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# JSPE Magazine Quarterly

The Japan Society of Professional Engineers



## Topics

- New Year Greeting from JSPE President
- Report on E20 Summit

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### Alps

It is one of the peaks of the Alps as seen from southern Germany. No matter how bad the weather is, there will always be sunshine. I hope that we will overcome the difficulties and have a good year this year.

To be an organization suitable for engineers who can only solve social issues

Happy New Year to all members. For 2022 years, while the social impact of the COVID-19 remains, we have participated in JSPE's various activities and cooperated. Thank you very much.

2022 marks the second year of JSPE president, and not only what JSPE failed to achieve in 2021, but also it has been a year of thinking about which areas we should focus on, planning and working on them. The slogan of "building a base camp for domestic PEs" has been done and what could not be done, and there are still many issues to be addressed.



### **●Satisfaction and expansion of member satisfaction related to CPD seminars**

We have finally built a trial site for on-demand CPD courses, which we have been considering since last year. We have not yet started to revise the CPD certificate issuance function and renewing JSPE's HP, but we hope that it will help self-improvement. In addition, in 2022, we asked a friend in Canada to lecture us and we were able to hold seminars in English at intervals of about 3 months. And, we thought that we were able to expand the diversity of learning, such as not only opportunities to experience English, but also learning examples of overseas engineering. Yes. Learning requires both diversity and expertise, but I feel that a balance has been achieved in which conventional technical seminars are responsible for expertise, and diversity is handled by Onikin and these English seminars. In addition, four themes promoted by members (innovation management, new energy domains and energy conservation, initiatives of advanced companies toward carbon neutrality, renewable energy), we have started to hold workshops, and we are now able to provide an environment where we can learn what we need on our own with the cooperation of other members. The workshop group is second year, and it is still a long way off, but it can be said that it is a big step.

### **●Promotion of intergenerational exchange and expansion of membership network**

The domestic situation of the COVID-19 disaster was one of the factors, but unfortunately we have not been able to hold face-to-face events. If you have some interaction, you can build and maintain relationships online. But it is difficult to build relationships when you meet for the first time, and it is undeniable that that part was lacking. On the other hand, NSPE's PE Conference and Indonesia's Engineer 20 (published in this volume). overseas events have already resumed, and are lagging far behind. I feel that Japanese people's tendency to worry too much about the eyes of those around them is working in a bad way. Regardless of what those around me say, I feel that my role as JSPE president is to provide clear guidelines on what JSPE should do and resume face-to-face events. \* Some members prefer to be hybrid with online, so in that sense.

### **●Strengthen the dissemination of information within the association to the outside world**

Public relations activities through SNS are steadily increasing the recognition of JSPE, and there are more opportunities for non-members to participate in JSPE seminars, albeit to a small extent. There are many points to consider, such as the characteristics of each media and cost performance, but I would like to proceed step by step with what should be done to disseminate information more effectively.


Looking back in this way, it is true that there are things that we have not been able to do, but

we can see that we have made steady progress one step at a time over a period of one year. The fact that we have been able to solve the problem means that the quality and quantity of services provided to members are close to the required level. I don't think there's any need to be weirdly pessimistic.

Now, 2023 is the time for the election of JSPE directors. Since the diversity is a necessary condition for increasing the vitality of the organization, I would like to ask for the our active members as directors and supportive members.

We hope that by overcoming COVID-19, we will be able to normalize society as soon as possible and play an active role together with our members. This is my New Year's greeting.

1<sup>st</sup> Jan/2023, President of JSPE



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Toko Nishikubo



JSPE External Relations Association  
Nishikubo, Moriyama

### 1. Overview

15<sup>th</sup>~16<sup>th</sup>/ Nov, 2022, G20 Summit was held in Bali, Indonesia, and under the theme of "Recover Together, Recover Stronger," issues such as food and energy security, global health, and digital transformation were discussed for two days. The [Institution of Engineers Indonesia](#) (PII) as the host, aims to train leading engineers to address economic, environmental and healthcare challenges. We launched the E20 (Engineering 20) summit as a side event of G20. And while academic societies from related countries were invited, JSPE was also invited as a Japanese organization. I participated in the E20 summit in Bali, Indonesia. The outline of the meeting is as follows.

JSPE, which aspires to become a global engineer, expects to expand exchanges with engineers from various countries, including the United States, and is participating in this project. This activity is also consistent with the action plan "(5) Strengthening Relationships with Overseas Engineering Organizations such as NSPE" of the FY2022 Action Plan, which was approved at the June 2022 General Assembly.



Date: 2022/11/3 ~ 11/4

Location: Nusa Dua Beach Hotel, Nusa Dua District, Bali, Denpasar City, Indonesia

Theme: For collaboration among leading engineers in three focus fields

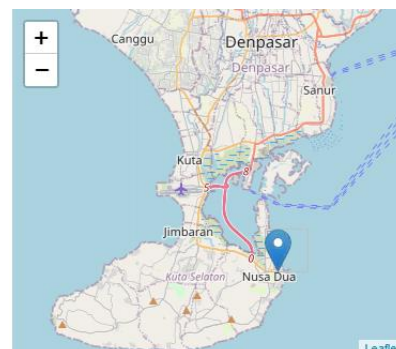
- Green Economy
- Digital Economy
- Care Economy (healthcare and education)

Participants: Approx. 60 (on-site participation: approx. 40, online participation: 20)

JSPE Participant: (President) Nishikubo

### 2. Nusa Dua District, Bali, one of Indonesia's leading resorts

Nusa Dua is a large five-star beach resort located in the southeast of Bali, 40 km from Denpasar, the capital of Bali, Indonesia. It is directly connected to the airport by the Ngurah Rai Bypass, and is developed as a dedicated resort area separated from the outside by a gate and a moat, and there are many large resorts that are expanding internationally in the area.



**3. Background to attending the E20 summit**

End/May: PII inquires JSPE about its participation in E20.

We asked for information such as the prospectus of 8/M:E20, and after a meeting, we decided to participate in this project.

12<sup>th</sup>/Sep: Attend a lecture on Feed 10 Bilion as one of the bases of discussion

4<sup>th</sup>/Oct: Attend the E20 lecture on L eader engineer & education

24<sup>th</sup>/Oct: Participate in the Pre-summit.

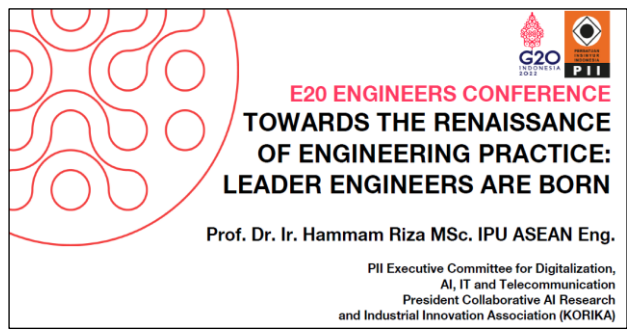
Discuss the PII draft of the Leader Engineer to be discussed at next week's E20 summit

3-4<sup>th</sup>/Nov: Attend the E20 summit.

Leader enginner is assigned to the eight technical areas required and the collaboration to realize them. As JSPE, he is responsible for Climate Change.



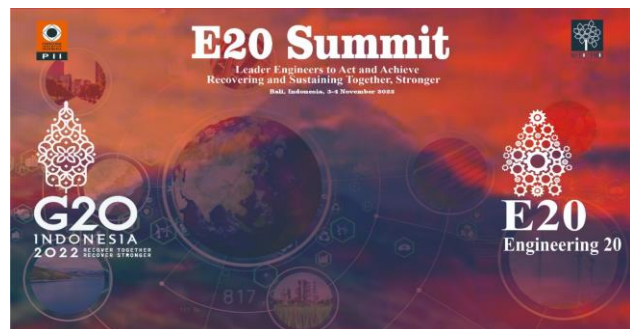
Feed 10 Billion confrence



Leader Eng. & Edu. conference



E20-pre-summit



E20 summit



E20 Participating Organizations

**4. Arrangements at the E20 summit**

The E20 summit has two aspects, discussion and exchange, and 3<sup>rd</sup>/Nov is mainly based on the draft of the Leader engineer. 4<sup>th</sup>/Nov was mainly held on networking to facilitate future collaboration.

**4-1. Discussion of Leader Engineer**

Following discussions at the E20 summit, the following points were agreed:

- Leader Engineer, which solves future issues, is especially necessary in the following eight of the three focus areas, and Chair (PII member), which is the main promoter, and Co-chair (International Deligetes) who supports selected.
- Consider action items for creating Leader engineer in each chair & co-chair.
  - \* Since many of the E20 participating members, including PII, are educational institutions, the main focus is on educational perspectives.
- Each member will nominate an individual worthy of recognition as an leader engineer at the E20 summit
- Members of G20 host country will support the holding of the E20 summit in their own country
  - \* The next host country will be India

List of 8 areas and key responsibilities required by the Eader Engineer

| Field   | Chair (PII members)   | Co-chair (internatial deligates)            |
|---|---|---|
| Education   | Dr. Ir. Hitifah Sjaifudian  | Ir. Prof. Dr. Norlida Buniyamin (Malaysia)  |
| Smart and new construction materials & technologies | Ir. Andi Taufan Marinba   | From UK                                     |
| Renewable energy                                    | Ir. Sapri Pamulu  | IEI India                                   |
| Climate Change                                      | Ir. Wendi Mawarudi  | Dr. Tokoh Nishikubo (JSPE president, Japan) |
| Financial engineering & investment                  | Izhari Mawardi  | KPEI (Korea)                                |
| Healthcare  | Ir Ricky Hikmawan Wargakusumah  | IEI (India)                                 |
| Food security                                       | Dr. Ir. Michel. Yanuar Jr.  | IEI (India)                                 |
| Digital transformation & investments                | Rianto S. Baskoro   | Megat (IEM, Malaysia)                       |
| Permanent secretry general                          | Ir. Purba Robert M. Sianipar, Prof. Michel Goutana<br>Ir. Dandung Sri Harninto, Ir. Andi Taufan Marinba |   |

**4-2. Networking**

As an introduction to Indonesia's focus examples, participants from each country deepened their exchanges while observing the fields of agriculture and culture. On agriculture, participants from PII, M. r. Suniada's fruit farm in northern Bali (also known as Snake skin fluit) Visited. As the foundation of the collaboration between each country, one Salak tree was planted. It will take about five years to mature, but we would like to promote cooperation so that we do not lose to the trees we planted.



