

THE HOT AIR DIFFUSER

Chapter Newsletter

OCTOBER 2012

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PRESIDENT'S MESSAGE

Hello fellow ASHRAE members!

Our 2012-2013 session is well underway, and we are looking forward to another great year. Russ Pratt organized a great tour last month and we would like to extend a special thank you to WINCO for allowing us to examine their refrigeration system and unique distribution facility.

Also, our new chapter website is up and running thanks to Ben Seitz; and I encourage all of you to explore its new features.

I hope to see all of you on Wednesday the 10th.

Thank you,
Randy R. Reed
Idaho ASHRAE President



OCTOBER PROGRAM*

The speaker for this month's chapter meeting will be Mark Grimes from the Bureau of Facility Standards, Idaho Department of Health and Welfare. He will be giving an overview of the agency, their responsibilities, rules and base codes, and major concerns for the built environment, specifically the mechanical concerns he runs into.

When: Wednesday, Oct. 10
(11:45AM-1:00PM)

Where: Idaho Power Building
1221 W. Idaho St.
Boise, Idaho 83702

*Please RSVP at www.idahoashrae.com

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ATTENTION: ASHRAE MEMBERS

The Chapter is now accepting advertisements in the monthly newsletter.

Sponsorship Rates are as follows:

	Per Issue	Annual (9 issues)
Business Card	\$10.00	\$50.00
Quarter Page	\$25.00	\$200.00
Half Page	\$40.00	\$325.00
Full Page	\$60.00	\$450.00

IMPORTANT DATES

OCTOBER 8, 2012—COLUMBUS DAY

OCT. 10, 2012—ASHRAE MEETING

OCTOBER 31, 2012—HALLOWEEN

NOVEMBER 6, 2012—ELECTION DAY

NOVEMBER 12, 2012—VETERAN'S DAY

NOVEMBER 22, 2012—THANKSGIVING

HISTORY LESSON

Five Years Ago

The chapter president was Xenon Long. The meeting was held on Friday, October 12, 2007, at the Idaho Power Building. Cory Law, Siemens Technology, gave a presentation on wireless communication for building automation systems.

Ten Years Ago

The chapter president was Preston Nance. The meeting was held on Friday, October 11, 2002, at the Double Tree Riverside. There was a technical session by Tim Marshall, Columbia Hydronics, on air elimination and control in hydronic systems.

Twenty Years Ago

The chapter president was Richard Kartchner. The meeting was held on October 23, 1992, at Potomac Place. Howard Van Boerman gave a presentation on the design of the refrigeration for the bobsled run in Salt Lake City.

Twenty Five Years Ago

The chapter president was Phil Terrell. The meeting was held on Friday, October 9, 1987, at the Kings Table Restaurant. Jan Packwood, the Idaho Company, gave a presentation on the objectives and goals of the Idaho Company, dedicated to promoting economic growth in Idaho.

ASHRAE, founded in 1894, is an international organization of some 50,000 persons. ASHRAE fulfills its mission of advancing heating, ventilation, air conditioning and refrigeration to serve humanity and promote a sustainable world through research, standards

NEWS FROM THE HOME OFFICE

Proposed Facility Smart Grid Model Standard Open for Public Review

ATLANTA – A proposed standard to create smart facilities supporting a national smart grid effort is open for public comment.

ASHRAE and the National Electrical Manufacturers Association (NEMA) are jointly developing Standard 201P, Facility Smart Grid Information Model, which would provide a common basis for electrical energy consumers to describe, manage and communicate about electrical energy consumptions and forecasts. The proposed standard is open for an advisory public review until Sept. 3, 2012. To read the draft standard or to submit comments, visit www.ashrae.org/publicreviews.

“Historically, electricity consumption has been viewed as a collection of dumb loads at the end of a distribution system,” Steve Bushby, chair of the committee writing the standard, said. “There has been almost no interaction between the ‘loads’ and those responsible for electricity generations and distribution. The vision of the smart grid changes this picture radically. In a smart grid world, facilities become full partners in supporting and managing the electric grid. Facilities become generators using local renewable or other generation capacity. Facilities moderate electrical demand in response to fluctuations in the price or availability of electricity. Facilities communicate and negotiate with energy providers, sharing information about the facility's projected electrical demand or ability to respond to the energy provider's needs for maintaining grid stability and reliability.”

