

AI For Permitting

Increase Efficiency, Reduce Costs
U.S. Nuclear Regulatory Commission (NRC) | AI Workshop

Nicolette Lacich
Microsoft Azure Specialist, Dept of Energy



Greenlighting Permitting with GenAI

PRESIDENT DONALD J. TRUMP The WHITE HOUSE Q

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[PRESIDENTIAL ACTIONS](#)

Updating Permitting Technology for the 21st Century

Presidential Memoranda | April 15, 2025

The Government does not properly leverage technology to effectively and efficiently evaluate environmental permits, causing significant delay to important infrastructure projects that impact our economic well-being. This will now change. My Administration will apply modern technologies to longstanding problems to deliver outstanding results at 21st-century speeds. To that end, and pursuant to the authority vested in me as President by the Constitution and the laws of the United States of America, I hereby direct the following:

Section 1. Policy and Purpose. Executive departments and agencies (agencies) shall make maximum use of technology in environmental review and permitting processes for infrastructure projects of all kinds, such as roads, bridges, minor factories, power plants, and

Updating Permitting Technology for the 21st Century
– The White House

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NEDC, PERMITTING COUNCIL EXPEDITE PERMITTING FOR SEVERAL CRITICAL MINERAL PRODUCTION PROJECTS—WITH MANY MORE PROJECTS COMING SOON.

Trump Administration Advances First Wave of Critical Mineral Production Projects

The White House | April 18, 2025

Today, the Federal Permitting Improvement Steering Council (Permitting Council) announced increased transparency, accountability, and predictability for the permitting review process for the first wave of critical mineral production projects—with many more projects on the way—in response to President Trump's Executive Order, [Immediate Measures to Increase American Mineral Production](#). Identifying these transparency projects under the Permitting Council's statutory program advances the President's directive to take immediate action to facilitate domestic production of America's vast mineral resources to create jobs, fuel prosperity, and significantly reduce our reliance on foreign nations.

"This is the first use of the Permitting Council's transparency authority, and we look forward to showcasing the many benefits the Federal Permitting Dashboard can bring to critical infrastructure projects as part of President Trump's Executive Order on increasing American mineral production," said [Manisha Patel, Acting Executive Director at the Permitting Council](#). "The Federal Permitting Dashboard will make it easier for the public to track the progress of these projects."

Trump Administration Advances First Wave of Critical Mineral Production Projects – The White House

The Permitting Bottleneck

Reviewing environmental permits currently takes years and significant expense.

Objective: Accelerate industries by applying Generative AI to greatly reduce the cost and time to license projects.

