Continuing Professional Development

Member/Fellow/CEng CPD evidence submission form

Please read the accompanying guidance notes before completing this form. You may find it helpful to read the examples before you complete the submission form

IChemE will endeavour to respect the confidentiality of the information provided and your submission will be disclosed only to those IChemE Members dealing directly with the review.

Registrants are requested not to include or attach any company sensitive information within their submission.

Name	REDACTED
IChemE Membership No	REDACTED
Membership grade and other registrations held	☐ MIChemE ☒ FIChemE ☒ CEng ☐ CSci ☐ CEnv ☐ RPEQ ☐ ESOS ☐ Professional Process Safety Engineer

Declaration

I hereby agree that this CPD report represents a true account of my continuing professional development process and the information contained in this form is correct.

Please tick the box below and enter your name and date to indicate your agreement to this declaration.

I agree to the declaration ☒	
Print Name:	REDACTED
Date:	23 August 2019

Section 1 – Status

Do you consider yourself to be professionally active* at this time?

☒ YES – Proceed to Section 2.

☐ NO – I am not professionally active* and therefore exempt from the CPD requirements.

Please provide explanatory information of your status in the box below and return the form.
At this stage there is no requirement to complete Section 2.

* See guidance notes for more details

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Section 2 – CPD evidence

Your role(s)
Please summarise your role(s) and responsibilities for the period covered by the evidence provided It is suggested that your summary is no longer than 150 words.
I am a Senior Risk Authority in COMPANY NAME's REDACTED group, with particular responsibility for designing the annual Executive major hazard risk review process for the REDACTED business and supporting and providing coaching to the REDACTED business through that process, interfacing with and providing detailed technical briefings to executive management. I provide advice on major hazard risk assessment and its integration in the wider risk management process. I also lead and carry out detailed technical audits of risk control barriers on operating units, help with the development of corporate and business technical guidance and procedures and am leading the development of a leadership course about controlling process safety risk for all levels of operational leaders in COMPANY NAME.

Please complete the table below, detailing the filenames and description of any accompanying documents that you will refer to in your submission.

Please anonymise any attachments so they do not include any personal information or company names etc.

Filename	Description
CV-Resume-20036485	CV

Please complete the following parts of the form as outlined in the guidance notes.

If the information is already contained within one of your attachments, there is no need to repeat or copy it into the boxes below, but you should explain where the information will be found. This should be done by clearly stating the filename and location within the attachment where the information is to be found (e.g. page number or section number).

The combination of your responses below is designed to show that you are meeting the IChemE's CPD requirements. Please refer to the guidance notes for more details.

If using acronyms, please use the full name when first mentioned and the acronym you are going to use in brackets.

Part A – Planning your CPD (Requirement 1)
Please provide an outline of your CPD process, explaining how and when you review previous CPD activities, identify future needs and set your CPD objectives for the forthcoming cycle/period. It is suggested that your summary is no longer than 300 words.

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COMPANY NAME operates a "70:20:10" model for learning, where 70% of learning happens on the job, 20% occurs through exposure/developmental relationships and 10% through structured education/learning. CPD for senior technical specialists such as myself is entirely self-directed and based around my objectives. There is no corporate CPD process for senior technical specialists beyond what they agree with their management through the annual objectives-setting process.

The majority of CPD occurs in the course of meeting my objectives. A certain amount of training is centrally driven, but this is mainly about corporate concerns and not about technical training. Objectives, including any specific training needs, are identified during the performance review process and included in annual objectives. These are formally reviewed with my management mid-year.

The timing of the IChemE Hazards conferences makes it impossible for me to attend, so I maintain my technical know-how through conversations with colleagues in the course of my work, attending FABIG Technical meetings, reading journals and reading textbooks relevant to my work (e.g. re-reading books by Hopkins and Reason and reading books by Dekker as part of my preparation for developing a training course).

Long-term development planning occurs through a three-yearly development review which identifies longer-term development objectives. In my case, given the current stage I am at in my career, these are to maintain my technical capabilities and mentor younger colleagues in risk management.

Part B – Previous CPD plan (Requirement 2)

Please give start and end date of your **last completed** CPD cycle.	Jan 2018 - Dec 2018

For this last completed CPD cycle, please summarise the development objectives that you set and where appropriate explain:

- Why did you select those development objectives?
- What specific measures of success did you set for those objectives?
- What activities did you plan to carry out to meet the development objectives and why did you choose them?
- How you would know if you met the objectives you set yourself?

It is suggested that you use no more than 500 words.