Proposed standard 201P would define an object-oriented information model to enable appliances and control systems in homes, buildings and industrial facilities to manage electrical loads and generation sources in response to communication with the smart electrical grid and to communicate information about those electrical loads to utility and other electrical service providers.

“Energy providers would benefit because it enables interaction with all different types of facilities in a common way,” Bushby said. “Facility owners benefit because products can be designed for use in multiple facility types and products designed primarily for one type of facility, a home for example, can more easily be used in another, say a commercial buildings.”

The standard is part of ASHRAE’s supporting efforts for the Smart Grid Interoperability Panel, a public-private partnership initiated by the National Institute of Standards and Technology to speed development of interoperability and cyber security standards for a nationwide smart electric power grid.

The proposed ASHRAE/NEMA standard will coordinate with work by the North American Energy Standards Board to develop a basic energy usage data model standard and create a facilities data model that provides additional energy usage data elements for commercial and industrial buildings. This includes lighting, heating, HVAC&R and other electrical loads.

New Scholarship Honors ASHRAE’s First Female President

ATLANTA –A scholarship created in memory of Presidential Member Lynn G. Bellenger, P.E., Fellow ASHRAE, has been announced for the 2013-2014 school year. The one-year \$ 5,000 Lynn G. Bellenger Scholarship will be awarded to a deserving female undergraduate engineering student pursuing a degree in a field related to HVAC&R.

“Lynn was a role model for us all, and her dedication to energy modeling helped to promote a more sustainable world,” ASHRAE President Tom Watson said. “Through this scholarship we hope to build upon her legacy by encouraging students to pursue excellence in the field of engineering, just as she did.”

More information on the scholarship and details on how to apply can be found at www.ashrae.org/scholarships. Bellenger served as ASHRAE’s president during 2010-2011 and was ASHRAE’s first woman president in its 116 year history. Her presidential theme was Modeling a Sustainable World; she was a recognized expert in energy management, with a strong focus on the need for energy modeling to help create and refine more efficient buildings. During her time as president, Bellenger promoted sustainable design, which according to her, “ignited a passion in people that is changing the world.” The first ASHRAE Energy Modeling Conference was also held during her presidency.

Bellenger passed away in 2011. To honor her legacy, ASHRAE established the Lynn G. Bellenger Scholarship, which is being used to recognize women in engineering. Contributions to help fund the scholarship are being accepted at www.ashrae.org/bellenger.

Making Farms More Sustainable Focus of ASHRAE Grant Recipient

ATLANTA – Farms are known for their green...when it comes to crops. But what about the green of buildings down on the farm?

With current research focused on enhancing building systems to make them more sustainable, a sometimes overlooked area with potential for an impact is the agricultural industry, according to Chantz Denowh, Montana State University.

“Farms and ranches have the potential to become completely energy independent due to available resources and space for their development,” Denowh said. “The most prominent of these resources is geothermal heating/cooling. Most farms and ranches have a building complex ideally suited for a small district ground source heat pump (GSHP) system. With the addition of a natural gas or biomass cogeneration unit, a hybrid GSHP system is created that can satisfy thermal and electrical needs for farms and ranches.”

Denowh is one of 23 students who will receive a grant through ASHRAE Graduate Student Grant-In-Aid Award Program, which is designed to encourage students to continue their education in preparation for service in the HVAC&R industry. The grants, totaling \$230,000, are awarded to full-time graduate students of ASHRAE-related technologies.

With his grant, Denowh plans to investigate and demonstrate the feasibility of an energy independent farm or ranch through the use of a cogenerative hybrid GSHP system, and develop dynamic control strategies to maximize efficiency of the system over its lifespan. The project will focus on the model and control strategy of the proposed system, as well as provide an economic analysis.

“Overall, this research fills valuable gaps of knowledge for hybrid GSHP systems and optimal control strategies,” he said. “The results go beyond creating a more sustainable agricultural industry, and fulfill ASHRAE’s mission of promoting a more sustainable world.”

