


United States Nuclear Regulatory Commission Official Hearing Exhibit		
In the Matter of: DUKE ENERGY FLORIDA, LLC (Levy Nuclear Plant, Units 1 and 2)		
	Commission Mandatory Hearing	
	Docket #: 05200029 05200030	Identified: 07/28/2016
	Exhibit #: DEF-005-MA-CM01	Withdrawn:
	Admitted: 07/28/2016	Stricken:
	Rejected:	
Other:		

Exhibit DEF-005



Levy Nuclear Plant – Safety Panel

John Thrasher – AK Singh – Bob Kitchen – Larry Taylor



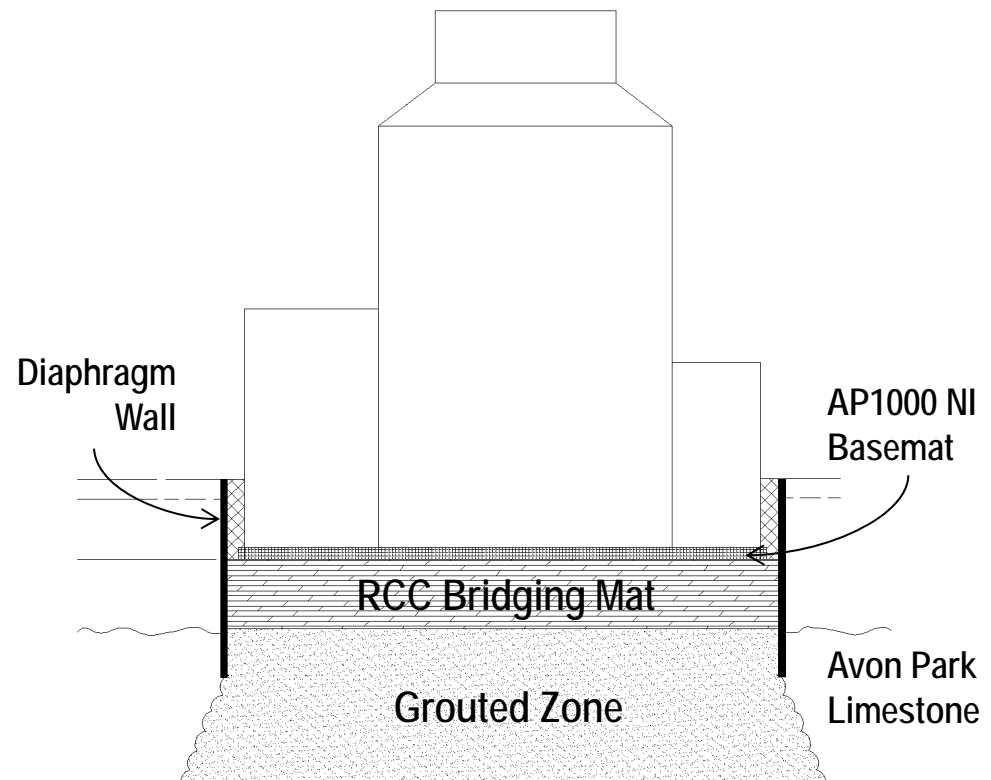
Site Investigations

- Site investigations establish foundation design parameters
- Extensive investigations to define design requirements to address potential Karst
- No significant Karst identified on site
- Design for conservatively postulated Karst