Fruiting at the base of the Salak plantation tree





Harvested Salak is used for commemorative tree planting

In the field of differentiation, we observed traditional dance at the Bali Harvest Festival. The harvest festival itself is an event in which residents of all ages, from children to the elderly, work together to create an event that transcends generations. Speaking of developing countries, there are many things that can be referred to in terms of energy, positivity, and hunger for growth due to youth, and I felt again that many engineers should not forget them.



Welcome events at the Harvest Festival

## **5. Participants' comments**

It was the first E20 event, but there was a common understanding that only engineers can solve the problems of each country. It was a wonderful opportunity to rethink what engineer is. PE. What should be the organization JSPE that disseminates the PE. I strongly felt that constantly thinking about what I should do as an individual would benefit not only my career but also society. I would also like to express my deep gratitude for the wonderful opportunity to collaborate with overseas organizations as a result of belonging to JSPE, and I would like to work to pass the role on to the next generation in a better way. Finally, if you can't enjoy your own life, you can't spread happiness to those around you, and I was strongly impressed by seeing PII members in Indonesia enjoying the opportunity of summit to the fullest. After all, it will be exhausting if you only have shoulder and elbow situations, so the key is not to forget to be playful.

The JSPE External Relations Association also serves as a liaison with overseas organizations, as in this case. If you are a member who wants to collaborate with overseas organizations, let's work together. We look forward to hearing from you.





Group photo with PII/IEE members after the meeting



After summit, go to the beach and see the sunset

Members who have newly registered PE or passed the FE/PE exams by December 2022 are as follows: Congratulations to all of you.

\*From Autumn 2018 (Vol. 43), the reports have been posted on the web.

<https://www.jspe.org/member/magazine/magazine-index/>

\* Some browsers may not be able to open the file properly. If it fails, please reopen the file in a different browser.

(Verified browsers: Google Chrome, Microsoft Edge, Internet Explorer)

\* The latest exam information and the path to passing and registering are very valuable information, so if you are a member who can provide information, please contact the Public Relations Subcommittee ([public.2007@jspe.org](mailto:public.2007@jspe.org)).

### PE test

| Membership Number              | field            | Date    | Testimonial URL   |
|--------------------------------|------------------|---------|---|
| PEN-0234<br>Mitsuo<br>Nakamura | Electrical-Power | 2022/11 | <a href="https://www.jspe.org/member/wp-content/uploads/sites/2/2022/12/202211_PE_Electrical_Power.pdf">https://www.jspe.org/member/wp-content/uploads/sites/2/2022/12/202211_PE_Electrical_Power.pdf</a> |
| PEN-0232<br>Chika<br>Miwata    | Fire Protection  | 2022/10 | <a href="https://www.jspe.org/member/wp-content/uploads/sites/2/2022/12/202210_PE_Fire_Protection.pdf">https://www.jspe.org/member/wp-content/uploads/sites/2/2022/12/202210_PE_Fire_Protection.pdf</a>   |

Autumn 2022

2022 年 秋号

On Ethics: You Be the Judge  
The Limits of Campaign Contributions

倫理： あなたが審判  
選挙献金の限界

When is a campaign contribution  
considered unethical?

選挙献金はどこまでが倫理上で許される範囲か？

Team members Amelia Richardson, Jenna Schatz, and Trong Minh Vu submitted the winning entry in the 2022 NSPE Milton F. Lunch Ethics Contest on behalf of the University of Kansas Student Chapter of the Kansas Society of Professional Engineers(link is external). The winning team received a \$2,000 award from NSPE.

チームのメンバーである Amelia Richardson, Jenna Schatz, 及び Trong Minh Vu は Kansas 州 PE 協会の Kansas 大学支部を代表して 2022 年 NSPE Milton F. Lunch Ethics Contest に賞金論文を提出した。

NSPE から \$ 2000 の優勝賞金である。

### Situation

Engineer A is the president of a consulting engineering firm, Company XYZ, that provides engineering services for the public entities in its region. A significant percentage of the firm's work over the past ten years has been on behalf of County X. Each year, County X issues Requests for Proposals for upcoming projects. Company XYZ is regularly awarded one or more projects by the county. County Commissioner C (one of a commission of three) is facing a hotly contested race for reelection. County Commissioner C broadly solicits campaign contributions, pointing each potential donor to state statutes that provide the legal limits on campaign contributions. Engineer A decides to make a personal contribution in the amount of

### 状況

コンサルタント会社 XYZ はこの地域の公共団体に対しエンジニアリングサービスを行っている。PE A はこの会社の社長である。

この会社の過去 10 年間の主な業務は X 郡の代理業務である。

毎年 X 郡は次回のプロジェクトの募集を行う。

XYZ 会社はその地方のプロジェクトの一件もしくは複数件を通常受注していた。

三つの郡政委員会の一つの委員である C は再選のための選挙活動中である。

郡政委員である C は有権者に対し選挙応援の法的リミットを示す州法に配慮しながら、選挙の協力を依頼した。



\$2,500 to County Commissioner C's campaign, an amount that is within the statutory guidelines for campaign contributions. During the campaign, the list of contributors and amounts is made public as required by state law. Engineer B, who works for a firm that regularly competes with Company XYZ for County projects, notices that Engineer A's contribution was one of the larger amounts on County Commissioner C's donor list, and files a complaint with the State PE Board.

### **What Do You Think?**

Was Engineer A's campaign contribution ethical? Was Engineer B's complaint to the State PE Board ethical?

### **What the Winning Entry Said**

All engineers are expected to commit to and maintain the highest standard of honesty and integrity. In doing so, an engineer upholds the reputation of the profession, their company, and themselves. The National Society of Professional Engineers (NSPE) Code of Ethics is commonly used to guide engineers in what actions are ethical and unethical, though certain cases arise where the code does not provide a clear solution. This case, amongst many others in the past sixty years, questions the ethical limits of political campaign contributions made by engineers.

To answer the first question presented above, one must first consult similar cases presented by the NSPE Board of Ethical Review (BER). The earliest BER case

PE A は郡政委員 C の選挙献金として個人的に \$ 2500 の献金をすることを決めた。その額は選挙献金のガイドラインの枠内である。

州法により選挙活動中の献金者とその金額を公表する必要が有る。

郡のプロジェクトに関して XYZ 会社の競合で働いている PE B は郡政委員 C に対する PE A の献金は大口献金者の一人であると述べ、州の PE 委員会に申し出た。

### **あなたはどうか考えるか？**

PE A の選挙献金は倫理上問題ないか？

PE B の州の PE 委員会への訴えは倫理上問題ないか？

### **優勝論文の内容**

PE すべては最高水準の正直さと誠実さを約束し守り続けることを期待されている。

そうすることにより、PE は専門性及び会社と彼ら自身の評判を維持できる。

NSPE の倫理規範は、いくつかのケースでは明確な回答を示していないが PE の倫理的な行動と非倫理的行動の指針として広く用いられている。

過去 60 年の事例の中で本ケースは PE による政治運動の上限の献金問題を取り上げている。

最初の質問に関して、NSPE 倫理審査委員会の類似事例を参考にする。

初期の BER (Board of Ethical Review) の

dealing with political contributions by engineers is Case 62-12. In asking broadly about the ethicality of engineers making political contributions to the city, state, and federal agencies from which they may receive work, the BER determined that individuals could contribute to political campaigns on the basis of being below a "nominal" value and ensuring their intent was for supporting their political views. The nominal value set by Case 62-12 was \$100. In a later case, Case 73-6, the nominal value was scrutinized due to inflation and the differences in monetary impact for different government levels. It was then determined that in the absence of improper intent by an engineer, all donations were ethical, but donations larger than the nominal value of \$1000 were found to be unethical when the engineers then accepted contracts from the agencies they made the donations to.