Other recipients of ASHRAE grants-in-aid are:

- Gregory Arcangeli, University of Texas Austin, Assessing the Performance of Advanced Glazing with Integrated Shading
- John Bustamante, Georgia Institute of Technology, Investigation of Evaporating Films Falling over Horizontal Rectangular Tube Banks
- Stephen Caskey, Purdue University, Cold Climate Air-Source Heat Pump with Two-Stage Compression and Economizing
- Massimo Cimmino, Ecole Polytechnique de Montreal, Redevelopment and Experimental Validation of Eskilson's G-functions
- Christopher Cirone, University of Illinois, Waste Heat Recovery from Public Shower Facility Using a Water Source Heat Pump
- James Cullin, Oklahoma State University, Advancements in Modeling of Ground Heat Exchangers
- Chantz Denowh, Montana State University, A Hybrid Ground Source Heat Pump System for Sustainable Farms and Ranches
- Ranojoy Dutta, Arizona State University, Development of an Automated Building Conceptual Design Methodology
- Harish Ganapathy, University of Maryland, Gas-Liquid Absorption Phenomena in Microchannels – Application to Next Generation, High Performance Absorption Refrigeration Systems
- Mingang Jin, Purdue University, Rapid Airflow Modeling Advanced Building Ventilation Systems by Fast Fluid Dynamics
- Deepak Kalaikadal, University of Cincinnati, Additives Induced Enhanced of Refrigerant Evaporative Heat Transfer
- Konstaninos Kapsis, Concordia University, Building Integrated Semi-transparent Photovoltaics: Toward Net-Zero Energy Buildings
- Donghun Kim, Purdue University, Reducing Energy Costs and Improving Thermal Comfort through Model Based Control with Reduced-order Modeling
- Adrienne Little, Georgia Institute of Technology, Two-Phase Flow in Ejectors for Refrigeration Technology; also receives the Grant-In-Aid Life Member Club grant given to the highest top-rated applicants and supported by a financial contribution from the club.
- Zhijun Liu, University California Davis, Simulation and Analysis of Hybrid Indirect Evaporative Compression Cooling Systems
- Jeffrey Milkie, Georgia Institute of Technology, Heat Transfer and Pressure Drop During Condensation and Pure Component Hydrocarbon and refrigerants, and their Binary Mixtures; also receives the Grant-In-Aid Life Member Club grant given to the highest top-rated applicants and supported by a financial contribution from the

club.

- James Montgomery, University of British Columbia, Energy Efficiency in HVAC Air Filtration
- Elena Nirlo, University of Texas Austin, Evaluation of Energy Consequences of Control Strategies for Classes of Pollutants in Various Built Environments
- Adams Rackes, Drexel University, Design and Optimization of Cost Effective Environmental Sensor Networks for Commercial Buildings
- Thomas Robbins, Georgia Institute of Technology, Micro scale Autonomous Adsorption Refrigeration
- Hanfei Tuo, University of Illinois Urbana Champaign, Flash Gas Bypass for Residential Air-Conditioning Systems
- Daihong Yu, University of Nebraska Lincoln, A Novel Heat-Pump System using Bio-mass Energy
- Lexuan Zhong, Concordia University, Photocatalytic Oxidation Air Cleaners for Application in Mechanical Ventilation Systems: Toward the Design of Immune Buildings

ASHRAE Proposes First Standard on Commissioning Process

ATLANTA – ASHRAE's first standard focused on the commissioning process is open for public comment. Standard 202P, Commissioning Process for Buildings and Systems, would identify the minimum acceptable commissioning process for buildings and systems as described in ASRHAE's Guideline 0-2005, The Commissioning Process. The proposed standard is open for public review from Aug. 17-Oct. 1, 2012. To comment or more information, visit www.ashrae.org/publicreviews.

By taking the best practices from the guideline, first published in 1989, and writing a standard, the requirements can be adopted by code bodies and used by standards developers, according to Gerald Kettler, chair of the Standard 202P committee.

“The proposed standard will benefit the industry by ensuring that the built environment industry follows the owner's quality-oriented process for achieving, verifying and documenting that the performance of buildings, systems and assemblies meets defined criteria,” he said. “Standard 202P will support the requirements in other ASHRAE standards and programs.”

The commission process assumes that owners, programmers, designers, contractors and operations and maintenance entities are fully accountable for the quality of their work. The process begins at project inception and continues for the life of a facility.

