



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

June 5, 2023

MEMORANDUM TO: Steve Ruffin, Chief  
Materials Engineering Branch  
Division of Engineering  
Office of Nuclear Regulatory Research

FROM: Isaac A. Anchondo-Lopez, Materials Engineer  
Materials Engineering Branch  
Division of Engineering  
Office of Nuclear Regulatory Research

SUBJECT: SUMMARY OF MAY 2-3, 2023, OBSERVATION PUBLIC  
MEETING REGARDING THE DISCUSSION OF  
NONDESTRUCTIVE EXAMINATION OF ADDITIVE  
MANUFACTURED COMPONENTS

A handwritten signature in black ink, appearing to read "Isaac Anchondo-Lopez".

Signed by Anchondo-Lopez  
on 06/05/23

On May 2-3, 2023, the staff hosted a hybrid public meeting to facilitate the exchange of technical information focused on the state-of-the-art of nondestructive examinations (NDE) of additive manufactured (AM) components, as well as key challenges associated with the use of these technologies. The two-day meeting was attended by over 40 stakeholders and included presentations on research efforts from representatives of academia, research laboratories, industry stakeholders, and other government agencies working on addressing AM key NDE challenges. During the meeting, the audience actively engaged in a wide range of AM NDE topics.

The NRC staff took the following general takeaways:

- There is a need to make NDE part of the design and manufacturing process of AM components to identify critical areas needing to be inspected.
- Efforts to qualify and certify manufacturing and NDE methods for AM components are ongoing on multiple fronts. The NRC's continuing engagement will continue to inform the staff on applicable challenges relevant to the adoption of AM components in nuclear plants.
- A large variability exists regarding the final surface condition of AM components that could affect the NDE examination of these components.

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- The need for standardization of NDE calibration methods and how that applies to the different AM manufacturing processes.
- Better understanding of AM microstructures and effects on material properties.

The meeting agenda and presentation abstracts can be found in Agencywide Documents Access and Management System (ADAMS) Accession No ML23115A388. The presentation slides were also made publicly available and can be found in ADAMS Accession No. ML23122A125.

Members of the public that might have been in attendance did not have any questions.

Please direct any inquiries to me at 817-200-1152 or via e-mail at [Isaac.Anchondo-Lopez@nrc.gov](mailto:Isaac.Anchondo-Lopez@nrc.gov).

Enclosure:  
List of Attendees

LIST OF ATTENDEES

MAY 2-3, 2023, PUBLIC MEETING

OBSERVATION MEETING REGARDING THE DISCUSSION OF NONDESTRUCTIVE  
EXAMINATION (NDE) OF ADVANCE MANUFACTURED COMPONENTS

<b>Name</b>	<b>Organization</b>
William Chuirazzi	Idaho National Laboratory
Robert Montgomery	Pacific Northwest National Laboratory
Amir Ziabari	Oak Ridge National Laboratory
Joseph Turner	University of Nebraska-Lincoln
Christopher Kube	Pennsylvania State University
Jesse Waller	New Mexico State University
David G. Moore	Sandia National Laboratories
Andrew Gavens	Naval Nuclear Laboratory
Adam Wick	Naval Nuclear Laboratory
Peter Collins	Iowa State University
Alexander Heifetz	Argonne National Laboratory
Pingsha Dong	University of Michigan
Steve Mahaut	CEA-LIST
Udisien Woy	Nuclear Advanced Manufacturing Research Centre
Ron Aman	EWI
George Connolly	EPRI
Reza Zoughi	Center for Nondestructive Evaluation, Iowa State University
Aaron Diaz	Pacific Northwest National Laboratory
Subash Jayaraman	NAVSEA
Craig M. Sheppard	NAVSEA
Torsten Häntzka	ENSI
Joel Harrison	Pacific Northwest National Laboratory
Tressa White	Naval Nuclear Laboratory
Matthew S Prowant	Pacific Northwest National Laboratory
Pradeep Ramuhalli	Oak Ridge National Laboratory
Jared Gillespie	Pacific Northwest National Laboratory
Emma Haywood	NRC
Seung Min	NRC
Carolyn Fairbanks	NRC
David Rudland	NRC
Hilary Lane	NEI
Steve Bloom	NRC
Shah Malik	NRC
John Honcharik	NRC
Robert Tregoning	NRC
Jason Daniel	NRC

Christopher Nellis	NRC
Meg Audrain	NRC
Joel Jenkins	NRC
Steve Ruffin	NRC
Bruce Lin	NRC
Robert Davis	NRC
Ali Rezai	NRC
Edison Fernandez	NRC
James Medoff	NRC
Michael Magyar	NRC
Stephen Cumblidge	NRC
Dan Widrevitz	NRC
Jeff Poehler	NRC
Angie Buford	NRC
Mekonen Bayssie	NRC
Brian Allik	NRC
Mat Burton	NRC
Carol Nove	NRC
Bart Fu	NRC
Shiattin Makor	NRC
Mark Yoo	NRC
Austin Young	NRC
Matthew Hiser	NRC
Allen Hiser	NRC
Raj Iyengar	NRC
On Yee	NRC
Omar Khan	NRC
Pat Purtscher	NRC
Christopher Conniff	
Stefan Keuler	
Kevin McCormick	
Andy Callaghan	
Craig Sheppard	
Wijay Heinemann	
Christopher Ulmer	
Dev Ray	
Eric Niemasz	
Meimei Li	
Christie Knott Henry	
Nicholas Hansing	
Deann Raleigh	
Mary H Miller	
Michael Franzen	
Seiya Tatsuhama	

Nate Mentzer	
Hongbin Sun	
Michael Foch	
Pranaam Haldipur	
Paul Witherell	
Daiki Kanai	
David Anderegg	
Hajime Shohji	
Chris Hutchinson	
Isabella Van Rooyen	
Roman Hofmann	

Meeting Summary - Technical Exchange on NDE of AMT DATE June 5, 2023

DISTRIBUTION:

**ADAMS Accession No.: ML23153A010**

OFFICE	RES	R-IV/DRS/EB2		
NAME	SRuffin	SR	IAnchondo-Lopez	IA
DATE	Jun 5, 2023	Jun 5, 2023		

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