Other cases dealing with political contributions, such as Case 88-2 and 75-13, further reinforced the previously held stances by the BER. Case 88-2, which dealt with a principal engineer who donated \$2000 to the media campaign of the county board chairman, ruled that engineers acting in good faith that made donations below the nominal amount were ethically allowed to perform work for the county following the contribution. Case 75-13 ruled that a group of engineers who individually donated money to a political action committee (PAC) were within their ethical rights to do so due to the remoteness between their

Case 62-12 は PE の政治献金を取り扱っている。市、州及び国の機関に政治献金を行い、その見返りに仕事を得る事に対しての倫理を取り扱っている。

倫理審査委員会の判断は、個人は政治献金を行うことは出来るが常識的な献金額以下であり、政治的考え方への支持にとどまることを明確にする必要がある。

Case 62-12 の場合、通常の献金額 \$ 100 である。別事例として Case 73-6 はインフレや行政のレベルにより通常の献金額を精査しなければならないと述べている。

PE に対する適切な指針がないので、すべての献金は倫理的であるが、常識的な献金額 \$ 1000 を超える献金を行い、地方の機関から契約を得る場合は、倫理範囲を超えてしまう。

NSPE 倫理審査委員会がその立場を明確にした政治的献金を取り扱っている他の事例として、Case 88-2 and 75-13 がある。

Case 88-2 では郡庁の理事長のメディアを使った選挙活動に主幹 PE が \$ 2000 を献金した。

このことは常識的な献金枠内であり誠意を持って行動する PE に対して、献金をした後でも郡の仕事することは倫理上問題ないとの見解である。

Case 75-13 では、個人から資金を募り献金する政治行動委員会へ PE のグループが個々に献金した事はプロジェクトの助成金と献金に関係が薄いので、倫理範囲内である。

contributions and project grants.

Looking at the facts presented in this case, it is difficult to know the intention of Engineer A's donation. Since there was no information provided of engineers from Company XYZ or Engineer A making previous campaign contributions to County X officials, and thus project awards have not indicated foul play (and have been solely based on merit), one could guess that the contribution from Engineer A was made in good faith to support County Commissioner C. However, one could also guess that Engineer A's contribution was made in hopes of receiving the same high number of projects for Company XYZ by helping with Commissioner C's re-election.

In utilizing the guidelines provided by previous cases and the facts of the case, Engineer A did not act unethically when contributing to the campaign due to both the lack of evidence of foul intent and the contribution following statutory guidelines. However, the donation of \$2500 that Engineer A provided exceeds the nominal value established by Case 88-2 of \$2000, and thus they would be acting unethically and risking violation of Sections II.5 and II.5.b if they take any projects from County X following the donation. Since it was stated that Engineer A's contribution was amongst the larger amounts, the nominal value may be considered below \$2000 for this situation, though further details about the contributions would be required.

It is important to note that engineers with

今回の事例の場合、PE A の意図は不明である。

なぜなら、XYZ 会社の PE 情報や X 郡当局に選挙献金を行った PE A の情報及びそのプロジェクトの裁定が違反行為に該当したか（献金に基づいた裁定か）の情報は無いので、このケースは PE A の献金が誠意を持って郡当局委員 C を支持する為に行なわれたものと推測できる。

しかしもう 1 つの見方としては、XYZ 会社が数件のプロジェクトの受注を期待した PE A の献金であろうと推測もできる。

先の事例による法的ガイドラインと今回の事例の事実から判断して、違法な意図や法的ガイドラインに沿った献金かの証拠がないので、PE A の献金は倫理に違反した行動ではない。

しかし PE A の支払った \$ 2500 の献金は、88-2 の事例に示す常識的な献金である \$ 2000 を超えている。

従ってもし、献金後 X 郡がプロジェクトを受注した場合 Sections II.5 と II.5.b の違反の危険性があり倫理的ではない。

献金の目的についてさらなる詳細を調べる必要があるが、献金の常識は \$ 2000 以下であるが、PE A の献金は高額献金グループに属する。

XYZ 会社の社長であるような主幹 PE の A は



senior positions, such as Engineer A who is described as the president of Company XYZ, should be cautious with donations to political campaigns. With elevated positions that hold more responsibility, it is as equally if not more important for such engineers to perform actions that leave no room for discussions of dishonesty. Engineers must uphold the integrity of the profession and follow Section III.1.e of the Code of Ethics while still being politically active individuals.

Case 02-11 presented by the BER can be utilized to help answer the second question of this case. In Case 02-11, an individual described as Engineer A filed an anonymous report to the state licensure board about the behavior of another engineer, Engineer B, that they believed was in serious violation of the Codes of Ethics. In discussing whether the action of filing the anonymous complaint was ethical, the BER decided that Engineer A followed Section II.1.f of the Code of Ethics and acted ethically if the state board had a method of reviewing anonymous complaints. The BER noted that they highly recommend engineers make official complaints [rather than] anonymous so individuals could know [who] is filing against them, but also prefer having anonymous complaints to no complaints at all.

Engineer B made an official complaint with the State PE Board rather than an anonymous complaint in the current case. It may have been beneficial for Engineer B to discuss his concerns privately with his

政治献金に対して注意を払うべきである。

一般の PE の行動であれば、不誠実か否かの議論は起こらないが高い立場の PE は重責を担う必要があるので倫理問題が発生する。

PE は個人的な政治活動を行うと共に、技術専門性の誠実さを維持し、NSPE の倫理規範 Section III.1.e を守らなければならない。

倫理審査委員会の事例 02 – 11 は今回の事例の 2 番目の質問の回答の指針になる。

倫理規範に明らかに違反していると考えられる PE B の行動を PE A は匿名で州の PE 資格委員会に個人的に申し立てをした。

匿名での申し立ては倫理的か否かとの議論に関して、倫理審査委員会は該当州が匿名の申し立てに対して審査を許容するのであれば、PE A は倫理規範 II.1.f に従っており、倫理的行動である。

倫理審査委員会は匿名より誰が申告したかをそれぞれの人が明らかにわかるので正式な申し立て（氏名を明らかにする）を推奨している。

しかし申し立てをしないより匿名での申し立ての方が良い。

本事例の場合、PE B は匿名ではなく正式の申し立てを州の PE 委員会に行っている。

それは PE B が本件に関して申し立てをする前に上司やさらに上の役職と相談できるメリットがある。

supervisor or higher-ranking officials in this company before reporting the concern, but Engineer B did not violate the Code of Ethics by filing a complaint. Engineer B reported his concern to the state licensure board, the appropriate reporting authority for this case, and followed Sections II.1.f and III.7. Engineer B additionally avoided untruthfully damaging the reputation of Engineer A by keeping the matter private between themselves, the State PE Board, and Engineer A while the concern is investigated. The intentions behind Engineer B's complaint may be questioned since it is known that Engineer B and Engineer A work for competitive firms, but there is not enough proof to show malicious intent and a violation of Sections III.6 and III.7.

### **Conclusions**

Engineer A's campaign contribution was ethical. However, it would be unethical if Engineer A and Company XYZ receive projects from County X following the donation due to Engineer A's contribution exceeding a nominal value.

Engineer B's complaint to the State PE Board was ethical.

### **NSPE Code References**

Section II.5 - "Engineers shall avoid deceptive acts."

Section II.5.b - "Engineers shall not offer, give, solicit, or receive, either directly or indirectly, any contribution to influence the award of a contract by a public authority, or which may be reasonably construed by the public as having the effect or intent of influencing the awarding of a contract. They

PE B の申し立ては倫理規範から逸脱していることはない。

PE B は倫理規範 II.1.f 及び III.7 にもとづき、本事例の報告の適切機関である州の資格委員会に彼の懸案事項を報告した。

PE B は更に本申し出の審査中に、情報が州の PE 協会と PE B と PE A のみに留め、PE A の評判に傷をつける不誠実な行動にならぬように配慮した。

PE B と PE A は競合会社で働いており、PE B の申し出の意図が論点となる。

しかし、悪意や、倫理規範 III.6 及び III.7 に関する違反を示す十分な証拠はない。

### **結論**

PE A の選挙献金は技術者倫理に違反はしていないが、PE A の常識的ではない額の献金により PE A や XYZ 会社が郡 X のプロジェクトを受注した場合は、倫理違反となる。

PE B の州の PE 協会への申し出は技術者倫理に違反していない。

### **NSPE 参考規範**

Section II.5 PE は不正行為を避けなければならない。

Section II.5.b PE は公共事業の契約の裁定に影響を及ぼすもしくは、契約の裁定に影響を来すと市民が容易に推測できる、いかなる寄付や寄贈を直接もしくは間接的に提供したり与えたり、依頼してはならない。PE は仕事を確保するために、いかなる贈答もしくは高価な有価物を提供してはならない。

shall not offer any gift or other valuable consideration in order to secure work. They shall not pay a commission, percentage, or brokerage fee in order to secure work, except to a bona fide employee or bone fide established commercial or marketing agencies retained by them.”

Section II.1.f – “Engineers having knowledge of any alleged violation of this Code shall report thereon to appropriate professional bodies and when relevant, also to public authorities, and cooperate with the proper authorities in furnishing such information or assistance as may be required.”

Section III.1.e. Engineers shall not promote their own interest at the expense of the dignity and integrity of the profession.

Section III.6 – “Engineers shall not attempt to obtain employment or professional engagements by untruthfully criticizing other engineers, or by other improper or questionable methods.”

Section III.7 – “Engineers shall not attempt to injure, maliciously or falsely, directly or indirectly, the professional reputation, prospects, practice, or employment of other engineers. Engineers who believe others are guilty of unethical or illegal practices shall present such information to the proper authority for action.”

