SEPTEMBER MEETING: *AMENDING THE AICHE CONSTITUTION*

Dr. John O'Connell

WEBEX MEETING NUMBER 635 888 409 (further directions on page 5)

THURSDAY, 22 SEPTEMBER 2016

9:00 pm EDT, 8:00 pm CDT, 7:00 pm MDT, 6:00 pm PDT;

UTC/GMT 0100 23 September 2016

The September VLS meeting will discuss the Fall 2016 special election to amend the AIChE Constitution. AIChE Board Member and VLS Director John O'Connell will introduce the proposed changes and lead the discussion. Several AIChE Officers have promised to attend the session to help answer questions.

The Constitution has not been revised since 2003. The proposed changes fall into five general categories as described below. The ballot will allow for separate voting on each category. Instructions for postal balloting and online proxy voting will be provided to all members in early

October 2016. Balloting will begin on October 11 and conclude on December 12.

Complete revisions to the Constitution wording can be viewed at www.aiche.org/amendments.

Categories of AIChE Constitutional Revisions

1. Setting Terms Limits and Clarifying the Role of the Past President

These changes define term limits for the Past President, Secretary, Treasurer, and Board of Directors. They also formally recognize the Past President as an officer of the Board.

2. Moving Operational Provisions to the Bylaws

A Constitution should reflect the high-level principles of the Institute, with the Bylaws outlining operational processes. Descriptions of membership grades and the Nominating Committee process are operational and the amendments move them to AIChE's Bylaws.

3. Modernizing Practices

These revisions reflect best practices and better position AIChE for future growth. They:

a. Eliminate formal "election" of all members, which has not been the practice for some time.
b. Broaden AIChE's ability to create entities in response to the evolving scope of chemical engineering.
c. Change the percentage of members needed to amend the Constitution to reflect contemporary levels of voter participation in nonprofit elections.

4. Recognizing the Ways Technology Impacts Petition Candidacies

This provision increases the small number of members (100) required to establish a petition candidacy for the Board or to serve as an Officer. When this provision was originally adopted, petitions were circulated in hardcopy and required considerable face-to-face interaction. In today's networked world, with signatures gathered electronically, aided by social media and mass emails, demonstrating a meaningful threshold of support and a candidate's commitment to service raises the bar for signatures.

5. Meeting Administrative and Legal Requirements

The administrative changes address grammatical modifications and redundant language. Additionally, the New York State Nonprofit Revitalization Act requires organizations to include a dissolution statement in their governing documents.

IN THIS ISSUE

Last month, we mentioned some challenges of distance communications compared to face-to-face conversations. Nuances can be lost in print and electrons. Therefore, to allow the columnists to speak in their own voices as nearly as possible, we have become minimalist for this issue. Columns have been printed as closely as possible to the authors' original submission, preserving different styles of expression as completely as possible [Only minor changes have been made for standardizations of punctuation and layout.]

Read about the details of a new student-oriented competition for partnering for international service projects headed by **Alan Zagoria** on behalf of **ACE4G** or AIChE Chemical Engineering for Good.

Chair Experience Nduagu talks about trying a new strategy for conferences.

Past Chair Amanda Scalza discusses reluctantly attending a "soft skills" seminar and learning some valuable lessons.

Neil Yeoman's column, *The World Out There,* asks some insightful questions about the meaning and means of diverse representations, as well sharing some some reader comments, reminding us that he can be reached at virtualtreasurer@aich.org for direct comments on his columns.

Please address any comments and contributions on these or other subjects of interest to VLS members to jbrand@unl.edu Please include the words *VLS Newsletter* in the subject line.

