

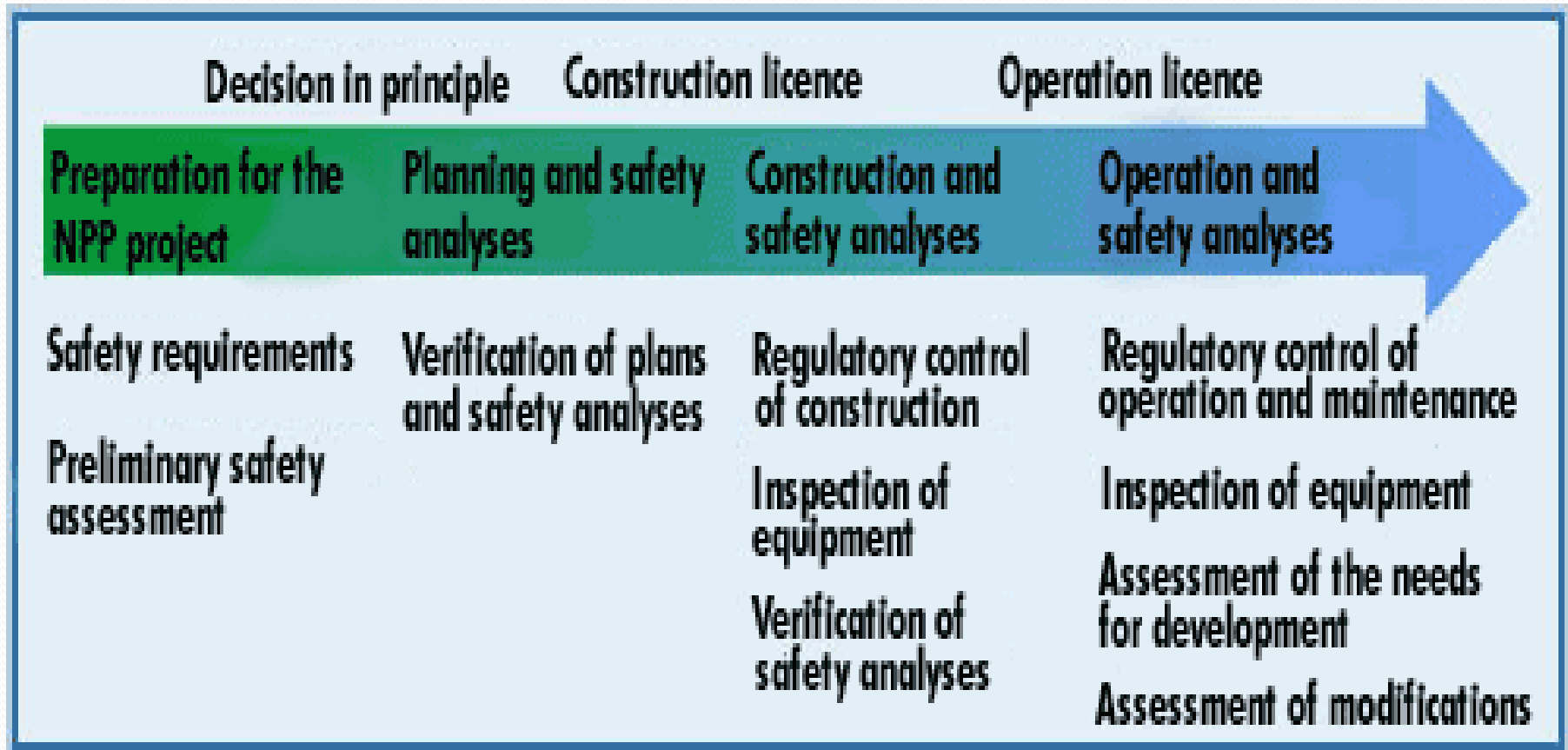
ATSE National Conference 2013

NUCLEAR ENERGY for AUSTRALIA?

Nuclear Installations Regulator
for Australia (NIRA)

Dr Ian J Duncan FTSE

Fig.1 Finnish Radiation and Nuclear Safety Authority (STUK) – Responsibilities.