PEは仕事を確保するために手数料、分け前もしくは仲買手数料を支払ってはならない。

ただし、PEが契約している正社員、商社もしくはマーケティング代理店に対してはこの限りではない。

Section II.1.f エンジニアが本規範に違反すると疑われる事を知っている場合、適切な専門の機関に報告しなければならないし、関連があれば公共機関にも報告しなければならない。

さらに適切な機関にその情報を提供し、必要な協力を行わなければならない。

Section III.1.e 技術者は、技術者の専門性の威厳と誠実さを損なうような個人の利益優先を行ってはならない。

Section III.6: PEは不当に他のPEを非難したり、他の不適切もしくは疑問が残る方法により、雇用や、昇進もしくは専門的契約を行おうとしてはならない。

Section III.7 エンジニアは他のエンジニアの職務的評判や可能性、実務もしくは雇用を、直接もしくは間接的に、偽りや悪意を持って傷つけることを企ててはいけない。

エンジニアは、他人が非倫理的で非難されるか、違法な行為を行っている信じられる場合には、その情報を適切な機関が行動するために提供しなければならない。



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|--|--|
| More You Be the Judge Articles                         | “あなたが審判の” 参考記事   |
| The Limits of Campaign Contributions (September, 2022) | The Limits of Campaign Contributions (September, 2022) |
| A Personal Choice (May, 2022)                          | A Personal Choice (May, 2022)                          |
| Eye in the Sky (January, 2022)                         | Eye in the Sky (January, 2022)                         |
| Conflicted Loyalties? (October, 2021)                  | Conflicted Loyalties? (October, 2021)                  |
| The Ethics of Extending, Receiving Credit (July, 2021) | The Ethics of Extending, Receiving Credit (July, 2021) |

|  |                |
|--|----------------|
| Translate PE0081 H.Kanno               | 翻訳 PE0081 神野   |
| Translation Supervisor PE0010 H.Hirose | 監訳 : PE0010 廣瀬 |

**<Ethics reviewer’s comments on this NSPE article>**

The case of giving bribes in return for orders was introduced in the April issue of JSPE magazine, but this time it is a discussion about the reward for political contributions. Many US PEs are engineers at the sole proprietorship level, and such cases are controversial. Many of Japan's engineers work for corporations, and private campaign contributions rarely lead to orders. On the other hand, in Japan, mid-year and year-end gifts used to be popular, but recently they have declined sharply. In light of this case, ethics seems to have improved.

This time, from the October and December issues of NCEES' web magazine "Licensure Exchange", in particular, the Japan P. E. , Here are some topics that may be useful for PE examinees.

[October-2022-LEx-flip-1.pdf \(ncees.org\)](#)

[December-2022-LEx-flip.pdf \(ncees.org\)](#)

NCEES has announced its CEO succession plan. **David Cox will retire effective October 1, 2024, and current COO Davy McDowell (PE) will replace CoX.** Mr. McDowell has been with NCEES since 1999, becoming a Test Development Engineer, Director of Professional Services, and COO in 2009. As COO, he has supported the CEO in executing the decisions of the Director Board and served as a liaison between NCEES and the licensing committees of member state boards. During his career, he has contributed significantly to managing the exam question development process and facilitating the validity of engineer and surveyor licenses in more areas.

Well, this time I would like to introduce this article.

1. **Debate at the 101st NCEES Annual Meeting** (Oct. pp.1, 3 "Delegates debate the issues at 101st NCEES annual meeting")
2. **New President Duhamel's Vision** (October pp.2-3 "Duhamel accepts presidency, outlines vision for the year")
3. **Advancing Mission and Vision** (December issue pp.2-3 "Advancing the mission and vision")

### 1. Discussion at the 101st NCEES Annual Meeting

On August 23~26, the NCEES Annual Meeting was held in Carlsbad, California, for the first time since 2019. In keeping with custom, we confirmed the appointment of Christopher Duhamel, who is now President, and elected Laura Sievers (P.E.) of the Iowa Board as President-elect to serve as President starting in the 2023 Annual Meeting. The photo shows the members of the Director Board for the current term. Second from the left in the front row is Mr. Duhamel and second from the right is Mr. Sievers.



*2022-23 NCEES board of directors—(l-r) Standing: Bostelman, Orsich, Zoutewelle, and Qureshi. Sitting: Tyrell, Duhamel, Sievers, and Robertson*

NCEES board members for the 2022-2023 period. Mr. Duhamel is second from the left in the front row, and Mr. Sievers is second from the right.

Centered on the new board members, we will work on the following initiatives.

- ① Appointment of lay members to any position on the NCEES Board of Directors
- ② Model Law Updates

③ Examination fee increase

**Bringing the perspective of ordinary members to board deliberations**

The NCEES Member Licensing Committee approved a motion from **the Advisory Committee to allow lay members to hold any position on the NCEES Board of Directors**. Currently, ordinary members are eligible to serve as treasurers only. The motion will be submitted by the Special Committee to the 2023 Annual Meeting. Public representation is recognized in most jurisdictions within the Council and is a valuable element of the licensing committee's deliberations," said Dr. David Whitman, P.E., Chair of the Council Activities Advisory Committee.

**Unified PE and PS experience requirements**

Several changes will be referred to the Legislative Guidelines Committee for incorporation into the Model Law. Of particular note is the **change that separates the Surveying Experience requirement from the Principles and Practice of Surveying (PS) exam requirement**. Although this action has already been taken in Engineering Principles and Practices (PE), this **change allows P. L. S. and P. E. unifies the treatment of experience requirements**. The Board will vote on final approval to incorporate these changes into the Model Law at its 2023 Annual Meeting.

**Fiscal crunch leads to increase examination fees**

One of the major points that affects Japan examinees is that: **NCEES exam fee will be increased** That's it. Even now, the yen is weak, and I think it is a recognition that it is quite expensive for examinees. Trials are NCEES' primary source of revenue, but as shown in the table below, it is only at the last minute whether the price increase will still be profitable. I imagine that we will probably focus on cost cutting in the future. **The new exam pricing will take effect on January 1, 2024.**

| <b>NEW PRICING</b>                | <b>FE</b> | <b>FS</b> | <b>PE</b> | <b>PS</b> | <b>*PE STR</b> |
|-----------------------------------|-----------|-----------|-----------|-----------|----------------|
| Price Per Exam                    | \$225     | \$225     | \$400     | \$375     | \$350          |
| Cost Per Exam                     | \$254     | \$279     | \$327     | \$362     | \$465          |
| Gain (Loss) Per Exam              | (\$29)    | (\$54)    | \$73      | \$13      | (\$115)        |
| Current Price %/<br>Cost Per Exam | 89%       | 81%       | 122%      | 104%      | 75%            |

New examination fee effective from January 1, 2024

\*price per section

**2. New President Duhamel's Vision**

At the NCEES Annual Meeting, Christopher Duhamel (P.E., P.L.S.) of Rhode Island was sworn in as Chairman. In his inaugural address, he said, "The council **is made up of volunteers who serve on each state board, and you have made many sacrifices with your determination to serve**. But I also know that it's very rewarding. It is a great honor to be appointed by your governors. And it's **an even greater honor to be able to promote licensing throughout the year and serve our profession and the public**."

**Four Key Areas**

Duhamel spoke of **four key areas: (1) propaganda, (2) supporting members of the armed forces, (3)**

**license mobility (liquidity), and (4) addressing threats to public protection.** All of the authors (Suzuki) have the impression that the expansion of licenses to engineers is facing headwinds, and that this is an initiative with a considerable sense of crisis.

**(1) Publicity: We will support the creation of promotional pilot programs for FE Ambassadors on five university campuses.** These ambassadors are current engineering students and will be responsible for promoting their FE exams and licenses to their fellow engineering students on campus. We will also focus on advertising activities to increase the number of entrants into the surveying industry. A recent marketing study has identified opportunities that can work with high school guidance counselors to educate them about the surveying profession and better guide students toward surveying careers. That same study also revealed the need to provide training for effective engineering and surveying outreach activities.

**(2) Assisting Armed Forces Members: We will make it possible for active military members and their spouses to obtain licenses free of charge through the recording program when they move to a new state by military order.** We also help military members take up civilian engineering and surveying jobs after they are discharged.

**(3) License Mobility (Liquidity): Mobility** initiatives that ensure the smooth activation of licenses in multiple states remain a priority. **Have each member state board review its rules to identify obstacles to the committee license (the process of validating a license obtained in one state in another state).** If it doesn't affect public protection, we'll encourage you to eliminate it.

**(4) Addressing threats** to public protection: There continues to be a move to reduce the areas where licensees must do so, which could pose a threat to public protection. **It is important to work together to address legislative efforts that undermine public health, safety, and well-being.** To this end, we will work with the Alliance for Responsible Professional Licensing (ARPL, <http://www.responsiblelicensing.org/>).

### 3. Advancing our mission and vision

Just as NSPE and JSPE activities chant "Engineer's Creed", NCEES Board meetings always begin with reciting the organization's vision and mission (reciting is a high hurdle). A key element of both vision and mission is to provide leadership in licensing engineers and surveyors to protect the health, safety and well-being of the public. Mr. Duhamel, Chairman of the Term (P.E., P.L.S.) describes leadership from various perspectives.



**CHRISTOPHER DUHAMEL, P.E., P.L.S.**  
NCEES PRESIDENT

NCEES Duhamel, President discusses leadership and key initiatives.

### Promoting License Mobility is a Basic Principle of an Organization

Last year, **a board of state board members was asked to evaluate its rules and laws to identify obstacles to interstate license mobility.** As a result, we objectively reviewed the requirements from the perspective of applying for a license for the first time and assessed the fairness of the process. For example, Duhamel's Rhode Island County has also identified a range of process challenges, and under the chairman's leadership, they have reviewed all licensing paths, switched to online submissions, clarified or eliminated questions, and streamlined the process. NCEES will also improve the processes stipulated in Model Law with the aim of accelerating the review process.

Another challenge to mobility has to do with international licensing. NCEES is a contributing member of the International Engineering Alliance (IEA). The IEA held a workshop in Killarney, Ireland in October to evaluate ways to promote mobility. **The workshop confirmed the promise that international mobility can be achieved with the leadership and support of NCEES.**

**This movement is reflected in the Japan P. E. (and engineers) It will be related to the future position of (engineers),** so it is necessary to pay close attention.