Jennifer Brand, Editor

MARK YOUR CALENDAR

VLS Meetings are USUALLY the fourth Thursday of the month:

--- Thursday, September 22rd ---

Amending the AIChE Constitution

John O'Connell

--- Thursday, October 27th ---

Student Showcase (Paper Competition)

--- November Meeting – Unwrapped (Food Processing Tourism)

by Amanda Scalza

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AIChE Virtual Career Fair

Thursday September 22, 2016

12 – 4 pm EDT

Special Student hour: 3 -4 pm EDT

AICHE CHEMICAL ENGINEERING FOR GOOD COMPETITION *2016*

Introduction

Alan Zagoria, an industry veteran and an award-winning AIChE Fellow, is helping roll out a new initiative called **ACE4G** or **AIChE Chemical Engineering for Good**. Alan assures us that this is not meant to imply that chemical engineering is usually a tool of The Evil Empire. Rather, it is an initiative to help internationals student partnerships to work on small-scale service projects with large local impacts on the quality of life in the "foreign" (to the US partners) countries. Announcements were first sent out on September 7th and on the first day, there were expressions of interest from Nigeria, Pakistan, and China. The full announcement follows; Alan can be contacted at ace4g@aiche.org; more information can be found on the AIChE website.

Contest Specifics

Purpose: to encourage the involvement of chemical engineers and chemical engineering principles for international service projects (ISP[1]) such as EWB-USA* and to generate new appropriate technology and tools these type of projects.

Prize: unrestricted donation to the winning chapters. Three prizes will be awarded for top three entries in the amounts of $3000, $2000, and $1000. In the unlikely event that the judges determine there are not three entries of sufficient quality than not all three prizes will be awarded.

Participants: Open to all AIChE international student chapters and all EWB-USA student chapters. A chapter may recruit chemical engineering students, professors, and professionals to their team. At least one team member must be a student or professional member of AIChE. Only one entry per chapter allowed. Collaboration of EWB-USA student chapters and their local AIChE student chapter is encouraged.

Dissemination of Results: The contents of all contest submissions may be made public, with appropriate credits given to the original submitters.

Contest Description

Contest entries address '***How chemical engineering can be applied to solve world problems on a micro scale".*** Submissions provide a chemical engineering solution to problems often encountered in small-scale quality of life improvement projects in the developing world. Examples of typical problems would be water treatment, alternate energy sources, energy efficiency, and preservation / production of crops and foods. Submissions must utilize chemical engineering technology and skills (beyond the hydraulics calculations commonly used in designing water systems). Entries will be ***one*** of two content types:

[1] Throughout this description, "ISP" represents small-scale quality of life international development service projects in the developing world, such as EWB-USA projects

I. Recommend the application of a specific technology, available today, that is not currently utilized in ISP.
   - ♦ Define the specific community problem being addressed
   - ♦ Describe the specific technology and how it is based on chemical engineering principles; provide electronic copies of or links to references (papers, descriptions of commercial applications & offerings, patents, other supporting material)
   - ♦ Describe what kind of data would be required to design / customize this technology for ISP
   - ♦ Describe why this technology would be appropriate for implementation in the developing world partner communities. Include consideration of technical, maintenance, financial, and cultural sustainability. Provide estimated typical costs for initial installation, maintenance, and operation.

II. Develop a toolkit for the application by an ISP team of *a set* of existing chemical engineering-related technologies addressing a technical challenge often faced in these type of projects
   - General technical issues include but not limited to topics such as water purification, alternate energy sources, energy conservation, and preservation / preparation of crops and foods
   - ♦ The set should include at least three different technologies
   - ♦ The tool kit should include
     i. Technology Basics Document intended for use by an ISP team that includes description of the problem addressed, description of each technology and discussion of when each technology is most applicable
     ii. checklists / tables to help an ISP project team identify candidate applications and select between technical options
     iii. important data required to select and design. Inclusion of general design procedures & considerations will be considered by the judges as additional added value to the toolkit.
     iv. references to useful source materials
   - ♦ Describe why the technologies included in the tool kit are chemical engineering related. Describe why these technologies would be appropriate for implementation in ISP* partner communities, including aspects of technical, maintenance, financial, and cultural sustainability.

Contest Timeline

- Oct 14 - registration deadline
- Nov 18 - submissions due
- Jan 15 - announce winners

For more information and registration information contact Alan Zagoria at ace4g@aiche.org

FROM THE CHAIR: MAKING THE BEST OF CONFERENCE ATTENDANCE

Experience Nduagu

Besides presenting my work to the scientific community, which used to be my main purpose of my conference attendance, I always wanted my conference attendances to be opportunities to meet new people, learn new things and keep abreast of new trends in my research area. Unfortunately, I did not realize all these goals satisfactorily. Until recently, there has never been a time when I felt that I connected with a sizable number of people at a professional level in a conference as I did in the just concluded World Heavy Oil congress. Most of the participants of this conference came from the heavy oil industry, and the congress held in Calgary, Canada, a city which I now call home, having schooled, lived and worked here for 6 years.