My major development goal for 2018 was to achieve "Mastery" status for carrying out REDACTED Risk Assessments against the defined competency criteria. In COMPANY NAME the REDACTED Risk assessment process is a corporately defined process using a simplified QRA methodology, but the resulting risk assessment is central to a number of other corporate processes - including upward reporting for governance purposes and the determination of how the 3 Lines of Defence are applied to risk management. Although I am very experienced in technical risk assessment, this would formalise my role in reviewing these risk assessments and expand the pool of Masters in the COMPANY NAME. The requirements for obtaining Mastery were to carry out a defined number of risk assessments and pass a written examination. The Group authority would then advise me whether I had met the required standard or not.

My other CPD goals were to develop existing skills through applyiing them. This included:

(1) Completion of a detailed ALARP demonstration for a REDACTED where a new REDACTED was being installed, against the background of a sale of a facility and potential ongoing liabilities for remediation costs if changes to the design were required. The work involved bringing together detailed work on loss of containment frequencies (custom analysis of the OIR/12 database), ignition probabilities (application of the underlying principles of the IP methodology), detailed exposion modelling (TNO, BST, FLACS), CFD transient spill modelling to look at how different loss of containment modes would spread, working with a specialist mechanical engineering consultancy to carry out dynamic finite element analysis of equipment to determine how it would respond to an

transient external load from an explosion), consequence analysis using PHAST, and bringing everything together by assessing against individual and societal risk criteria so that the work could be used as part of a COMAH ALARP demonstration. Researching the dynamic response of the equipment to an external blast involved reading US nuclear test reports referenced in the TNO Green Book and searching through Google Scholar to find out how blast waves interact with cylindrical objects.

(2) Taking over a pilot version of a leadership course on Controlling Risk aimed at unit superintendants and offshore installation managers. The course had been developed in an ad hoc manner and my work was to bring a coherent narrative to the material and then help with the delivery of the course through leading online discussions and recording videos. This is an entirely new area for me, but builds on my passion for improving process safety performance and competence.

(3) Completing 27 online courses (a combination of ad hoc and planned) delivered through the COMPANY NAME University, covering a mixture of reviewing materials for development of the Controlling Risk course, non-process safety aspects of my work and areas of interest. Courses covered Understanding Barriers, various aspects of the energy transition, data analytics and data management, technical auditing and risk assessment.

(4) Attendance/watching FABIG Technical Meetings:
TM94: Managing Fire & Explosion Hazards in a Low Oil Price Environment
TM96: Developments in Fire & Explosion Engineering for a Hydrogen Economy

Part C – Reviewing and reflecting on previous CPD undertaken (Requirements 3 & 4)

For each objective provided in your previous CPD plan above, please summarise below the review and reflection you carried out for each objective including information such as:

- What you learnt from the development activities you completed?
- Did you meet the development objectives and any specific measures of success that had been set?
- What benefits you and your organisation gained from the development activities?

It is suggested that you use no more than 500 words.

(1) I have achieved Mastery status against the defined corporate criteria. The skills I have learned from this are mainly practical ones about use of the new software tool, but also learning technically from the group of specialists who work in this area and the work they have been carrying out - for instance on how to use PHAST to model particular situations. While this objective largely confirms skills I already had, being formally confirmed as a Master allows me to provide technical input to some risk assessments on a formal basis.

(2) The ALARP assessment was completed and accepted by all parties. It demonstrated that the residual risks were ALARP and that no additional remediation expenditure was required, averting spend that could have been in the tens of millions of USD. In terms of technical skills, this was a useful refresher for me, not having done this kind of work for a few years, but seeing how the dynamic response modelling could be combined with other detailed consequence modelling techniques was very informative.

(3) The pilot course was a great success, receiving very positive feedback from participants. It is a great opportunity to shape leaders and help them to think around what good process safety management requires, as well as identifying issues that concern them. The skills I applied were in communication and arguing a case, and to that extent they built on existing skills I have. Re-reading the Andrew Hopkins and James Reason books was a refresher, but the work of Dekker and his systems approach is of real interest to me as a complement to traditional technical safety management. The benefits to the company are that I could take this knowledge into development of the course for other levels of leaders and apply it more generally in risk management conversations in COMPANY NAME - for example how we monitor risk dynamically so we can try to understand the interaction of different barrier degradation mechanisms and make more informed risk management decisions.

(4) The online courses were for background knowledge, since a lot of the subject matter was known to me already in the course of my work or was for my own information so I better understand what other parts of the Group are doing. The benefits to the company are in terms of being a better informed employee.

(5) I watched both FABIG technical meetings using the catch-up video facility. The information from the presentations is useful as reference for the future.