#### **Promoting licenses through advertising activities**

This year's budget allocated funds to FE Ambassador programs at five pilot schools (see above). FE Ambassadors are student leaders with the ability to promote FE exams on campus through campus events and social media. More acceptance of the license is expected once explained by the student mentors. This may be a hint for PE promotion activities in Japan.

In addition, the FE and FS **Honor Codes (author's note: ornaments made of mesh cord worn at graduation ceremonies) given to students who pass the FE and FS exams before graduation are also very popular.** We have also launched digital badges for candidates who have passed the FE or FS exam. These digital badges can be displayed to recognize students' grades and path to obtaining a license, and can be used for job hunting, social media, etc.

#### **Partnerships with specialized organizations**

The Board is looking for new opportunities to partner with professional organizations that will help promote the importance of licensure to protect public health, safety, and welfare. Examples of partners that can expand access to potential professional engineers and surveyors include the American Council of Engineering Companies, the American Society for Engineering Education, the National Society of Professional Engineers (NSPE), There are National Society of Professional Surveyors (NSPS), reciprocal messages, podcasts, or publications.

These initiatives are supported by JSPE in the Japan P. E. It seems to be helpful in popularizing the use of.



## What we can see through NSPE's activities

PE-0002 Kazuo Takemasa

### 1. Initiatives for Addressing the Global Environment

In the United States, this year is the year of the midterm elections, and in November, the Biden administration received a certain answer that it had managed to hold on to the will of the people. The Biden Democratic administration is approaching its second year in office. In the previous Republican administration, President Donald Trump took office six years ago, and immediately after taking office, he announced and implemented an international agreement to protect the global environment, the Paris Agreement (the 21st session of the Conference of the Parties to the United Nations Framework Convention on Climate Change), and COP21. The reason is that the ICPP (International Conference on Parallel Processing) warning of greenhouse gas emissions for global warming is completely fabricated and false, and it immediately withdrew from the treaty as nothing more than an arrangement that harms U.S. industry. In the meantime, in the United States, California and other liberal-minded states have enacted state laws in line with the Paris Agreement, and global environmental problems have been tackled on a state-by-state basis. Then, two years ago, following the revival of the Biden administration, the United States returned to the Paris Agreement. The Biden administration will continue its confrontational stance against the Chinese Xi Jinping administration, which has adopted authoritarian policies, and will not relax the hardline confrontational policies adopted by the Trump Republican administration, especially economic sanctions, while providing a forum for discussion on this global environmental response. The U.S. and China have agreed to cooperate and respond.

The Biden Republican administration was restored, and in January 2020, the AIM Act (American Innovation Manufacturing Act) was introduced to Congress and enacted. In order to concretely express this new approach to global environmental problems, it shows a schedule for abolishing HFC gas, a greenhouse gas, almost in line with the Kigali Accords of the Montreal Protocol.

This time, in response to the changes in U.S. policies that have renewed efforts to combat global warming, why is it necessary to respond to global warming in U.S. society, "Why is domestic opinion divided, and the country's response fluctuates violently every time the administration changes?" In the United States, what kind of opinion does the NSPE have on this disjointed policy of the government, and what specific response will it take? I would like to think about the movements of associations and engineers and their problems.

### 2. NSPE's Initiatives to Address the Global Environment

In October 2022, NSPE took global environmental issues as one of the main themes of the association's activities. When the former Trump administration decided not to participate in the international response to the issue of global warming as fake news, the NSPE did not bring this issue to the forefront. In response to the problem of global warming, there is a political theme among international nations in which developed countries, which have been striving for modern civilization first, have an obligation to take the lead in developing industries and social systems to control greenhouse gas emissions in industry and society in general, and to provide them to developing countries whose societies will modernize in the future. In the United States, there is a deep-rooted opinion among European countries that the United States is relatively new to European countries in modern civilization, and that it is unreasonable for the developed country to bear the burden of obligations for the time being on this difficult task. In any case, the role of scientists and engineers in this theme seems to be significant. In particular, financial support for scientific analysis and new technology development to solve problems is unthinkable without the United States.

The decision taken by NSPE was made by Member P.E. It is encouraging that we are calling on future generations to be "Good Stewards" for protecting the global environment.

P. E. Each engineering department conducts design activities on a daily basis, and as a result, is responsible for making the world sustainable and resilient. NSPE is committed to various environmental protection activities in the United States. E. It has declared that it will promote its participation. In particular, environmental problems are complicated by the interests of various organizations such as environmental organizations, various industry business groups, and NPOs, and it is difficult to promote them while maintaining a sense of balance in their activities. P.E. The role will become increasingly important, he said.

In addition, in parallel with environmental problems, another P. E. As an important related theme, the qualifications and scope of roles of engineers should be reviewed as an issue that should be reviewed in P.E. It is spreading in the technical community, including: In 2016, several volunteer engineers gathered to meet the current P. E. and private communities are emerging to address and discuss the challenges faced by qualified engineers. P. E. In addition, full-time engineers, scientists, software-related designers, etc. involved in new technologies gather as volunteers to discuss solutions to new technical issues. One of them is the establishment of a group called "Engineering Change Lab USA" (hereinafter referred to as ECL-USA), and discussions have begun on how to match the needs of society with "future licensed engineers." NSPE supports this activity and promotes the current P. E. should take leadership and promote it. ECL-USA spontaneously launched as a volunteer activity and "global environmental problems" along with "Industry 4.0" is one of the themes that must depict the ideal future of engineers.

### **3. Current Challenges for Engineers Covered at Engineering Change Lab USA , November 27**

He introduced the movement of a group of full-time engineers in the United States to hold a meeting to think about how to respond to the theme of technological issues in industry and make proposals to society. ECL-USA also takes up the social response issues faced by full-time engineers themselves as an issue. In this way, it is precisely because full-time engineers are constantly conducting self-reflective examinations that efforts and proposals can be implemented to solve problems in the general public. P.E. ECL-USA will look at the social issues facing professional engineers.

Engineers who hold various licenses in the United States are not necessarily engineers within large companies. It can be said that most of them are people who work in small and medium-sized organizations that work on regional problems in each state. They are engineers who are engaged in different jobs in different industries. It is surprising that these people, as private volunteers, have formed voluntary councils and started activities to coordinate the issues of professional engineers in American society.

One such congregation is the Engineering Change Lab USA.

This is a list of recent themes that professional engineers will work on in the near future. They are the following items.

- 1) **Macro-Ethics** in addition to the traditional focus on Micro-ethics
- 2) Mastery of **Critical Thinking and System Thinking skills**
- 3) Consideration of **Modular Regulatory Systems** in addition to single license model
- 4) Moving to an **Agile and Adaptable System**
- 5) Shift to a system based on **Credential Demonstrated through a Portfolio or Peer Review**
- 6) Emphasis on the importance of **Lifelong Learning**
- 7) Addition to **Inter-Disciplinary Licensure** to the current single discipline model
- 8) Consideration of **Team-or-Project based Licensure** to address emerging technologies
- 9) Moving from state-based licensure to a **Blended System of Self-regulation, State and National.**

The above is P. Smith, who is currently active in Japan. E. A very important issue has been proposed, which also applies directly to this issue. What is characteristic of the summarized content is the conventional P.E. The knowledge and skills acquired by qualified engineers have been more focused on enhancing their expertise at the individual level, but with the advent of the information and communication society, the products, facilities, and services created using technological achievements have become more widespread and have a greater impact on human society. Expertise suggests that it is necessary to acquire a broader macro perspective and hone the skills of activities within a wider group.

Today, since technical deliverables are organically connected globally, it is also necessary to strengthen systems thinking. In addition, portfolio, critical thinking, agile, team building, etc., so-called project thinking required of PMPs within Project Management are required.

Ethical thinking and judgment are required to respond to global environmental problems and the global wide society represented by the SDGs. It also shows that there is a stronger need for the formation of peer groups and self-improvement that do not rely too much on established institutions and organizations, such as peer review and life-long learning.

What amazes American society is the private sector P.E. and various licensed engineers to set up rallies in the form of grassroots civic movements against changes in the global technological environment. In Japan Japan, it is common to conduct symposia organized by government advisory bodies and laboratories that specialize in social technological trends at universities using subsidies, and special surveys in which such activities are launched in response to requests from government offices that require reports at corporate think tanks. Unfortunately, in this form, front-line engineers working in the field are rarely seen, and the results that are subsequently brought about tend to be all-out and ineffective.

