

ALARA Aspects of the DC Cook Baffle Bolt/Upflow Modifications

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DC Cook 1,2 Nuclear Plant initiated a replacement program of baffle bolts in the reactor vessel in 2010. Westinghouse technicians replaced 200 baffle bolts per refueling outage to achieve the plant life extension initiative for the two PWR Westinghouse Ice Condenser units located in Michigan, USA. The paper describes the reduction in worker dose from 1.494 mS/bolt in 2010 to 0.3039 mSv/bolt in 2018 by effective implementation of ALARA lessons learned.

DC Cook Unit 2 also completed an upflow modification in the reactor vessel in spring 2018. This resulted in a reduction in coolant jetting through baffle joints which can contribute to fuel failures. Prior to the upflow modification, both units operated with fuel defects in 2016. New ALARA tools will be discussed including a first-of-kind PWR In-Situ Demineralizer with specialty resin to remove EDM debris and CO2 blaster to decon specialized tooling. The Cook Unit 2, cycle 24 refueling outage was completed in 68-day (March 1 to May 7, 2018) for 383 person mSv compared to the ALARA goal of 431 person mSv. Westinghouse technicians indicated the Cook Unit 2 was the lowest dose PWR they had experienced to date for the two major modifications.