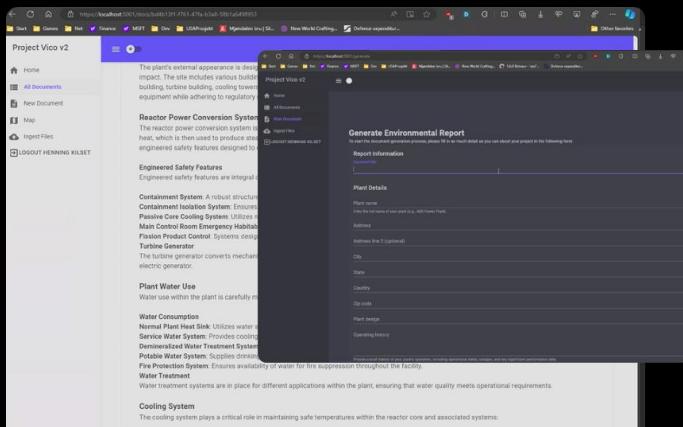


Use Cases for the Industry

Key Features

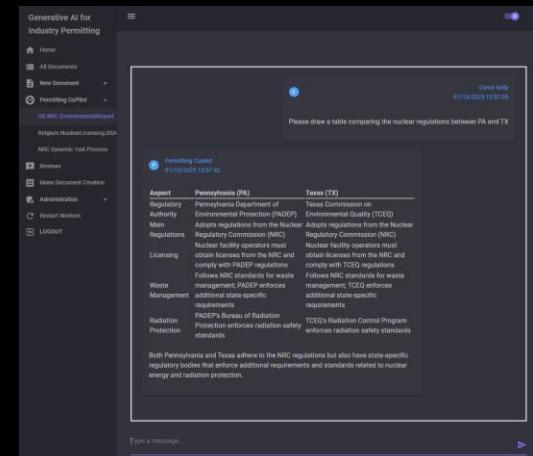
AUTOMATED DOCUMENTS CREATION

Drafting documents with multiple calls to the GenAI model(s), using previous permitting data, project specific data, and enterprise datasets—ready for human review and refinement.



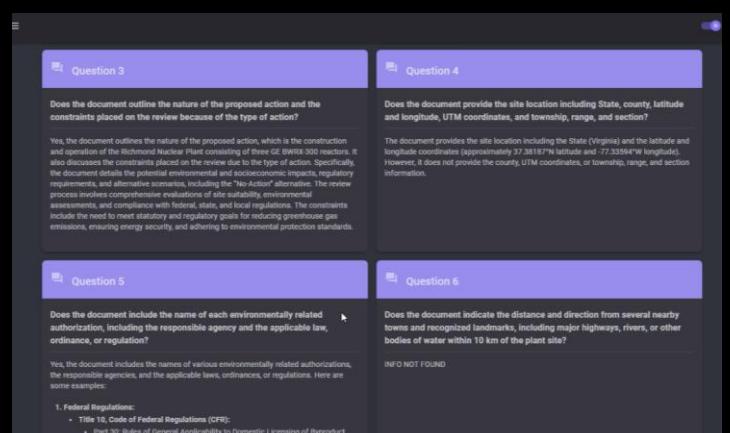
COPilot AGENT WITH TRAINED BACKEND DURING REFINEMENT STAGE

A “Copilot” allowing ad-hoc queries to the trained backend for all permitting specialists to search large document sets, request drafting of sections, etc.



PRE-SUBMISSION DOCUMENTS REVIEW

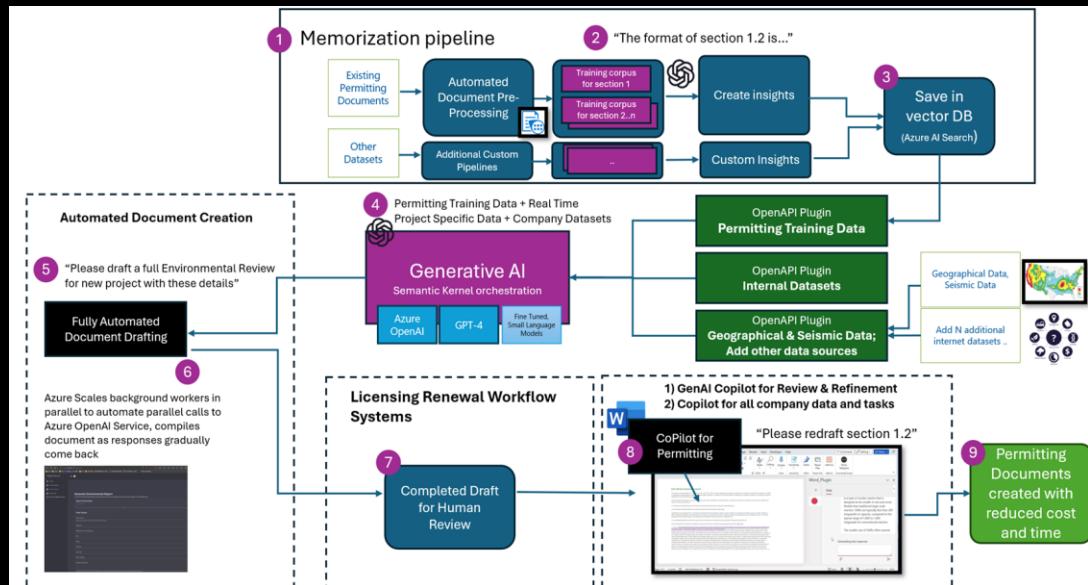
Assess a Permitting Application against regulations to quickly spot missing information, which would otherwise result in a long roundtrip with regulators. Enabling regulators to more quickly identify information & issues.



