numbers less than one, a zero should be written before the decimal marker."



Armand V. Brandao, P.E.

FORM FOR COMMENTS ON PROPOSED STANDARDS REVISIONS

Date: 13 July 1993 Name: Armand V. Brandao Telephone Number: 617-255-4860

Address: Post Office Box Number 9102, Norwood, Massachusetts 02062

Affiliation: Factory Mutual Research Corporation

Standard Title: Gas Water Heaters, Volume II(sic. should be III)

Standard Number: ANSI/AGA Z21.10.3

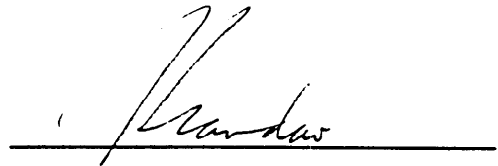
1. Endorse proposed revisions: Yes.
2. Comments: Editorial only.
 - a. Section/Paragraph: 1.26.5

- b. Comment (include proposed wording or identification of wording to be deleted):

"...less than .05 square inches..." should be "...less than 0.05 square inches..."

- c. Statement of Problem and Rationale for Comment:

ASTM E 380, paragraph 3.5.4.1: "When writing numbers less than one, a zero should be written before the decimal marker."



Armand V. Brandao, P.E.



Factory Mutual Research

FORM FOR COMMENTS ON PROPOSED STANDARDS REVISIONS

Date: 13 July 1993 **Name:** Armand V. Brandao **Telephone Number:** 617-255-4860

Address: Post Office Box Number 9102, Norwood, Massachusetts 02062

Affiliation: Factory Mutual Research Corporation

Standard Title: Gas-Fired Pool Heaters

Standard Number: ANSI/AGA Z21.56

1. **Endorse proposed revisions:** Yes.

2. **Comments:** Editorial only.

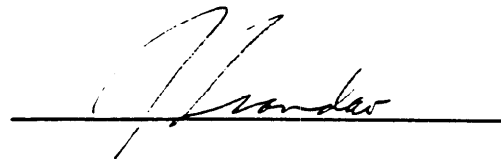
a. **Section/Paragraph:** 1.24.5

b. **Comment (include proposed wording or identification of wording to be deleted):**

"...less than .05 square inches..." should be "...less than 0.05 square inches..."

c. **Statement of Problem and Rationale for Comment:**

ASTM E 380, paragraph 3.5.4.1: "When writing numbers less than one, a zero should be written before the decimal marker."

A handwritten signature in cursive script, appearing to read 'Armand V. Brandao', is written over a solid horizontal line.

Armand V. Brandao, P.E.

FORM FOR COMMENTS ON PROPOSED STANDARDS REVISIONS

Date: 7/30/93 Name: Walter G. Leight Tel.No.: 301-975-4010

Address: Building 101, Room A603, Gaithersburg, MD 20899

Company: National Institute of Standards and Technology
Gas Water Heaters, Volume I, Storage

Standard Title: Water Heaters with Input Ratings of 75,000 Btu Per Hour or Less Standard No.: Z21.10.1

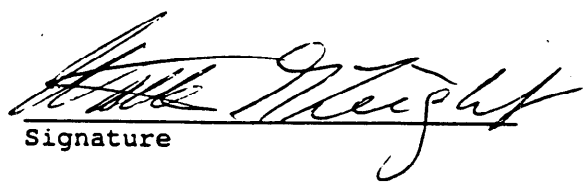
1. Endorse all proposed revisions: YES NO

2. Comment: YES NO

a. Section/Paragraph: _____

b. Comment (include proposed wording or identification of wording to be deleted):
although metric dimensions are preferred as primary units, secondary mention is acceptable. However, "gallons" are not converted to liters. (See 1.32.17 a)

c. Statement of Problem and Rationale for Comment:



Signature

Walter G. Leight
Print Name

Mail to: Mr. A. J. Callahan, Administrative Secretary,
8501 East Pleasant Valley Road
Cleveland, Ohio 44131

FORM FOR COMMENTS ON PROPOSED STANDARDS REVISIONS

Date: 7-12-93 Name: P. E. BEACH Tel.No.: 216/356-9015
Address: 20325 CENTER RIDGE ROAD SUITE #415 ROCKY RIVER, OH 44116
Company: WHITE-RODGERS
Gas Water Heaters, Volume I, Storage
Water Heaters with Input Ratings of
Standard Title: 75,000 Btu Per Hour or Less Standard No.: Z21.10.1

1. Endorse all proposed revisions: YES NO

2. Comment: YES NO

a. Section/Paragraph: 2.3.1

b. Comment (include proposed wording or identification of wording to be deleted):

Section 2.3 TEST PRESSURES AND BURNER ADJUSTMENTS

2.3.1 Add to the last sentence "but not to exceed 1/2 psig".

c. Statement of Problem and Rationale for Comment:

The maximum inlet gas pressure to the appliance must not exceed the operating pressure of the appliance controls.