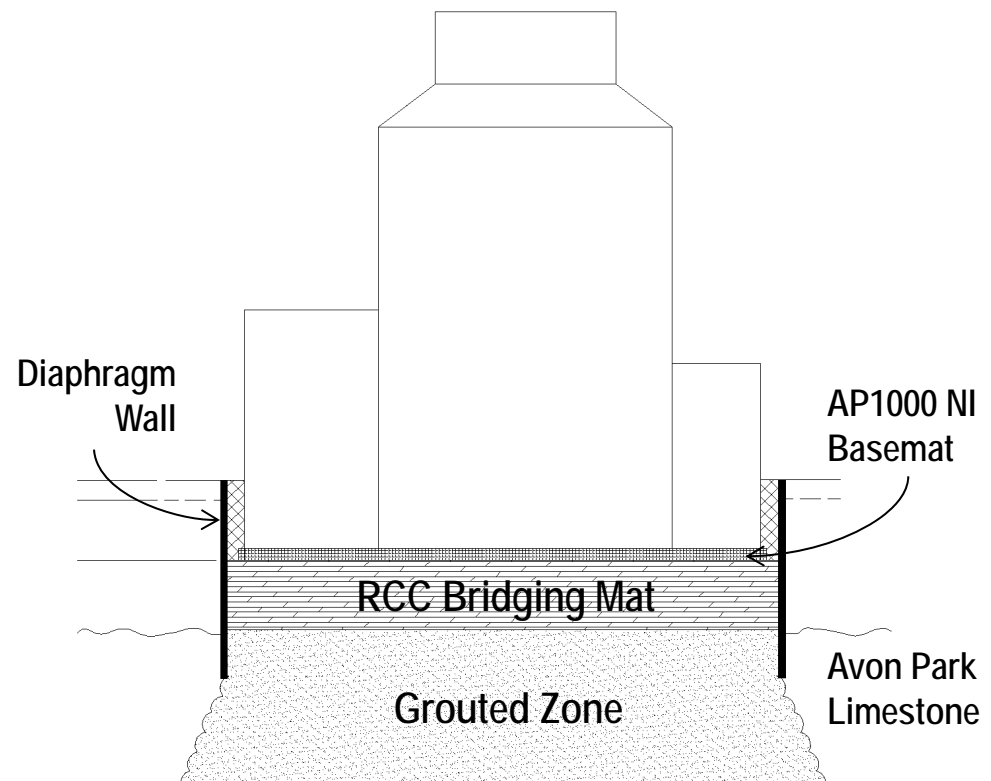
Robust Nuclear Island Foundation Design

- AP1000 Nuclear Island Basemat
- 35 foot thick RCC Bridging Mat
- 75 foot thick Grouted Zone



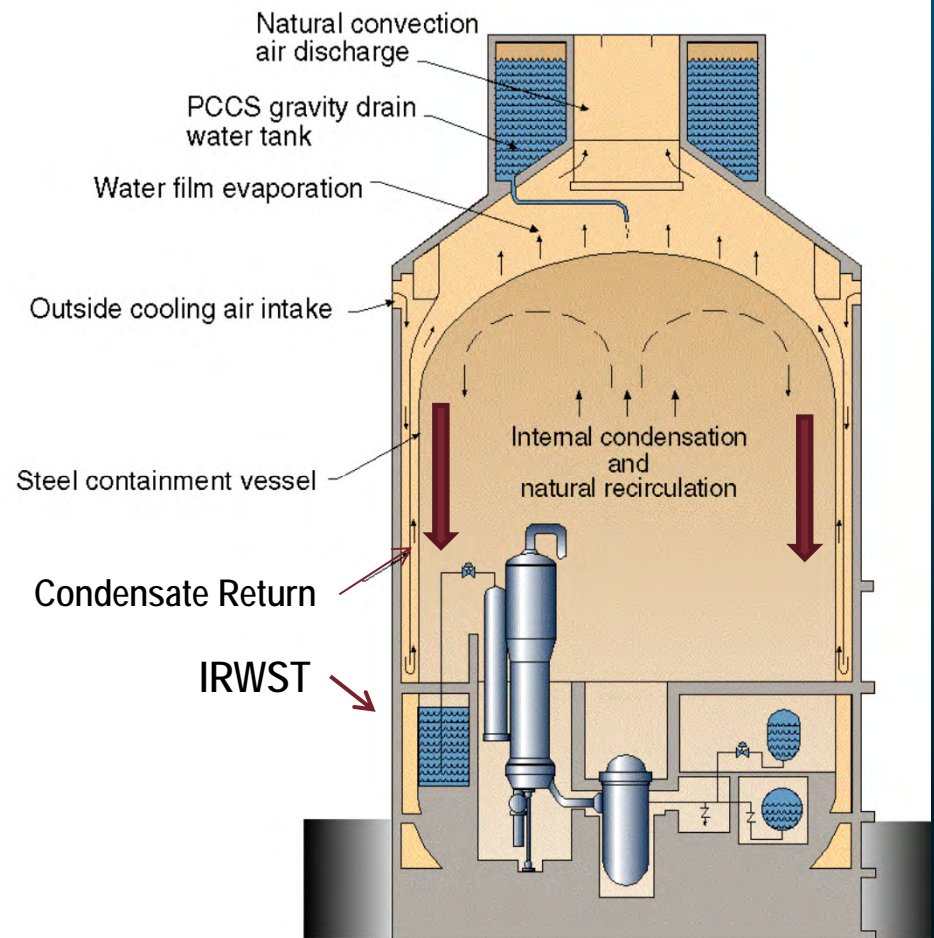
Foundation Design

- Site-Specific ITAAC
 - RCC Bridging Mat
 - Waterproof membrane
- License Conditions
 - Geologic mapping of excavations for safety related structures
 - RCC and bedding mix strength verification and constructability testing



Condensate Return Passive Residual Heat Removal (PRHR)

- During non-LOCA events IRWST water absorbs heat from PRHR HX
- Condensate flows down Containment walls to the condensate return gutter and returns to IRWST



PRHR Performance

- PRHR removes sufficient decay heat for at least 72 hours to maintain acceptable fuel design and pressure boundary limits following a non-LOCA event
- PRHR establishes reactor coolant temperature of 420°F in less than 36 hours based on conservative, non-bounding analyses
- PRHR closed loop cooling can maintain safe shutdown for greater than 14 days
- Transition to open loop cooling continues to provide defense in depth