Microsoft accelerates permitting with Generative AI

Drastically increase efficiency and reduce costs

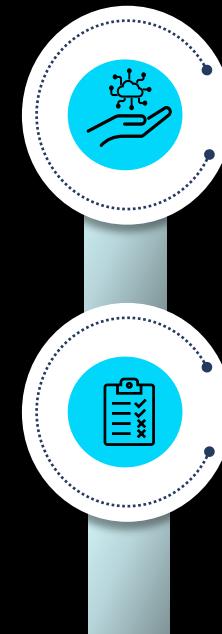
Generative AI accelerator solution



Benefits estimate

BUSINESS VALUE

The solution is positioned to **save 25% - 75%** of the **cost** for compiling new permitting documents



NEW OPPORTUNITIES

The solution can be extended to further scenarios (e.g. New Document Types, Translating Documents between languages or regions globally, Site Selection, etc.) and performs additional savings



[Idaho National Laboratory collaborates with Microsoft to streamline nuclear licensing - Idaho National Laboratory](#)

Idaho National Laboratory collaborates with Microsoft to streamline nuclear licensing

July 16, 2025

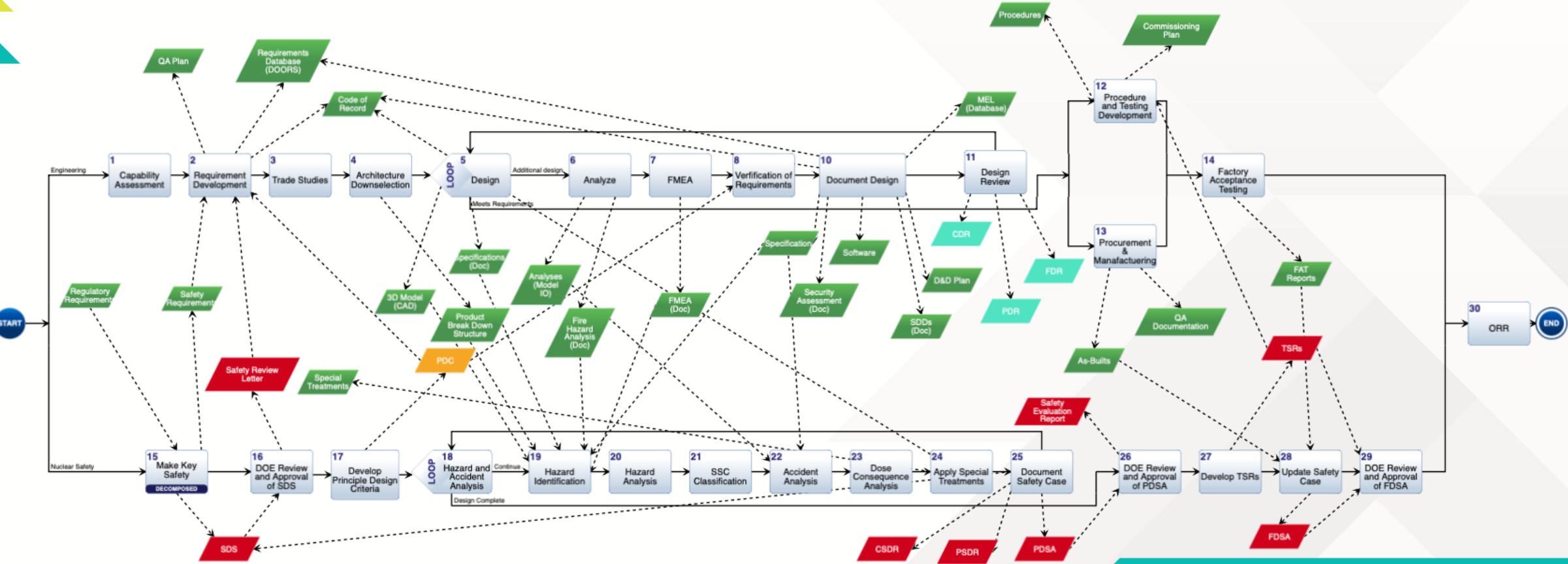
By INL Media Relations



AI for Permitting Questions?