Prior to now, I have participated in numerous conferences, at least 20 scientific and more than 5 industry based conferences. In almost all of these I was a speaker or presenter, whereas, in the World Heavy Oil Congress, I was just a participant. My perception of conferences before now was that if I am not presenting, it is a waste of time attending. I previously rejected an opportunity to make a poster presentation at a conference in the United States of America because I taught it was unwise to travel from Finland only to make a poster presentation. However, my mindset changed last week after I had what I would describe as my most effective conference attendance even when I did not present but only participated.

Unlike previous conferences, which were not as effective, I found my participation at the World Heavy Oil Congress worthwhile in many ways: 1) I obtained a tremendous amount of information from the presentations as a result of a desperate need for data. 2) I connected to the highest number of professionals I've ever connected with during a single event. 3) I received a high response rate of the follow-up emails sent after the conference.

The primary reason for participating in this conference and committing to be 3 days away from my office was to gather information and meet people who could provide the information we needed for a study. Thus, I was hungry for that information. That aroused my interest in some of the presentations. Before the conference, I researched some of the companies and their innovations. And, while listening to the presentations, I could connect the dots as well as see some of the questions I had answered. I took notes as well as pictures using my phone. I cannot remember having this level of interest in previous conferences. That could be one reason why I think this conference was successful.

I met and connected with about 25 professionals, many of whom are policy makers at their companies or organizations and could help provide the information we need. Almost everyone I met was happy to participate in the project. We exchanged business cards and promised to be in touch. We followed up with emails and interviews have been lined up. The highest number of people I have connected with in previous conferences did not exceed five. Sadly, after previous conferences, I had no motivation to follow up on my connections. This is no doubt a reason why I feel that opportunities were lost during my previous conference participations.

Below, I list systematically the things I did right this time that changed my conference participation outcomes significantly. These steps can work for others too if they diligently apply it.

First, before leaving for the conference, I did my research and came up with a plan. For each day, I listed the presentations I wanted to attend and the people I wanted to meet and connect with. By digesting the information on the conference website and the conference schedules, I know where and when to meet the people I wanted to connect with. I went to their presentations, met them after they presented or during networking breaks in the exhibit booths or during lunch breaks.

Second, my plan included a strategy for meeting new people, introducing myself and my organization, and pitching our study to these people. For example, after the presentations, I met with the speakers and started off by introducing myself and my organization and quickly saying some kind but true words about their presentation. One way to be honest about this is to mention the things you liked about their presentations and how it connects to an ongoing project that you are involved in. I proceeded to pitch how their participation in this study could bring benefits. This strategy does the magic as all the people that I spoke with responded very positively. It is true that this may not be effective in some situations where someone is not doing a project that the speaker may benefit from. However, mentioning what you liked about their presentations and your interest in their subject matter is key to establishing a connection and building a rapport.

Third, an important part of the plan is timely follow up. After each day of the conference, I returned home and went online to connect my contacts on LinkedIn. The best way to connect them is to write a personalized connection message mentioning that it was nice to meet them at the ongoing conference. I ended by saying that I would follow up with an email and thanked them in advance for connecting. That method worked for more than 90% of these contacts added me to their network. More so, immediately after the conference, I extracted the contact information from the business cards I collected and followed up with official emails inviting them for meetings. This action has recorded up to 70% success rate of accepting the invitations.

Finally, it is important to follow through with each of the steps in the plan above. It is easy to derail from the plan. For example, I felt very tired at the end of each day but I still added my contacts on LinkedIn because I wanted to connect with the contacts when our conversations were still fresh in their memory. Also, there were times when my conversations with a few speakers stretched into some presentations I was interested in. What I did in these cases were to politely excuse myself to catch up with the presentation. If that was not done, I would have missed out of important presentations and contacts.

I am happy that my plan worked well and I look forward to testing this strategy more in the future. I would like to invite you to join me to test it out. My expectation is that you would be happy with the outcome.