#### **4. American Innovation of Manufacturing (AIM) Act**

Let's go back to global environmental issues in the United States. When President Trump was elected six years ago, he immediately withdrew from the Paris Agreement, to which the previous Obama administration had subscribed, claiming that global warming was a false fact fabricated by scientists. It is no exaggeration to say that during the four years of the Trump administration, the United States' efforts to reduce greenhouse gas emissions virtually stopped. The Biden administration was inaugurated in the 2020 presidential election, and CO2 emissions, which promote global warming, and gases that contribute significantly to global warming were again regulated, from production to use and emissions. This is the law that was born there, AIM A CT. The U.S. Environment Agency (EPA) took the lead in formulating a greenhouse gas reduction plan in the United States based on the Kigali Accords, which are specific greenhouse gas reduction schedules proposed by the IPCC.

| Common Name  | Exchange Value* |
|--------------|-----------------|
| HFC-134      | 1,100           |
| HFC-134a     | 1,430           |
| HFC-143      | 353             |
| HFC-245fa    | 1,030           |
| HFC-365mfc   | 794             |
| HFC-227ea    | 3,220           |
| HFC-236cb    | 1,340           |
| HFC-236ea    | 1,370           |
| HFC-236fa    | 9,810           |
| HFC-245ca    | 693             |
| HFC-43-10mee | 1,640           |
| HFC-32       | 675             |
| HFC-125      | 3,500           |
| HFC-143a     | 4,470           |
| HFC-41       | 92              |
| HFC-152      | 53              |
| HFC-152a     | 124             |
| HFC-23       | 14,800          |

| Year                    | Consumption & Production Allowance Caps as a Percentage of Baseline | Estimated Consumption and Production Allowance Caps in MMTEVe* |
|-------------------------|---|--|
| <b>Baseline</b>         | <b>Consumption: 303.89 MMTEVe<br/>Production: 382.55 MMTEVe</b>     |  |
| <b>2020–2023</b>        | 90 percent  | Consumption: 273.5<br>Production: 344.3                        |
| <b>2024–2028</b>        | 60 percent  | Consumption: 182.3<br>Production: 229.5                        |
| <b>2029–2033</b>        | 30 percent  | Consumption: 91.2<br>Production: 114.8                         |
| <b>2034–2035</b>        | 20 percent  | Consumption: 60.8<br>Production: 76.5                          |
| <b>2036 &amp; after</b> | 15 percent  | Consumption: 45.6<br>Production: 57.4                          |

\* Baselines and caps are expressed in million metric tons of exchange value equivalent (MMTEVe), which is numerically equivalent to one million metric ton of CO<sub>2</sub> equivalent (MMTCO<sub>2e</sub>).

Currently, the standards for the refrigerants shown in the above table and the safety standards for using them, which are designated as greenhouse gases used by industrial associations around the world, are practically the global standards established by the American Society of Refrigeration and Air Conditioning Engineers (ASHRAE) in the United States, and there is no doubt that the National Refrigeration and Air Conditioning Industry Association (AHRI) is the world's largest industrial association in this field. The fact that the U.S. has set a deadline for reducing CO<sub>2</sub> emissions in response to global warming means that global greenhouse gas reduction plans will move forward faster and more reliably. This is a major event not only for developed countries that have been obliged to take the lead in reducing emissions, but also for developing countries that are obliged to follow suit.

It is of great significance that not only the U.S. Environment Agency (EPA) and the environmental departments of state governments, but also related engineering associations are working synchronously. In this way, in the United States, there is often a great deal of debate about social issues, but once a policy is decided, it moves toward its realization with great force. Here, too, P.E. who is active in technology in American society. It can be said that there is an environment where the direction of activities is clear, easy to understand, and easy to work on.

In this way, engineers associations have been established in many industrial fields in the United States. Many professional engineers are involved in the management of the association. Even in the aforementioned ASHRAE, specialized engineers (P. E. It has become a place of activity. Originally, the name of the association itself is more natural than being the Association of Engineers. In addition, a system has been established to solicit public comments as a public institution for draft standards and regulations developed by staff with specialized knowledge of public institutions such as the U.S. Environment Administration (EPA). When submitting opinions and wishes on draft regulations and standards submitted by leading companies in the industrial world and industrial associations, it is also an important role of professional engineers to summarize and submit opinions on behalf of the organization by specialized engineers in each technical field.

So far, in the United States, technology, especially for social issues that require expertise, is covered by specialized engineers (P. E. I have stated that it is operated mainly by the company. In the United States, there are different specialties in the general society. E. Groups that gather and discuss, and P. E. There are many professional engineering companies that make use of their expertise. In particular, technician projects that occur in each state and metropolis district are subject to the local P. E. The company undertakes the work on a case-by-case basis. In Japan Japan, lawyers and certified public accountants are engaged in similar social activities, so I think you can understand this form. Accordingly, P. E. requires strict ethics regarding the technical content itself. At the same time, an understanding of social business practices and business ethics are also required.

## **5. Japan Initiatives in Japan**

In Japan, Japan has also been warned about global warming by the International Conference on Parallel Processing (ICPP), and plans are being prepared to implement the Kigali Accord Plan, which is the guiding principle for action. The promotion base is the Ozone Layer Protection Promotion Office of the Ministry of Economy, Trade and Industry. Some universities and companies belonging to industrial associations who claim to be experts have examined the contents and decided on a plan. In accordance with this plan, the production of greenhouse gases and their use in equipment have been revised to include measures against greenhouse gases in part of the contents of the Ozone Layer Protection Law. During this time, there is no evidence of discussions among related engineers. The company aims to reduce the average consumption of HFCs by 40% by 2025 with the target of average HFC consumption from 2011 to 2013. Fortunately, this target is apparently being achieved. However, for the 70% reduction in FY2030, there is still no concrete prospect of technological development to achieve the target. As a result, confusion in various industries and industrial associations is deepening.

So, is global warming countermeasures really necessary in Japan society? If the earth warms, what are the disadvantages and advantages of the Japan archipelago? I do not think that discussions based on the analysis of general specialists were sufficiently conducted. Unfortunately, I have not seen much analysis of the impact of global warming on domestic social life by specialized organizations. Since international organizations are setting out the direction, they have taken it as a correct theory. Under these circumstances, the public cannot understand the advantages and disadvantages of global warming for the Japan archipelago. As a national interest, it seems that a system has been established in which people follow the plan decided by international organizations without discussion, and as citizens, follow the plan decided by the national organization without consideration. The role of expertise will be focused on how to carry out this plan safely.

I have no doubts or objections that the role of professional engineers in Japan is expected to play a role in relieving this burden, and I am not interested in the scientific accuracy, certainty, and accuracy of the overall picture of the goal. This makes both technical knowledge and technical ethics useless.

I would like to take this opportunity to review whether this global environmental problem has become a symbolic phenomenon of the lack of interest in scientific and technological issues in advanced society among professional engineers currently active in Japan.

(References)

1) U.S. ENVIRONMENTAL AGENCY (EPA) WEBSITE:

[https://www.opteon.com/en/-/media/files/opteon/opteon\\_aim\\_act\\_infographic-r11\\_11192021.pdf?rev=d4f1039a2f404f9b92fd040c2d73c6f5&hash=0EE354BD598712978E06D47457941D9C](https://www.opteon.com/en/-/media/files/opteon/opteon_aim_act_infographic-r11_11192021.pdf?rev=d4f1039a2f404f9b92fd040c2d73c6f5&hash=0EE354BD598712978E06D47457941D9C)

2) Engineering Change Lab USA :

<https://ecl-usa.org/>

3) HP of the Ozone Layer Protection Office of the Ministry of Economy, Trade and Industry

[https://www.meti.go.jp/policy/chemical\\_management/ozone/index.html](https://www.meti.go.jp/policy/chemical_management/ozone/index.html)



I participated in JSPE's Innovation Management (IM) study group and took this course to systematically learn IM. It is a MOOC (Massive Open Online Course) provided by Erasmus University Business School in the Netherlands, and uses the Coursera platform. Several professors and researchers at the university are in charge of the lectures.

The course is composed of watching video lectures of about 20-30 minutes per week over a period of 8 weeks. There are 4 choice questions and written assignments (about 400 words) each week, and a final test in the ninth week. Written assignments are scored by other participants, and you also score other students' assignments, making it a somewhat interactive system. If you score more than the specified score on a series of tests, you will pass, and if you pay an additional \$50, you will receive a certificate of completion. All lectures are in English, but there are subtitles, and you can stop in the middle and play them as many times as you like, so you can fully understand them if you spare no time.

It deals with IM broadly, shallowly, systematically, and comprehensively, and is very suitable for those who are studying the field for the first time to grasp the whole picture. The explanations are thorough and easy to understand, and there are many explanations with examples, which promotes understanding. In addition, books and papers related to management theory are introduced, so that those who are interested can study it more deeply.

The findings gained in this lecture and my impressions (personal opinions) based on them are described below.

- IM is a mature and effective management theory.
- Based on the premise that "people are innovatives by nature," he emphasizes the importance of creating an environment in which innovative abilities can be demonstrated (an environment that does not inhibit them).
- Diversity in organizations and teams is also very important in order to draw out diverse ideas. Diversity is more important not only in superficial things (race, gender, etc.), but also in internal things (ideas, orientations, values, etc.).
- There are also established tools such as Portfolio Management and Stage Gate that sift through a large number of ideas (e.g., new business ideas) and selectively invest resources (human money) into projects with a higher potential.
- The reason why innovation does not occur in general Japan companies despite the existence of IM tools is that the tools are not used appropriately due to the following factors.
  - Socio-cultural factors (stakes are hammered, peer pressure, dissenting with superiors is prohibited)
  - Qualities of a manager (lack of knowledge and practical experience in management theory such as IM)
- Regarding socio-cultural factors, education at home and school, and regarding the qualities of managers, we believe that there are distant causes in personnel evaluation systems and the Galapagos-like market of Japan (depending on the industry).

If you want to know the syllabus of the course, please access [here](#).

This is a corner where J SPE members introduce books in fields that are deeply involved. We look forward to your contributions.

[The Fearless Organization - Creating Psychological Safety in the Workplace for Learning, Innovation, and Growth](#)

[\(Translated by Tomoko Nozu by Amy C. Edmondson, published by Eiji Publishing in 2021\)](#)

This is the original book of the word "psychological safety" that we have come to hear a lot recently.