P. E. Beach
Signature

P. E. BEACH
Print Name

Mail to: Mr. A. J. Callahan, Administrative Secretary,
8501 East Pleasant Valley Road
Cleveland, Ohio 44131

FORM FOR COMMENTS ON PROPOSED STANDARDS REVISIONS

Date: 7-12-93 Name: P. E. Beach Tel.No.: 216/356-9015
Address: 20325 CENTER RIDGE ROAD SUITE #415, ROCKY RIVER, OH 44116
Company: WHITE-RODGERS
Gas Water Heaters, Volume II, Storage
with Input Ratings Above 75,000 Btu Per Hour,
Standard Title: Circulating and Instantaneous Water Heaters Standard No.: Z21.10.3

1. Endorse all proposed revisions: YES [checked] NO []

2. Comment: YES [checked] NO []

a. Section/Paragraph: 2.3.1

b. Comment (include proposed wording or identification of wording to be deleted):

Section 2.3 TEST PRESSURES AND BURNER ADJUSTMENTS

2.3.1 Add to the last sentence "but not to exceed 1/2 psig".

c. Statement of Problem and Rationale for Comment:

The maximum inlet gas pressure to the appliance must not exceed the operating pressure of the appliance controls.

This pressure shall not exceed lowest rated inlet pressure of the control.

P. E. Beach
Signature

P. E. BEACH
Print Name

Mail to: Mr. A. J. Callahan, Administrative Secretary,
8501 East Pleasant Valley Road
Cleveland, Ohio 44131

FORM FOR COMMENTS ON PROPOSED STANDARDS REVISIONS

Date: 7-12-93 Name: P. E. BEACH Tel.No.: 216/356-9015

Address: 20325 CENTER RIDGE ROAD SUITE #415, ROCKY RIVER, OH 44116

Company: WHITE-RODGERS

Standard Title: Gas-Fired Pool Heaters Standard No.: Z21.56

1. Endorse all proposed revisions: YES NO

2. Comment: YES NO

a. Section/Paragraph: 2.3.1

b. Comment (include proposed wording or identification of wording to be deleted):

Section 2.3 TEST PRESSURES AND BURNER ADJUSTMENTS

2.3.1 Add to the last sentence "but not to exceed 1/2 psig".

c. Statement of Problem and Rationale for Comment:

The maximum inlet gas pressure to the appliance must not exceed the operating pressure of the appliance controls.

P. E. Beach
Signature

P. E. BEACH
Print Name

Mail to: Mr. A. J. Callahan, Administrative Secretary,
8501 East Pleasant Valley Road
Cleveland, Ohio 44131

FORM FOR COMMENTS ON PROPOSED STANDARDS REVISIONS

Date: 8-2-93 Name: Wilbur L. Haag, Jr. Tel.No.: (803)335-8281

Address: Highway 1 North, McBee, SC 29101

Company: A. O. Smith Water Products Co.

**Gas Water Heaters, Volume II, Storage
with Input Ratings Above 75,000 Btu Per Hour,**

Standard Title: Circulating and Instantaneous Water Heaters Standard No.: 221.10.3

1. Endorse all proposed revisions: YES NO

2. Comment: YES NO

a. Section/Paragraph: 2.3.1

b. Comment (include proposed wording or identification of wording to be deleted):

Revise the wording of the added sentence to:

"The increased inlet test pressure shall be the greater of that listed in Table IX or the marked maximum inlet gas pressure."

addition for the type of gas for which the appliance is certified from pg 3-8

c. Statement of Problem and Rationale for Comment:

The proposed wording avoids verbosity while more clearly stating the requirement.

Wilbur L. Haag, Jr.

Signature

Wilbur L. Haag, Jr.

Print Name

Mail to: Mr. A. J. Callahan, Administrative Secretary,
8501 East Pleasant Valley Road
Cleveland, Ohio 44131