FROM THE PAST CHAIR: PERSONAL PRESENCE

Amanda Scalza

When was the last time you have attended a really excellent soft skills course? I am willing to bet we all have slept through our share of slides, from both new graduates and top keynote speakers. We all have some continual learning to do.

I was recently nominated for company training called "personal presence". To be honest, the idea seemed so bizarre that I might have ignored it if my boss had not been copied.

I walked into the training with a grimace on my face and apprehension in my voice. There were many questions in my head, "what am I doing here? What did I do wrong to deserve this? Who thought I needed this?." Then I saw it-the video camera! I was ready to bolt for the door.

The room was full of people from all stages of their careers and with different experiences in public speaking. As for myself, I had great training from managers previously on public speaking and spoke at company functions and AIChE events before. However, by the end of this three-day training I had confidence in not only presentation speaking but also daily conversations I never had before. Here are three of the most powerful things I have learned, in both this training and previously.

1. **If you can email the presentation out, your slides are too busy.** By that I mean if your slides contain so much detail that they are stand-alone, no presenter needed, they will be detailed. This is true even for technical presentations. Steve Jobs is the most powerful example of this, and I learned a great deal reading a book on his presentations by Carmine Gallo.
2. **Be realistic about your time.** We have short attention spans. This is especially true if we have been sitting through meetings or conference presentations all day.

Yet, presenters come with fifty slides for a twenty-minute presentation. Either you will be rushing through or you won't get to half of them. In my experience, any more than one slide per minute and you will be rushing through.

3. **Do not, I repeat, do NOT stand behind the lectern.** Make sure you go to the meeting room a few minutes before your talk to work out these logistics, but this is very important. No matter how confident you are, you will not appear nearly as confident and your message will not appear as powerful when you are confined to one spot.

I learned from this experience much more than presentation skills, and was reminded of many lessons I had forgotten. Whether presenting or simply in a meeting, people judge us in the milliseconds we walk in the room. They judge our trustworthiness by our voices, our facial expressions, and our body language. It is a skill we must practice to decide how we want people to feel, and it is a skill we must practice no matter where we are in our careers.

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THE WORLD OUT THERE: VARIETY

Neil Yeoman

I volunteered to write this column to add variety to what was being published in this newsletter and to encourage the display of different points of view on those subjects where different points of view are likely. Most of what was appearing was written by members who graduated after I retired so I represent a bit of generational diversity and quite a bit of professional background diversity. For this month's column I wanted to continue on the subject of chemical engineering education by publishing two messages I received in response to earlier columns. Dr. B read all of my previous columns and Dr. R read all but the last when he wrote the comments below. Both responses appear at the end of this column.

I also toyed with some remarks on diversity because the subject came up at a recent meeting of the Admissions Committee (AdCom) on which I serve, currently as Immediate Past Chair. The committee was told that it ought to recruit more women to be more diverse. My first reaction was to ask for information about the demographics of the Institute to see what fraction of the membership was female and also to see if there were other

areas where the AdCom might want to try to become more diverse. AIChE knows pretty closely the gender breakdown of its membership but does not do too well on ethnicity. It seems that AIChE is about 15.6% female. With the AdCom at 22 members with three women the committee is shy by about 4/10 of a woman to match the Institute demographics. With regard to the other two groups that are usually cited when diversity is discussed, Hispanics and African-Americans, both of which hover about 3% of the AIChE membership, the AdCom does "better" than the AIChE demographics by a fraction of a person. So, for these three groups, to the nearest whole person, the AdCom is right on the mark if the Institute's demographics are the basis for quantifying the issue. Since the AIChE demographics list Asians separately I looked at that also. Here the AdCom doesn't do as well. About 19% of those who responded listed their ethnicity as Asian. If this number holds true for the entire membership, the AdCom, with only one member of Asian extraction, falls short if the intent is to have the AdCom demographics match those of the Institute.