“The process includes specific tasks to be conducted to verify that design, construction, verification, testing, documentation and training meet the owner’s project requirements,” Kettler said.

ASHRAE first began developing formal guidelines for commissioning in 1982, looking at documenting best practices to achieve facilities that perform according to an owner’s needs and requirements. Its original guideline on commissioning was published in 1989.

Lighting, Equipment Efficiency Changes to Energy Standard Open for Public Comment

ATLANTA – Proposed changes to the ASHRAE/IES energy standard would improve lighting and equipment efficiencies.

Seventeen addenda to ANSI/ASHRAE/IES Standard 90.1-2010, Energy Standard for Buildings Except Low-Rise Residential Buildings, are currently open for public review. For more information, visit www.ashrae.org/publicreviews.

Among them are five proposed changes related to HVAC&R equipment efficiencies. These include addendum bp, which would add minimum efficiencies for evaporative condensers used in ammonia based refrigeration systems, and updates references to cooling tower standards published by the Cooling Technology Institute.

“The scope of Standard 90.1 was expanded in the 2010 edition to cover many new building types, including supermarkets and cold storage warehouses,” Frank Morrison, committee member, said. “As part of this expanded scope, the 90.1 committee worked with stakeholders to establish minimum efficiencies for evaporative condensers often used in the ammonia refrigeration systems found in these facilities.”

Specifically, the proposed requirements of addendum bp will help users to select energy efficient evaporative condensers as well as encourage manufacturers to develop more energy efficient designs in the future. It is also anticipated that future editions will incorporate requirements for an independent, third-party thermal performance certification program for evaporate condensers, which has proven successful for both open and closed circuit cooling towers.

The other addenda related to equipment efficiencies are:

- Addendum bi, which would harmonize the minimum energy efficiencies of 3-phase air-cooled commercial

air conditioners and heat pumps less than 65,000 Btu/h with the efficiencies adopted by the U.S. Department of Energy (DOE) for residential central air conditioners.

- Addendum bj, which would re-establish the product class for small duct high velocity air conditioners and heat pumps. The minimum energy efficiency levels proposed are 11 seasonal energy efficiency ratio (SEER) for air conditioners and 11 SEER/6.8 heating seasonal performance factor (HSPF) for heat pumps which are identical to the efficiencies established by DOE for single-phase residential small duct, high velocity (SDHV) products.

- Addendum bk, which would amend the minimum energy efficiency requirements for standard-size packaged terminal air conditioners and raises the minimum energy efficiency ratio (EER) to the same level as the packaged terminal heat pumps. This new minimum efficiency will become effective on Jan. 1, 2015.

- Addendum bo, which would modify service water heating efficiency requirements in Standard 90.1 for electric water heaters, heat pump pool heaters and oil storage water heaters.

Also among the proposed changes to the standard is addendum bh, which would modify the long-standing interior space-by-space lighting power density (LPD) tables for a variety of purposes, according to Eric Richman, chair of the lighting subcommittee. This includes an adjustment to some of the space type LPDs (some go up and some go down) based on the light level design recommendations found in the new 10th edition Lighting Handbook published by the Illuminating Engineering Society (IES).

The addendum also introduces a set of LPDs for specific spaces that are predominantly occupied by seniors in permanent living facilities. These new LPDs will partially address increasing ageing population issues to ensure that these spaces receive appropriate allowances for the needs of the ageing eye. The revision also adds several new generic space type listings, including copy rooms and computer rooms, to address suggestions from users that some common items were missing.

Other addenda currently open for public review are addenda ac, bg, bl, bn, bq, bt, bu, bv, bw, bx and br.



New Guideline from ASHRAE Focuses on Smoke Control System Commissioning

ATLANTA – ASHRAE has added to its suite of commissioning guidance to ensure buildings and systems operate as intended with a new guideline on commissioning for smoke control systems.

Guideline 1.5-2012, The Commissioning Process for Smoke Control Systems, describes the technical requirements of the commissioning process described in ASHRAE's Guideline 0-2005, The Commissioning Process, to verify that the smoke control system achieves the owner's project requirements.

The guideline includes annexes that are based on actual project experience and current practice and illustrate application of the commissioning process for smoke control systems and components. It builds upon the concepts of Guideline 5, Commissioning Smoke Management System, and replaces it.