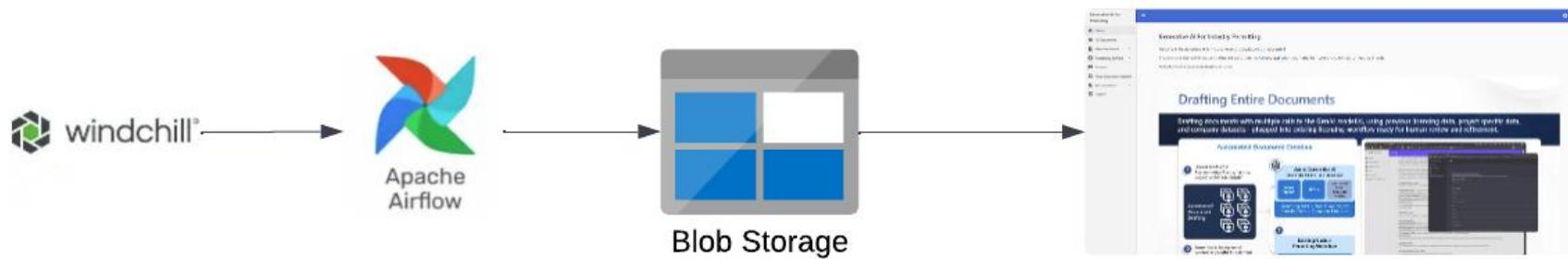
- Please contact, Dr. Nelli Babayan, Microsoft AI Director - Federal Civilian
- nellibabayan@microsoft.com

