


United States Nuclear Regulatory Commission Official Hearing Exhibit	
In the Matter of:	Entergy Nuclear Operations, Inc. (Indian Point Nuclear Generating Units 2 and 3)
	ASLBP #: 07-858-03-LR-BD01
	Docket #: 05000247 05000286
	Exhibit #: ENT000007-00-BD01
	Admitted: 10/15/2012
	Rejected:
Other:	
Identified: 10/15/2012	
Withdrawn:	
Stricken:	

ENT000007
Submitted: March 28, 2012

GRANT TEAGARDEN

Manager
Consequence Analysis

AREAS OF EXPERTISE

- **Level 3 PRA (MACCS)**
- **Security Risk Assessment**
- **Level 2 PRA (MAAP)**
- **Fire PRA**
- **Internal Flooding**
- **Data Analysis**

EDUCATION

B.S., Mechanical Engineering, University of Miami, Florida

Bettis Nuclear Reactor Engineering School, Bettis Atomic Power Laboratory, Pennsylvania

SECURITY CLEARANCE

Secret

Safeguards

U.S. Citizen

WORK EXPERIENCE SUMMARY

Mr. Teagarden has over fourteen years of experience in the nuclear field, including four years as a Naval Reactors Engineer in the U.S. Navy. He is experienced in Level 3 PRA consequence analysis, Fire PRA, plant security risk assessment, PRA updates, data and common cause failure analysis, integrated leak rate test extension evaluations, and internal flood updates.

WORK EXPERIENCE

Mr. Teagarden holds a Bachelor of Science degree in Mechanical Engineering from the University of Miami, Florida. He is ERIN Engineering's lead for Level 3 PRA consequence analysis (e.g. radiological dispersion analysis). The following are some of his recent consequence analysis activities:

- Developed Level 3 PRA models (MACCS2) for Limerick (2011), Callaway (2011), Diablo Canyon (2009), Salem (2008), Hope Creek (2008), Progress Energy Levy County Site (2008), Harris Advanced Reactor Site (2007), General Electric's ABWR (2007) and ESBWR (2006, 2005), TMI (2006), Prairie Island (2006), Oyster Creek (2004), Exelon Early Site Permit (2004), Palisades (2004), and Monticello (2004)
- Supported Level 3 PRA SAMA contention resolution for Davis Besse (2011), Indian Point (2009-2011) and Prairie Island (2008)
- Developed quasi-site specific Level 3 PRA models (MACCS2) for every operating U.S. commercial nuclear power plant site in support of industry security assessments (2005)
- Vice Chair of ANS Level 3 PRA Standard Writing Committee (ANS-58.25)

Mr. Teagarden has been an integral part of ERIN Engineering's security assessment team, developing and implementing risk based assessment methodologies for the commercial nuclear power plant industry in the U.S. and clients abroad. The following are some of his recent activities:

- Supported Aircraft Impact Analysis per NEI 07-13 guidance for GE ABWR (2009-2010), KOPEC APR-1400 (2010), MHI US-APWR (2007-2010), and MHI EU-APWR (2009)
- Co-authored development of Risk Analysis and Management for Critical Asset Protection (RAMCAP) methodology for nuclear power plants in support of EPRI, ASME, and the U.S. Department of Homeland Security (DHS) and supported its implementation for NEI at all U.S. nuclear power plants (2005-2007). Implementation included leading an NEI sponsored industry workshop on the methodology, coordinating and facilitating site assessments, and developing industry level insights from the assessment results.
- Developed RAMCAP methodology for spent nuclear fuel dry storage and transportation in support of EPRI, ASME, and DHS, and supported its implementation for NEI (2005-2007)



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PROFESSIONAL ORGANIZATIONS

American Nuclear Society

- Provided RAMCAP training for personnel at Idaho National Laboratory
- Co-authored report for EPRI for identifying potential mitigation strategies for beyond design basis conditions (2005)
- Participated in the development of NEI industry guidance to resolve security related open issues related to large fires and explosions (i.e., B.5.b) at all U.S. nuclear power plants (2005-2006)
- Authored Vulnerability Assessment Methodology for EPRI and NEI use for security threat analysis (2003)
- Co-authored report for EPRI for identification of mitigation strategies for scenarios involving loss of intake structure and offsite power (2004)
- Co-authored reports for EPRI and NEI use for operational response to beyond design basis security threats (2003)
- Authored Explosive Threat Guidelines for EPRI and NEI use in response to NRC Interim Compensatory Measures (2002)

Mr. Teagarden is experienced with Level 2 PRA (e.g., severe accident analysis) and the use of the thermal hydraulic MAAP code to model severe accident phenomenology. Some of his recent Level 2 PRA activities include:

- Managed updates of Hatch Level 2 PRA (2009-2010)
- Performed Level 2 MAAP runs for Columbia Generating Station (2010) in support of SAMA life extension
- Supported Level 2 PRA updates and MAAP analysis for Grand Gulf (2010) and Limerick (2010)
- Served as analyst for Integrated Leak Rate Test (ILRT) extension evaluations for Hatch (2010), Clinton (2006), Columbia (2004), Dresden (2003) and Quad Cities (2002)
- Performed independent review for ILRT extension evaluation for NMP1 and NMP2 (2008, 2009)

Mr. Teagarden has been involved with the commercial nuclear industry's development of Fire PRAs using the guidance of NUREG/CR-6850 in the following ways:

- Exelon Fire PRA Model Owner for Clinton Power Station (2011)
- Technical lead for Fire PRA project for KKM (2011)
- Supported Fire PRA updates to NUREG/CR-6850 for Hope Creek (2010), LaSalle (2008-2009), Clinton (2007-2008) and Hatch (2007)

Mr. Teagarden has also been involved in other technical aspects of PRA analyses such as:

- Served as analyst for Hope Creek and Quad Cities PRA Updates performing the common cause failure analysis and revisions to all the System Notebooks (2002)
- Served as analyst for NASA Space Shuttle PRA performing common cause failure analysis (2002)

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- Performed pipe rupture and flooding analysis for Internal Flood updates for South Texas Project Units 3&4 (2010), Clinton (2009), Hope Creek (2003), Dresden (2001), and Oyster Creek (2001)
- Performed system analysis and pipe rupture evaluation for Limerick ISLOCA analysis (2001)

Prior to working for ERIN Engineering, Mr. Teagarden worked four years as a Naval Reactors Engineer in the U.S. Navy for the Department of Energy. He was principally involved in refueling operations, providing technical support and oversight for the nuclear refueling of the eight reactors on the USS Enterprise Aircraft Carrier. Mr. Teagarden's responsibilities included oversight of reactor disassembly, spent fuel removal and shipout, and reactor reassembly.