The author, Edmondson, who studies organizational behavior at Harvard University, has been focusing on "teams" and "psychological safety" since the 1990s and explaining the relationship between them. At the end of the book is a commentary by Professor Murase of Waseda University, which tells us that the term "psychological safety" was first proposed in the author's 1999 paper. It can be seen that the author focused on psychological safety long before Project Aristotle, which Google launched in 2012 and concluded in 2015 that psychological safety is an important factor in increasing labor productivity.



This book is divided into three parts: Part 1, "The Power of Psychological Safety," which focuses on the trajectory of the author's research, Part 2, "Psychological Safety in the Workplace," which explains that avoidable failures can become a reality if psychological safety is not ensured, and Part 3, "Creating a Fearless Organization," which explains how to create an organization that ensures psychological safety.

Trust is the cognitive and emotional attitude that an individual has for a particular subject, while psychological safety refers to the attitude toward the workplace that is created when the majority of a group shares, so the two are similar and different. He argues that the psychological safety of teams promotes team learning, improves team performance, and leads to innovation.

In organizations where psychological safety is not ensured, (1) the risk of major failures increases due to the concealment of information; (2) Organizational learning is not possible, and innovation does not occur. This is very convincing because many organizations in Japan have no psychological safety and no innovation, as evidenced by recent scandals involving Japanese companies. However, psychological safety seems to be a necessary but not sufficient condition for innovation. It seems that the major premise of this book is that "people are inherently innovative, and anyone can demonstrate innovation as long as there are no obstacles," and I still feel that I will not be disappointed.

(PE-0083 Hidemi Yanagi)

[Lead and Disrupt : How to Solve the Innovator's Dilemma](#)  
[\(Charles A. O'Reilly, Michael L. Duschman, translated by Noriko Watanabe, published by Toyo Keizai Inc. in 2019\)](#)

Speaking of innovation, Professor Christensen's bestseller "The Dilemma of Innovation" is famous, but this book explains the management theory of "ambidextrous management," which is positioned as the most important theory of innovation research worldwide, with abundant examples. "Ambidextrous management" is a management theory that simultaneously performs two actions: "exploring (knowledge)" to explore the possibilities of new businesses and "deepening (knowledge)" to further refine existing businesses.

The authors are co-authored by Professor O'Reilly of the Stanford Graduate School of Business and Professor Tushman of Harvard Business School, who specialize in leadership and organizational change. In addition, Associate Professor Akie Iriyama of Waseda University Business School and Kazuhiko Tomiyama, Chairman of IGPI Group, Inc. gave additional explanations.



The book is organized into three parts: Part I, which explains important management theories related to ambidextrous management and innovation, Part II, which introduces examples of companies in a wide range of fields that have practiced ambidextrous management, and Part III, which proposes rules and rules for practicing ambidextrous management. I read the first edition, but now an expanded and revised version has been released, which reinforces the content.

The book states that the following points are important for the implementation of ambidextrous management.

The first is to determine the necessity of ambidextrous management from the perspective of strategic importance. At the stage of implementing ambidextrous management, it is necessary to determine whether or not to utilize the assets and organizational capabilities (dynamic capabilities) of the existing organization that will give the exploration business (new business) a competitive advantage. In addition, the active involvement and support of management is also essential so that exploration businesses (new businesses) are not seen as threats or waste of resources from deepening businesses (existing businesses).

In addition, by having a common vision and values, it is necessary to justify the need for cooperation from the deepening project for the exploration business, and to share the management resources of the deepening business. As a result, the search business organization contributes to improving the business success rate by conducting experiments that are impossible on its own.

My impression of reading this book was that it was difficult to read because it was an academic description, but I was disappointed with the content of management theory and how to realize ambidextrous management. On the other hand, it was often concluded that the prerequisite for the realization of ambidextrous management depended on the leadership of top management. Therefore, from the standpoint of middle management, I felt

that it is necessary to continue to consider and discuss how we can contribute to the realization of ambidextrous management.

(PE-0257 Masahiro Sakahira)

## 8.2 Engineering close at hand

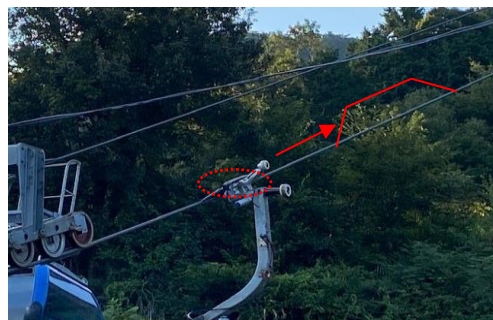
This is a corner where you can introduce the excitement of discovering engineering in something casual and encountering engineering equipment and methods that make you growl.



NSPE PECON was held in Philadelphia, and its downtown one piece at the Franklin Museum. Among the exhibits related to Benjamin Franklin, the founder of electricity, you can experience the progress of lighting. From the left, you can feel how much the power (human power) required for lighting is reduced by turning the steering wheel with incandescent lamps, fluorescent lights, and LEDs. This kind of exhibition is great because even children can experience the progress of science and technology. (PE-0253 Toko Nishikubo)



One piece at the baggage crane at Philadelphia International Airport. If you look closely, when the suitcase falls from the crane, if the sensor detects that there is a load at the planned drop position, it waits until the luggage goes too far. This is another example of engineering responding to social needs, and in the past, there were cases where the trunk fell from above and damaged the suitcase. (PE-0253 Toko Nishikubo)



This photo at the cable car boarding point to move to the summit of Mt. Hakodate in Shiga Prefecture. Even if the part that grasps the cable comes into contact with the part that rotates the cable, the part that holds the cable is trapezoidal so that the cable car itself does not shake suddenly, and it is shaped to prevent sudden changes. (PE-0253 Toko Nishikubo)



## 8.3

### Between the Five Senses

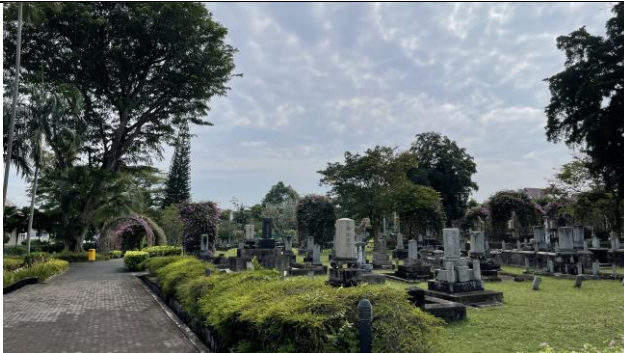
As the Ikoi no Plaza, it is a corner where things that are captured as "beauty" with the five senses are posted, and sketches, drawings, pictures, photographs, anything is fine. Regardless of whether it is engineering or not, please provide us with what you feel is "beautiful", such as carefully designed and manufactured equipment that makes you feel functional beauty, artifacts that are integrated with nature that gives you a sense of formal beauty, or nature that has not been touched by humans at all.



When I got home, I looked at the nearby pond and saw a beautiful mirror image. If you scale this up further, it will become Salar de Uyuni. (PE-0253 Toko Nishikubo)



One in downtown Philadelphia. When I looked at it, I saw the letters PE. But if you look closely, it looks like a company name. (PE-0253 Toko Nishikubo)



This is a photo at Singapore Japan Cemetery Park. It is tucked away in a residential area. The cemetery is designated as a "park" because in response to the prohibition of land use in cemeteries in Singapore, the local Japan association negotiated with the Singapore government and allowed it to develop and preserve the cemetery as a "park". When surrounded by the bright tropical sunlight and tropical plants, I didn't feel the image of "tranquility" and "mourning" like in a Japan cemetery, and the locals seemed to use it as a place to walk their dogs and have meetings at the well. (PE-0193 Hisakazu Sato)



**Board Topics**

The items deliberated at the ordinary board meeting in November are as follows. Details of each matter can be found on the member site – JSPE Board Meeting Minutes.

<https://www.jspe.org/member/report/>

The Board of Directors meeting in January will be Saturday, January 14, 2023. If you are a member who wishes to participate as an observer to the Board of Directors, please contact the Secretariat [managers@jspe.org](mailto:managers@jspe.org).

**【November Ordinary Board of Directors】****Agenda items**

- ◇Changes in the number of members
- ◇Proposed revision of honorarium for overseas lecturers on a USD basis
- ◇E20 travel expenses increase due to local troubles

**Matters to be reported**

- ◇Payment status of annual membership fee
- ◇Year End Party
- ◇First Half Forecast and Actual Report
- ◇PE/FE exam registration consultation in March
- ◇Report on seminars, etc.
- ◇E20 Participation Report
- ◇Start of on-demand seminar trial
- ◇Determination of specifications of JSPE member database and how to proceed with future HP revisions

**Homepage, SNS, Member Email**

Thank you for using the JSPE website and SNS. The Public Relations Subcommittee strives to provide useful information to everyone through its website, such as updating PE exam registration, but if you have any comments or comments such as how convenient it would be to post something like this on the JSPE website or if the information posted on the JSPE website was useful, please contact the Public Relations Subcommittee [public.2007@jspe.org](mailto:public.2007@jspe.org). Please do.

**【CPD Seminar】****JSPE Day 2022**

Date: Saturday, October 15, 2022

Participants: (Web viewing) 36 people (31 PE, 1 PEN, 4 non-members)

Title: Development of ionic liquids into various fields

Lecturer: Prof. Toshiyuki Ito

(Fellow of Toyota Physical and Chemical Laboratory, Professor Emeritus of Tottori University, Fellow of the Royal Society of Chemistry)

## Abstract

Ionic liquid, called the third liquid, is a unique liquid that is ultra-non-volatile and non-flammable, and can design physical properties. We will introduce our research on ionic liquids and introduce various possibilities for industrial use of ionic liquids from the perspective of SDGs.