Integrating Safety and Design is Difficult in a Document-Based Industry

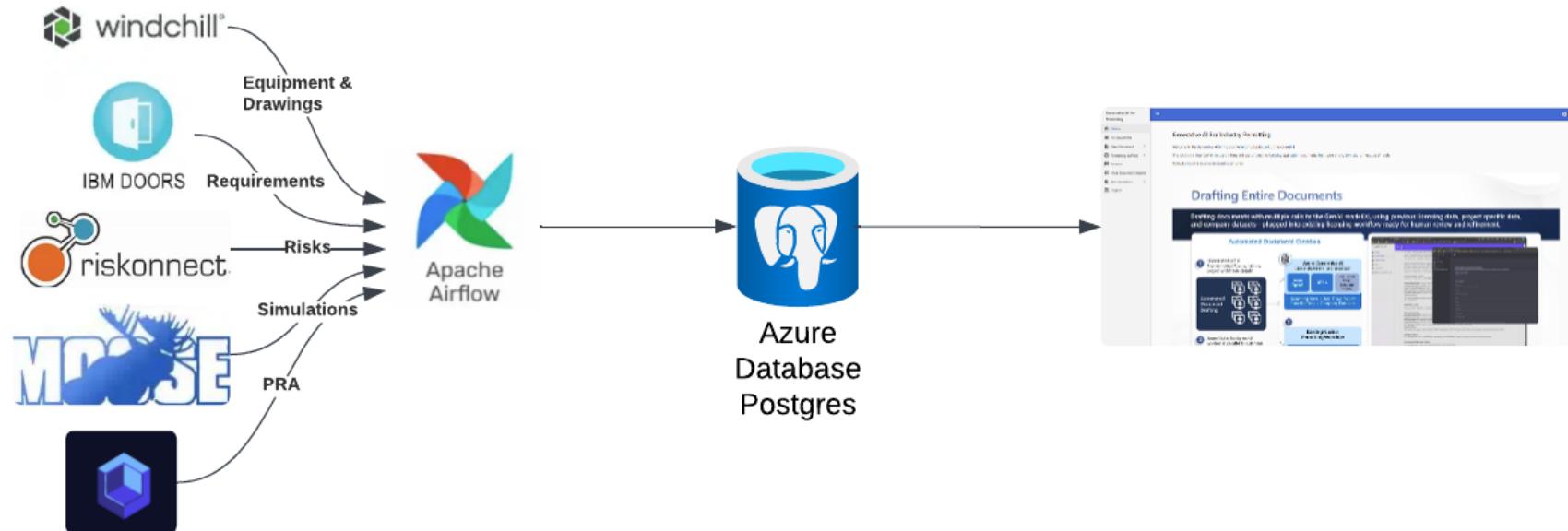


Developing a Digital Engineering Ecosystem

Today's
Document-
Based
Workflow



Tomorrow's
Data-Driven
Workflow



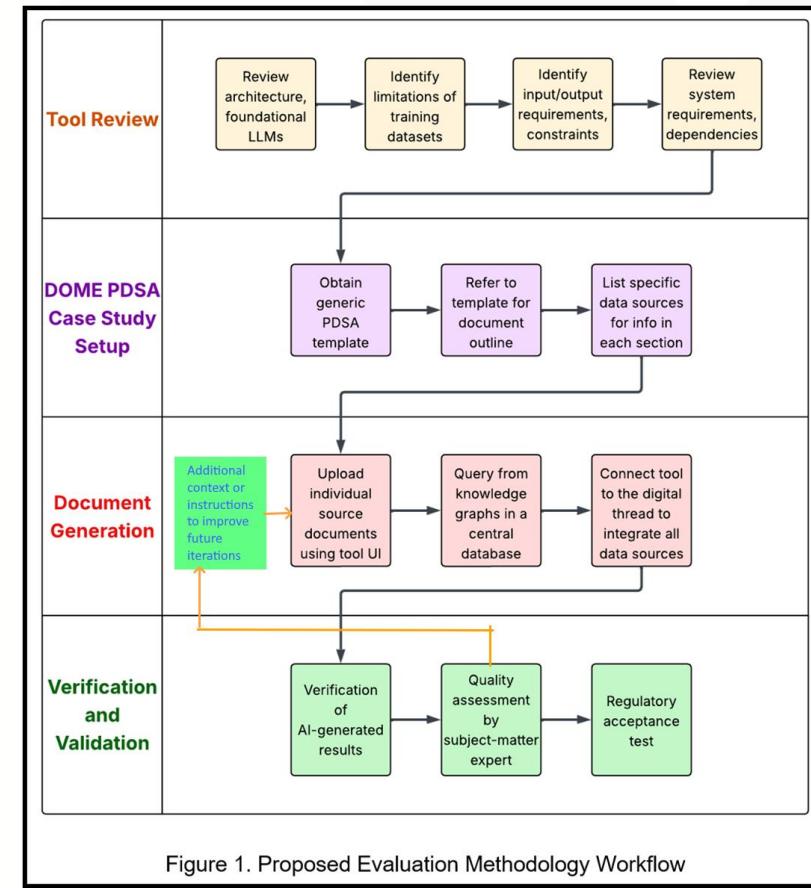


Pilot Projects

- DOE Use Cases
 - Demonstration and Operation of Microreactor Experiments (DOME) test bed Preliminary Documented Safety Analysis (PDSA)
- NRC Use Cases
 - Idaho State University (ISU) AGN-201 Reactor License Application Renewal (LAR) per NUREG-1537
 - Radiant Microreactor Experiment in DOME Part 52 Manufacturing License, ML or Part 52 Design Certification)

Verification & Validation of AI Tools

- Using AI in a regulatory setting requires a strict methodology for V&V of the AI-generated results
- Leverage INL subject matter experts to review and mimic the questions of regulators
- Quantify error rates for future tool improvement





Conclusion

- 1. Enhanced Collaboration & Communication**
- 2. Single Source of Truth (SOT)**
- 3. Improved Change Management**
- 4. Automation of Routine Tasks**
- 5. Enhanced Data Analysis & Decision Making**
- 6. Reduced Development Time**
- 7. Risk Mitigation**
- 8. Consistency and Standardization**