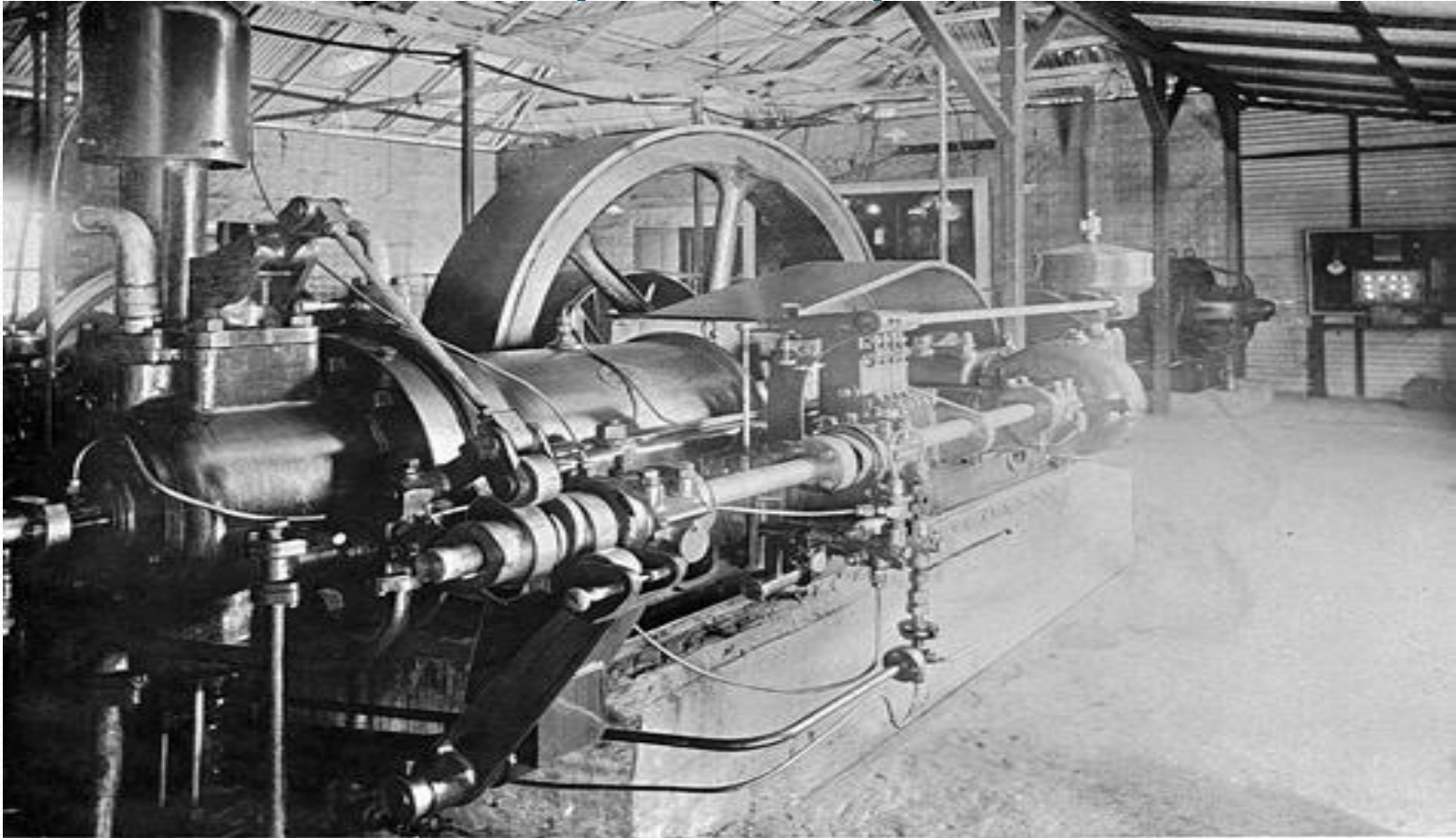
A view of Circular Quay, Sydney, c 1880s – pre-electricity



Municipal lighting and tramways



Horizontal engine driving dynamo (c1920)



State Electricity Commission of Victoria (c1960)