To expand the thinking further I took a look at the AIChE BOD. There, if the demographics of the Institute are the bases for defining diversity, women are overrepresented by a factor of about two and African-Americans by a factor of about three, but there are no Hispanics and no people who would be classified as Asian. This raises the question as to what diversity is supposed to mean and what a push for diversity is supposed to do. When is there enough diversity? Can there be too much diversity? I see "diversity" as seeking to have an entity at least roughly match the demographics of the population from which it draws its members. The first step is to define that basic population. This would seem to be easy but sometimes isn't. For example, the National Organization of Women (NOW), in theory, could draw its membership from the entire population but, realistically, it only draws it from the female part. Does NOW fail the diversity test because its leadership and all of its entities are exclusively female while the general population is about half male, or does it pass that test because its membership is all female? I would guess, but do not specifically know, that NOW does not exclude men from becoming members.

There are two other questions that need to be asked. Is this something which AIChE should be addressing? The leadership seems to feel that it is. If so, the subject should be discussed fully and openly, and we should do so as the engineers we are and try to be as objective as engineers are supposed to be. The second question has two parts. Why is the AIChE membership only 15.6% female and does the entire profession have the same demographic?

Messages by Drs B and R

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Thanks, Neil, for giving me the opportunity to review a draft of your August column and for sending me copies

of the earlier newsletters. I read all of your columns, and they all are of very interesting topics. I am particularly fond of caffeinated coffee but was interested in the chemical processes you described. The other topics are very relevant as well to our profession.

ChE departments often discuss their curricula with their industrial advisory boards. This is important as part of the curriculum change process for ABET accreditation. One relevant example is how various universities adopted to the ABET requirement for process safety in ChE curricula

One university evaluates faculty on teaching, research, and service. The department, college, and university have promotion and tenure policies that define qualitatively what constitutes satisfactory performance and excellence in these areas. For promotion, a faculty member needs to demonstrate satisfactory or better performance in all areas and excellent performance in one or more areas depending on the situation. Newer faculty are assigned mentors and those who have poor teaching performance are recommended to participate in activities offered by the university level teaching and learning center.

Regards. B

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Neil:

I enjoyed reading your past columns. It is astonishing to me that you can recall the details of work that you did more than fifty years ago. Sometimes, I have to re-read my own papers to remember what my research was all about twenty years ago. The whole coffee story was wonderful and should be required reading for ChEs.

I have something to say about the BS/MS and professional status. Most of the changes in the ChE undergraduate curriculum have been forced by state legislatures. Florida passed a law some fifteen years ago where they demanded that all BS degrees should be completed with 120 credit hours. Of course it was an unmitigated disaster and they backtracked at least for engineering degrees.

You are also correct about the unnecessary baggage in many programs. I had classes in drawing and electro-mechanical machines for my undergraduate degree, although I still use my technical drawing skills. However, due to the pressures to streamline the curriculum many schools dropped some essential courses, some of them do not teach chemical process control these days. Moreover, with the advent of biotechnology, we now teach bioprocesses, bioseparations, biochemistry and even molecular biology. Think of another 15 credit hours for English and Arts and you have a more than compressed schedule. Our engineer peers tease us because we do not have electives. How can you have electives with such crowded curriculum?

Many schools now, and ours is one of them, offer a "JUMP" program where you can get a BS and a MS in five years. We do not have many takers. Instead what has become popular, at least among gifted

students, is to get a dual degree with Chemistry or Mathematics as a second degree. What our students learn fast is that if they can succeed in ChE classes, they can succeed in any classes, including medical school.

Meanwhile we still try to "educate" rather than teach "skills" to our students. We teach material balances using integral control volumes and vector calculus. We emphasize the use of material and energy balances in designing chemical equipment and the modern techniques of plant design such as chemical reaction path, "pinch" balances and separation sequence strategies.

But we are a minority in a changing world. The bestseller for teaching material balances in ChE schools is a book with hardly any equations. The self-esteem of the students is more important than their education. Many students think the only purpose of a degree in ChE is to get a job that pays as a ChE job pay, even if it is a sales job.

Thanks for your columns; I enjoyed them very much. I am a AIChE member but I do not get the VLS newsletter. What do I have to do to get it?