## &lt;Implementation report&gt;

Unfortunately, this year's JSPE Day was held without a lecture by a member lecturer, but Dr. Toshiyuki Ito, a fellow at Toyota RIKEN, gave a two-hour keynote speech on the theme of "Expansion of ionic liquids into various fields." I think there were many difficult parts for people who usually have few opportunities to come into contact with chemistry, but I think it was a good opportunity to learn about ionic liquids, which are expected to be applied to various fields such as medicine, computers, and air conditioning. He talked about the time when the research results were obtained, and I enjoyed listening to the lecture. I would like to take this opportunity to thank Dr. Ito for giving a lecture.

**FY2022 2nd English Seminar**

Date: Sunday, December 11, 2022

Participants: (Web viewing) 22 people (20 PE, 1 PEN, 1 non-member)

Famous Canadian engineers and companies

Lecturer: Colin Dale

## Abstract

By focusing on topics related to engineering in Canada, the purpose is not only to learn English, but also to deepen understanding of the actual situation of overseas engineering as a PE. It will be an online lecture by a native instructor from Canada, but the instructor is also proficient in Japanese, so please use it as an opportunity to improve yourself.

## &lt; theme this time &gt;

In this seminar we'll learn about famous Canadian engineering companies and some of the engineers associated with them. For each company we'll learn:

- Its founder(s)
- When and where it started
- Its original line of engineering
- The type(s) of engineering it does today

- Some notable projects and achievements
- Interesting facts about it
- How to get a job there

#### Breakout activities:

In each hour of the seminar we'll learn about a few companies in different fields of engineering. Then you'll be put into breakout rooms. Everyone will look for at least one job that they think they would be qualified for. You'll present the details of your job to your group. Each group will choose the most interesting job to present to the whole seminar. Fields of engineering, companies, and associated engineers

#### <Implementation report>

Following the past two English seminars, Colin Dale from Canada gave a lecture. He explained the achievements of engineers with ties to Canada, Canadian-owned companies, and the history and activities of U.S.-owned companies operating in Canada, using many video teaching materials, including episodes when famous products were invented and product names were decided.

There were two group works along the way, and each participant conducted their own research and group discussions using the Internet, and I think I was able to attend the lecture without getting bored.

I would like to take this opportunity to thank the lecturer, Colin Dale.

#### **【PE / FE Examination Registration Consultation】**

On October 29, we held a PE/FE exam registration consultation via Zoom.

There were 10 participants in total, including 2 PENs, 1 FE, and 3 non-members, as well as 2 PE members and 4 board PEs who introduced their state registration experiences.

After the organizer gave an overview of the PE system, Chairman Nishikubo introduced the significance of obtaining PE certification and the support received from JSPE, two PE members who recently achieved state registration this fiscal year gave lectures on their registration experiences.

After that, we were divided into two groups and answered consultations from participants for the exam and registration.

JSPE holds such consultations twice a year to support exams and registration. The next one is scheduled for March 2023.

Please check the following URL for the latest information on this year's events.

<https://www.jspe.org/events/>

| 年月日        | 曜日 | 時間          | 行事名・内容              | 場所                    | 問い合わせ先                           | 備考       |
|------------|----|-------------|---------------------|-----------------------|----------------------------------|----------|
| 2022年1月1日  | 日  | -           | JSPEマガジン冬号配信        | 会員にメール通知              | 広報部会<br>public.2007@jspe.org     |          |
| 2023年1月14日 | 土  | 9:30-12:00  | 1月度理事会              | 東京Mixer/Zoom          | 事務局<br>webmaster@jspe.org        |          |
| 2023年1月21日 | 土  | 10:00-12:10 | 鬼金セミナー (3)          | 関西TBD, 関東TBD/<br>Zoom | 教育部会・鬼金分会<br>rep@jspe.org        | 日程・時間調整中 |
| 2023年2月8日  | 水  | 19:00-21:00 | エンジニアズサロン (2)       | 関西TBD, 関東TBD/<br>Zoom | 教育部会<br>education.2007@jspe.org  | 講師募集中    |
| 2023年2月18日 | 土  | 10:00-12:10 | 鬼金セミナー (4)          | 関西TBD, 関東TBD/<br>Zoom | 教育部会・鬼金分会<br>rep@jspe.org        | 日程・時間調整中 |
| 2023年3月1日  | 水  | 19:00-21:00 | エンジニアズサロン (3)       | 関西TBD, 関東TBD/<br>Zoom | 教育部会<br>education.2007@jspe.org  | 講師募集中    |
| 2023年3月5日  | 日  | 9:00-11:00  | 英語セミナー(5)           | 関西TBD, 関東TBD/<br>Zoom | 教育部会<br>education.2007@jspe.org  | 日程・時間調整中 |
| 2023年3月11日 | 土  | 9:30-12:00  | 3月度理事会              | 東京・TBD/Zoom           | 事務局<br>webmaster@jspe.org        |          |
| 2023年3月18日 | 土  | 10:00-12:10 | 鬼金セミナー (5)          | 関西TBD, 関東TBD/<br>Zoom | 教育部会・鬼金分会<br>rep@jspe.org        | 日程・時間調整中 |
| 2023年3月25日 | 土  | 14:00-17:00 | FY2022PE/FE受験・登録相談会 | 関西TBD, 関東TBD/<br>Zoom | 会員部会<br>membership.2007@jspe.org |          |

\* In view of the influence of the coronavirus, we will adjust the schedule and implement it.

<OnikinSeminar>

January 21, 2023

February 18, 2023

March 18, 2023

< Technology CPD Seminar >

March 5, 2023

<PE/FE Examination and Registration Consultation>

March 25, 2023

【January Board of Directors】

January 14, 2023

- Name: Chika Miwata
- Membership number: PEN-0232
- Qualifications: High Pressure Gas Production Safety Officer Class B Chemical, Guide Interpreter
- Field of Specialization: Fire Protection
- Motivation for joining: Reference networking, information collection
- Self-introduction: The registered state is undecided, but due to the influence of the NHK special I watched while writing this, I'm intrigued by Wild Fire-prone states.
- What I want from JSPE: I would like to meet senior female PE



- Name: Kenichi Nagao
- Membership number: AF-0118
- Qualification : First-class architect
- Field of Specialization : Structural Engineering (Architecture)
- Reason for joining: The fact that you can get a Professional Engineer in Japan is widely recognized by the public. It cannot be said that it has been done, and the opportunity to gather information is limited.



○ Self-introduction: I am a major general contractor and I design the structure of high-rise buildings. More than 10 years ago, when I was a graduate student, I studied abroad at Oregon State University (College of Civil and Construction Engineering) for one year. I learned about the existence of. When I became a member of society, I understood that PE was equivalent to a first-class architect or engineer in Japan.

I became a member of society and once got a job at a house manufacturer. However, I had no opportunity to be assigned overseas, and my experience was not something I could make use of. About a year ago, I changed jobs to my current general contractor. Therefore, we had branches overseas (in the United States and Southeast Asia), and during the interview for joining the company, the executive asked if there was any wish.

Even though I have some study abroad experience, there are blanks, and the difference in design philosophy between Japan and the United States is also a source of concern. Through the PE certification, we hope to deepen understanding (or relearn) American design concepts, and at the same time, appeal to people to have the opportunity to work in the United States.

- What we hope JSPE does: We would like to receive information from those who have obtained PE certification or who have been assigned overseas. I also think it would be good if there were activities that would let many engineers in Japan know about the opportunity to obtain PE.



2023 years have arrived. What kind of end did you members have at the end of the year? Looking back on the events of 2022, I believe that there were various major and unexpected events, both in Japan and overseas. The following three events left a lasting impression on me.

1. Starting with Russia's invasion of Ukraine in February, energy and food supply insecurity and logistics instability have occurred. Global inflation is progressing due to rising energy and transportation costs. And the competition for energy can be said to be the opposite of the trend toward decarbonization. In addition, the trend of strengthening the armament of each country due to the rise of nationalism.
2. Assassination of former Prime Minister Abe in July. While it is said that "Japan is a safe country", the assassination of the former prime minister that occurred in public was a shocking event in the world. During my business trip to India at the time, a colleague asked me, "How could this happen in a Japan that was supposed to be safe?" "Japan is safe" is a comparative theory, not "absolutely safe," and it is not without danger. I was reminded that there is a probability that something like this can happen if we do not prepare for danger.
3. Response to symbiosis with COVID-19 throughout the year. The end of 2021 was the time when the Omicron variant began to spread, but at the end of 2022, many countries in the world began to accept that "COVID-19 is a common disease" based on the attenuation of the Omicron variant. Many countries have realized a life close to Corona, but some countries, such as China and Japan, are still struggling to cope with Corona.

I think there will be unforeseen events again in 2023. Hopefully, positive and unexpected events will follow, and at the end of the year, many people will be happier.

1 January 2023

Hisakazu Sato (Magazine Editor)

If you have any concerns, suggestions, questions, or contributions, please contact the Public Relations Committee [public.2007@jspe.org](mailto:public.2007@jspe.org).

#### 【Editorial Committee】

Nishikubo (Chief Planning Editor)

Inaba (Board of Trustees Topics, Education Subcommittee CPD Seminar Report, Coming Events)

Sato (Ikoino Hiroba), Fujimura (FE/PE pass, PE registration experience, introduction of new members)

Kamino (Ethics), Hirose (Ethics Reviewer), Ito, Ota (general editing)

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