“Due to the integration and interdependency of systems, a performance problem in one system can result in less than optimal performance in others,” Paul Turnbull, chair of the committee that wrote the guideline, said. “Although Guideline 1.5 focuses on smoke control systems, a successful building commissioning process validates the interoperability between all building systems. When smoke control is the primary focus of the commissioning process, coordination among disciplines is essential for success.”

Other commissioning guidance from ASHRAE includes Guideline 0-2005, The Commissioning Process, which contains general requirements for the commissioning process of all building systems; and Guideline 1.1-2007, HVAC&R Technical Requirements for the Commissioning Process, which contains specific requirements for commissioning HVAC&R systems in Guideline 0-2005 that are unique to HVAC&R systems.

ASHRAE first began developing formal guidelines for commissioning in 1982, looking at documenting best practices to achieve facilities that perform according to an owner's needs and requirements. Its original guideline on commissioning was published in 1989.

ASHRAE also is working on several other guidelines and a standard related to commissioning: Guideline 0.2P, The Commissioning Process for Existing Systems and Assemblies; Guideline 1.2P, The Commissioning Process for Existing HVAC&R Systems; Guideline 1.3P, Building Operation and Maintenance Training for the HVAC&R Commissioning Process; Guideline 1.4P, Systems Manual Preparation for the Commissioning Process; and Standard

202P, Commissioning Process for Buildings and Systems.

The cost of Guideline 1.5-2012, The Commissioning Process for Smoke Control Systems, is \$54 (\$46, ASHRAE members). To order, contact ASHRAE Customer Contact Center at 1-800-527-4723 (United States and Canada) or 404-636-8400 (worldwide), fax 404-321-5478, or visit www.ashrae.org/bookstore.

Lighting Quality Requirements Proposed for Green Building Standard

ATLANTA – Lighting requirements to enhance productivity and comfort of occupants have been proposed for a green building standard from ASHRAE, the U.S. Green Building Council (USGBC) and the Illuminating Engineering Society (IES).

ANSI/ASHRAE/USGBC/IES Standard 189.1-2011, Standard for the Design of High-Performance, Green Buildings Except Low-Rise Residential Buildings, provides a design standard for those who strive for high performance buildings. It covers key topical areas of site sustainability, water-use efficiency, energy efficiency, indoor environmental quality and the building's impact on the atmosphere, materials and resources.

Proposed addendum m would add lighting quality requirements to the scope of the Indoor Environmental Quality section of the standard. The proposed addendum is one of nine proposed changes to Standard 189.1 open for public review from Sept. 14-Oct. 14, 2012. To comment on the proposed changes or for more information, visit www.ashrae.org/publicreviews.

“It has been clearly established that good lighting has a positive effect on the occupants of a building,” Richard Heinisch, a member of the Standard 189.1 committee, said. “Or, looking at it from the opposite direction, when occupants are dissatisfied with their lighting, this can increase absenteeism and employee turnover which, in turn, decreases the sustainability of the enterprise. Any building, and particularly a high-performance building, should address issues of lighting quality (including visual acuity, task performance, visual comfort, health, safety and aesthetic judgment) so as to enhance the comfort and productivity of its occupants.”

This particular addendum addresses a subset of the lighting quality issues with the expectation that future addenda will be developed to address remaining issues. Subsections 8.3.6.1 and 8.3.6.2 require that the occupants of certain space types be given some level of control over the light levels in that space. As pointed out in the foreword

of the proposal, citing a research study on the effects of lighting on office workers: “Normally, the persistence and vigilance of office workers will decline over the course of a workday. However, the presence of personal control of their lighting increased subject motivation allowing workers to sustain their performance—they persisted longer on difficult tasks and were more accurate on a task requiring sustained attention.”

A proposed third section, 8.3.6.2.1, ensures that certain media, such as whiteboards, are more likely to be properly illuminated by requiring separate lighting and lighting control for these surfaces, independent from the general lighting and control in the space.