What information did you take from the review and reflection of your previous CPD activities described above, to carry forward into your next CPD plan?

It is recommended that you use no more than 200 words.

There is nothing from the review that suggested any major gaps in knowledge for the role I carry out and the kinds of objectives I am set. I would expect to carry forward the skills I have learned in risk assessment and from the development of my Controlling Risk work into future work on technical risk assessment and the next stages of the development of the Controlling Risk course for more senior operations leaders and for front-line leadership.

Essentially, I conclude that the 70/20/10 approach works for what I do and the level of knoweldge and seniority that I hold. It would be nice to able to attend a Hazards conference, but the timing of the conference makes that impossible, and I am satisfied that the combination of learning from colleagues, reading/researching when necessary to close knowledge gaps and FABIG Technical Meetings works reasonably well for me.

Part D – Current CPD plan (Requirement 2)

Please give start and end date of your **current** CPD cycle.	Jan 2019 - Dec 2019

For the current CPD cycle please summarise the development objectives that you set and where appropriate explain:

- Why did you select those development objectives?
- What specific measures of success did you set for those objectives?
- What activities did you plan to carry out to meet the development objectives and why did you choose them?
- How you would know if you met the objectives you set yourself?

It is suggested that you use no more than 500 words.

My CPD objective for 2019 is to maintain my skills through meeting my objectives. I expect that the majority of my learing needs will be met on the job, through conversation, working with others, reading and research/literature searches where appropriate.

My principle objectives for 2019 are:

(i) the continuing support for the major hazards risk management process in the COMPANY NAME business, with a focus on using all the sources of information available to get a realistic view of the health of the risk management system, discussing with executives how they can best fulfil their governance role when the risk profile is likely to remain stable, and raising particular cases where in my professional judgment the risk assessment should be reviewed.

(ii) provide technical support on individual risk assessment issues

(iii) carry out a technical audit on the barrier health of a major high-risk procss unit.

(iv) continue the development of the Controlling Risk course for delivery to senior operations leaders

and first level leaders, with principal areas being: Understanding and Managing Risk (including bowties and barriers); Process Safety; Self-Verification (as part of the three lines of defence); and Making Risk Based Decisions. Particular themes are the role of leadership at different levels in driving process safety, and risk normalization/drift (using some of the insights of Dekker).

(v) reviewing technical training for risk management and working on the development of competency profiles for risk practitioners.

(vi) provision of informal mentoring to less experienced colleagues.

I will obtain specific technical learning through attendance/watching FABIG technical meetings, in particular:

TM 97: Fire & Explosion Hazards caused by Spray Releases
TM 98: Review of Current Understanding of Large-scale Explosion Mechanisms

Success in these objectives will be evident through the personal review process and feedback from customers. Success in viewing the FABIG technical meetings is, again, self-evident on completion of viewing - with a view to bringing the insights into future risk assessments and risk management activities.

Part E – Supporting others (Requirement 5)

What have you done in the last 12 months that has supported the learning and development of others?

It is recommended that you use no more than 200 words.

One of my key objectives has been to develop and deliver a course about controlling operating risk. The course covers Understanding Hazards and Risks; Process Safety; Self-verification; and Making Risk-based Decisions. The course was piloted during late 2018 on a group of ca. 20 unit superintendents / offshore installation managers from across COMPANY NAME to help develop their understanding and skills in day-to-day risk management. I am now developing the course for use with shift/maintenance technician team leaders and also with senior operations team leaders (e.g. refinery managers).

I regularly coach process safety engineers at manufacturing sites on process safety risk management issues and also provide coaching to less experienced members of my team to help them gain an historical perspective on risk management within COMPANY NAME and gain skills in explaining and presenting risk issues to senior management. As a subject-matter expert, I also coach colleagues from other disciplines in risk management to help them to apply a risk management thought process to their own disciplines.

COMPANY NAME is introducing a more formal mentoring system, and I will be discussing involvement in the scheme as a mentor with my line manager.

Part F – CPD activity types used

For the objectives you described in Parts B, and work described in Part E above, please fill in the table below to show the mix of activity types that were used.

CPD objective/work	Work based learning	Professional activity	Formal / educational	Self-directed learning	Other

REDACTED Mastery	☒	☐	☐	☒	☐
ALARP Demonstration	☒	☐	☐	☒	☐
Controlling Risk leadership course	☒	☐	☐	☒	☐
Work-based online learning courses	☒	☐	☐	☐	☐
Coaching/mentoring	☒	☐	☐	☐	☐
FABIG Technical Meetings	☐	☐	☒	☐	☐
	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