

PMC-ND
(1.08.09.13)

**U.S. DEPARTMENT OF ENERGY
OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY
NEPA DETERMINATION**



RECIPIENT:NREL

STATE: CO

PROJECT TITLE : NWTC IACMI Blade Fabrication; NREL Tracking No. 16-014B

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0000977	DE-AC36-08GO28308	NREL-16-014B	GO28308

Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Order 451.1A), I have made the following determination:

CX, EA, EIS APPENDIX AND NUMBER:

Description:

DOE/EA-1968 (NREL STM)	SITEWIDE ENVIRONMENTAL ASSESSMENT, U.S. DOE NATIONAL RENEWABLE ENERGY LABORATORY, SOUTH TABLE MOUNTAIN CAMPUS, GOLDEN, COLORADO
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Rationale for determination:

The U.S. Department of Energy National Renewable Energy Laboratory (NREL), in collaboration with the Institute for Advanced Composites Manufacturing Innovation (IACMI), is proposing to develop onsite capabilities that would allow them to pilot alternative approaches to the manufacturing of wind turbine blade components using various composite materials. Research would focus on decreasing mold cycle time, integrating thermoplastic matrices into the current production process, augmenting the robustness of fabric placement through automation, and demonstrating remote manufacturing capabilities.

The existing Quonset hut facility (Building 260) at the National Wind Technology Center (NWTC) was selected as the manufacturing site to conduct this pilot research. The building was modified in April-May 2016 from use as a storage facility to meet the needs of future research programs (NEPA Determination NREL-16-014).

IACMI partners would provide the equipment used for the manufacturing research. The facility would be equipped with items such as the Vacuum Assisted Resin Transfer Molding (VARTM) system, rolling jigs to support the blade component molds, rolling carts for equipment, drum dollies/material handling equipment for chemical container movement, and infusion machine(s) to pump chemicals to the molds.

Fabrication activities would use epoxy resins, polyester resins, vinyl resins, adhesives, gelcoats, primers, paints, release agents, carbon fiber, and fiberglass cloth containing alkanes, aromatic hydrocarbons, organic peroxides, cobalt, pigments carbon, boron, magnesium, calcium, silica, and silicates. Once fabricated, the finished blade components would be tested on-site in existing NREL facilities or sent to industry partners. All off-site testing would be conducted in existing domestic facilities.

Controls to mitigate worker exposure during fabrication activities include dispensing through a closed system and exhaust ventilation at six air-changes-per hour. Chemicals would be stored in hazardous materials cabinets and lockers when not in use and excess would be properly disposed of following all state and federal regulations. Employees and IACMI partners would follow all applicable NREL Lab Level Procedures for the project, including: Industrial Hygiene: Managing Occupational Exposures (6-1.61), Integrated Safety Management and Environmental Management Systems (6-1.5), and Air Quality Protection (6-1.15).

Emissions expected from project operations include small quantities of regulated volatile organic compounds (VOCs) and very small quantities of fine particulate (PM10) and approximately eight hazardous air pollutants (HAPs). The need to obtain an air permit and notify the Colorado Air Pollution Control Division (CAPD) of air emission activities was