The other addenda open for public review are:

- Addendum h, which clarifies the requirements for a continuous air barrier in Section 7 (Energy Efficiency) as well as the requirements for airtightness commissioning in Section 10 (Construction Plans for Operation).
- Addendum i, which modifies the climate zones to which the heat island section 5.3.2.3 (Roofs) applies.
- Addendum j, which clarifies shading provided by vegetation for the site hardscape and walls for heat island mitigation (5.3.2.1 Heat Island and 5.3.2.2 Walls).
- Addendum k, which updates the Section 7.4.3.7 (Variable-Speed Fan Control for Commercial Kitchen Hoods) to reference the language in ASHRAE/ANSI/IES Standard 90.1-2007, Energy Standard for Buildings Except Low-Rise Residential Buildings.
- Addendum l, which adds Table C-17 to include the minimum transformer efficiencies for building designs following path B of Section 7.4.3.1 (Minimum Equipment Efficiencies).
- Addendum o, which adds a new mandatory provision to Section 9 (The Building’s Impact on the Atmosphere, Materials, and Resources), establishing maximum mercury content levels for certain types of electric lamps.
- Addendum p, which removes the “Acceptance Testing” provision in Section 10.3.1.1 (Building Acceptance Testing) for small buildings.
- Addendum q, which clarifies that system commissioning must include commissioning of the associated control systems.
- Addendum s, which clarifies the requirements for outdoor airflow monitoring in Section 8 (Indoor Environmental Quality), along with operational requirements for such monitoring in Section 10 (Construction and Plans for Operation).

ASHRAE Announces Staffing Changes Related to Member Services

ATLANTA – Two senior management changes are being announced related to ASHRAE’s Member Services Department.

Carolyn Kettering, who has served as ASHRAE’s director of member services since 1986, is retiring. Joyce Abrams, who currently serves as group manager of education and certification, has been named to fill that position.

The director of member services supports volunteer leaders in the management of the Society’s recruitment, promotion and retention program; the activities and programs of its 170-plus chapters and 14 regions; customer service; research promotion fundraising; and meetings and conferences.

Kettering was hired by ASHRAE in 1985 to serve as meetings manager. She was promoted to director of member services the following year. Her accomplishments during her tenure with ASHRAE include:

- Expansion of international members, chapters, regions, sections/groups/clubs and student branches
- Creation of Young Members in ASHRAE (YEA) membership program
- Expansion of Student Activities program to include Solar Decathlon, Engineers Week and Science, Technology, Engineering and Mathematics (STEM) activities
- Expansion of meetings and conferences to include Annual and Winter Conferences, specialty conferences and Chapter Regional Conferences support
- Expansion of Research Promotion activities with goal of \$2 million in contributions achieved

Prior to joining ASHRAE, Kettering served as the manager of meetings and conferences for the Atlanta-based Life Office Management Association (LOMA), an insurance and financial services association.

Abrams began work at ASHRAE in 2006, overseeing development and implementation of a certification program to help promote ASHRAE as a leader in industry education and professional development. She also serves as staff liaison to the Certification Committee and the Professional Development Committee.

Since that time, over 1,200 certifications have been issued through the Society’s six certification programs: High-Performance Building Design Professional (HBDP); Building Energy Assessment Professional (BEAP); Building Energy Modeling Professional (BEMP); Commissioning Process Management Professional (CPMP); Operations & Performance Management Professional (OPMP); and Healthcare Facility Design Professional (HFDP).

Before joining ASHRAE, Abrams was an assistant vice president in the education and training division of LOMA where she oversaw the design and development of credentialing programs, courses and course materials and managed the development and/or production of up to 35 college-level textbooks or online courses a year.

A resident of Atlanta, Abrams has a master’s of science degree in mass communications from Indiana University, and a juris doctorate and a bachelor’s of arts degree in journalism from the University of Georgia.



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AHR Expo—The ASHRAE co-sponsored AHR Expo takes place Jan. 28-30 at the Dallas Convention Center. www.ahrexpo.com

ASHRAE Certification—all six certification programs are being offered: Building Energy Assessment Professional; Building Energy Modeling Professional; Commissioning Process Management Professional; High-Performance Building Design Professional; Healthcare Facility Design Professional; and Operations and Performance Management Professional.

ASHRAE Learning Institute—five Professional Development Seminars and 15 Short Courses are offered, including new courses on the air-to-air energy recovery, ultraviolet germicidal irradiation systems, combined heat and power efficiency, laboratory design and HVAC systems optimization.

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