Best regards, R

ATTENDING A VLS MEETING

- **Join by internet:**
  - https://aiche.webex.com/mw3000/mywebex/default.do?siteurl=aiche
  - Search for VLS or by meeting number 635 888 409 (March) 634 167 017 (April)
- **Join by phone:** Access code: 634 167 017
  - 1-866-469-3239 Call-in toll-free number (US/Canada)
  - 1-650-429-3300 Call-in toll number (US/Canada)
  - Global Call-in numbers
  - Toll-free calling restrictions

Attendance at a Virtual Local Section Meeting is open to AIChE Virtual Local Section Members, AIChE members, and other interested people.

The statements and opinions in this newsletter reflect the views of the contributors, not of the AIChE or the VLS, neither of which assume responsibility for them.

PDH CREDIT FOR VLS MEETINGS

LAURA J. GIMPELSON, P. E.

Attendees of the Virtual Local Section Meetings can receive up to 1 hour of professional development credit that meets the continuing education requirements of most state professional engineering registrations. To receive the certificate documenting your attendance, send an email to the VLS secretary, Laura Gimpelson, at virtualaiche@gmail.com.

Include the following information in your email:

1. Name of the Presentation and Speaker
2. Attendee's name as listed on the registration certificate
2. Attendee's registration number and state/providence of issuance

The certificate, in pdf format, will be issued within 30 days of the receipt of the request.

JOB OPENINGS

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Disclaimer: *Positions listed here have been contributed by VLS members and are listed in good faith as a courtesy to interested VLS members. The AIChE, the VLS, and VLS Newsletter staff are not responsible in any way for the content or veracity of the ads, or for the conduct of the employers or the recruiting agencies. Posting these ads is not an endorsement of the companies or the recruiters, nor is it a guarantee that these positions are still open or will be filled*.

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General Cable, at https://general-cable.jobs.net/en-US/search is looking for several chemical engineers, including

1. **Maintenance Coordinator/Planner in Marshall, TX**
2. **Process Engineer in Jackson, TN and Lexington, KY**

More information, applications, and additional jobs posted on the website, above.

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Nicholas Meyler, nickm@wdsearch.com of Wingate Dunross Inc. is seeking a **materials scientist/physics/optics** specialist for a well-funded, privately held company with a very disruptive and innovative integrated optical technology designed to support an entire opto-electronic communications ecosystem on a single chip. Now the company is poised for growth and success. They are revolutionizing the transceiver and subsystem supply chain enabling the delivery of next generation high-speed infrastructure products. Additionally, the founders have a successful track record in both large and startup companies. Competitive compensation and

equity will be offered. This is not a mainstream chemical engineering job, but if you are interested in this outstanding opportunity, please send me a resume. Random resume submissions are always welcome, too. Referrals and recommendations are greatly appreciated.

Location: Albuquerque NM, ranked by US News recently as one of the best cities to live and work in: http://realestate.usnews.com/places/new-mexico/albuquerque

Job Description: Laser Designer who reports to: VP of Engineering; my client is seeking a top-level laser designer with extensive laser design experience and knowledge of III-V materials and laser physics.

General Function: The Laser Design Engineer will develop highly advanced laser systems, from concept to product. This is an opportunity to work with a highly motivated, high performance technical team on highly differentiated, disruptive technology.

Education and Experience:

- MS or PhD in Material Science, Electrical Engineering, or Applied Optics
- MSEE/PhD preferred
- Five (5) years of hands-on design experience in semiconductor lasers with emphasis
- on III-V materials preferred
- Must have a proven track-record of success, from concept to manufacturing

Skills/Knowledge/Abilities:

- -Must have a background in III-V materials, especially as applied to optoelectronic devices.
- Experience in the design, simulation, testing and analysis of III-V lasers
- Experience working with process engineers to define fabrication methods, layout and test requirements.
- Able to perform short- and long-term testing of devices to ensure products meet design objectives and client specifications.
- Track record of successfully identifying and resolving product issues during all phases of the product life cycle to include the design and production.
- Ability to work in a dynamic startup environment.
- Excellent verbal and written communication skills

Essential Job Functions:

- Functions are subject to change from time to time to meet the needs of the Company
- Design, simulation, testing and analysis of III-V lasers
- Drive technology transfer to manufacturing.
- Document process specifications and train relevant personnel when needed.
- Prepare for, and deliver presentations to customers as required.
- Other duties as assigned; some travel

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