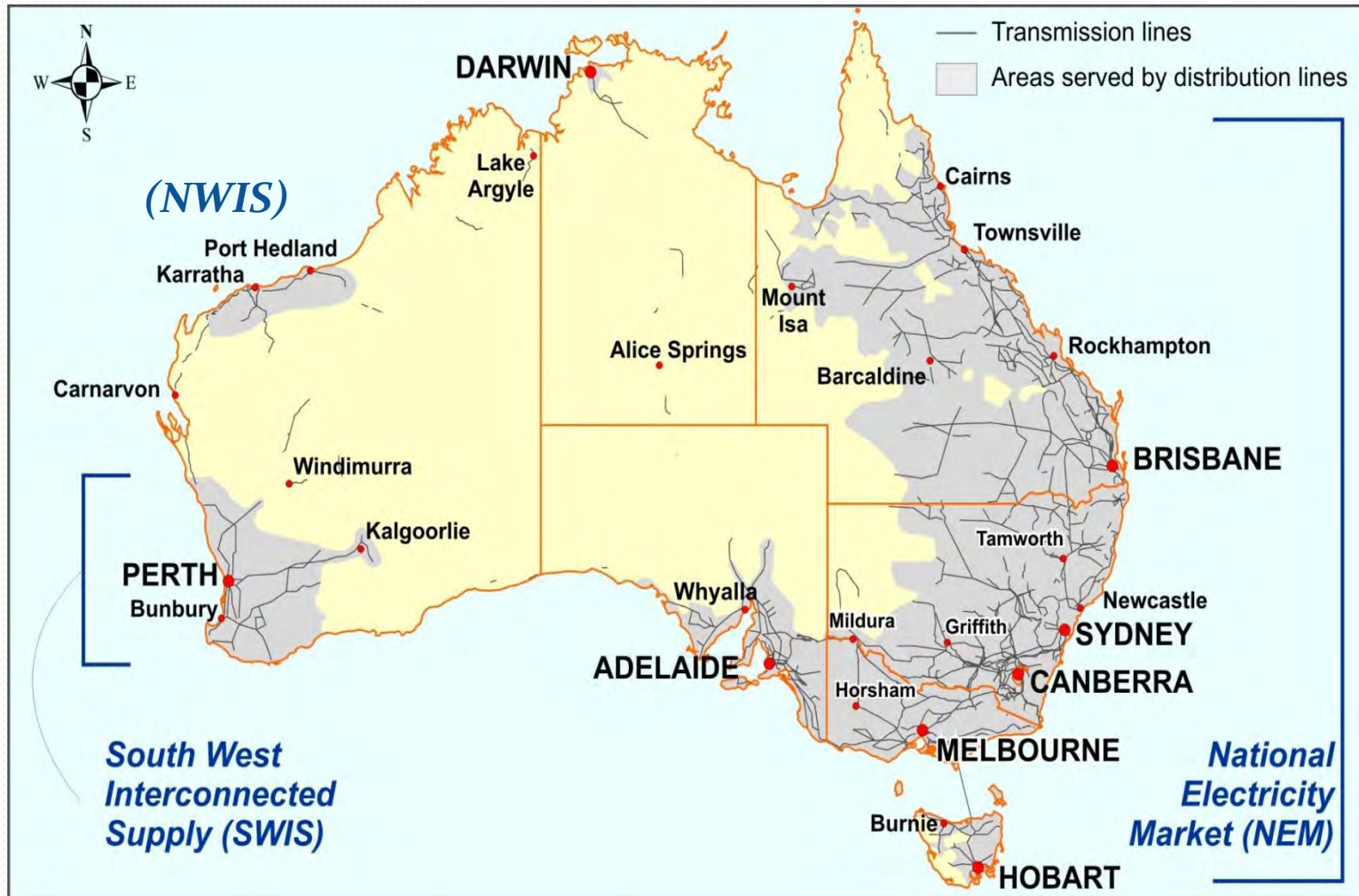


Energy and communication

Society demands....



Australia – Major Electricity Supply Grids



NUCLEAR INSTALLATIONS REGULATOR for AUSTRALIA (NIRA)

- The establishment of NIRA is on the critical path for the development of nuclear power in Australia
- Model it on similar bodies in other nuclear countries such as UK, USA, Finland, Sweden and Japan
- A Commonwealth Agency

NIRA – a Commonwealth Agency

- Highly technical specialist field
- One set of regulations to cover all States
- NIRA to have links with the international nuclear industry, IAEA, WANO, IEA and OECD-NEA.
- Sites could be in any State but regulations need to be uniform for all sites.
- Officers need to be qualified and preferably had experience in other nuclear countries.

State and Commonwealth

- States at Federation
- Ceded to the Commonwealth; Judicature (Administration of Justice), Tax, Defence, International Relationships such as with UN.
- States retained responsibility for; Water, Energy, Minerals, Environment, Infrastructure, Education and Health.
- States administered land holdings (Freehold, Municipal, Aboriginal, Leasehold, State and National Parks etc and acknowledged Commonwealth holdings where such occurred in a State).
- Commonwealth of Australia
- Includes all States and Territories. Areas that it holds in the States include Jervis Bay and the Woomera Rocket range for example.
- ARPANSA, ASNO and ANSTO are Commonwealth agencies.
- It is proposed that NIRA be modelled on the Commonwealth establishment and management of ARPANSA. SCER and COAG to provide the process.

Fig 2: NIRA on the Critical Path

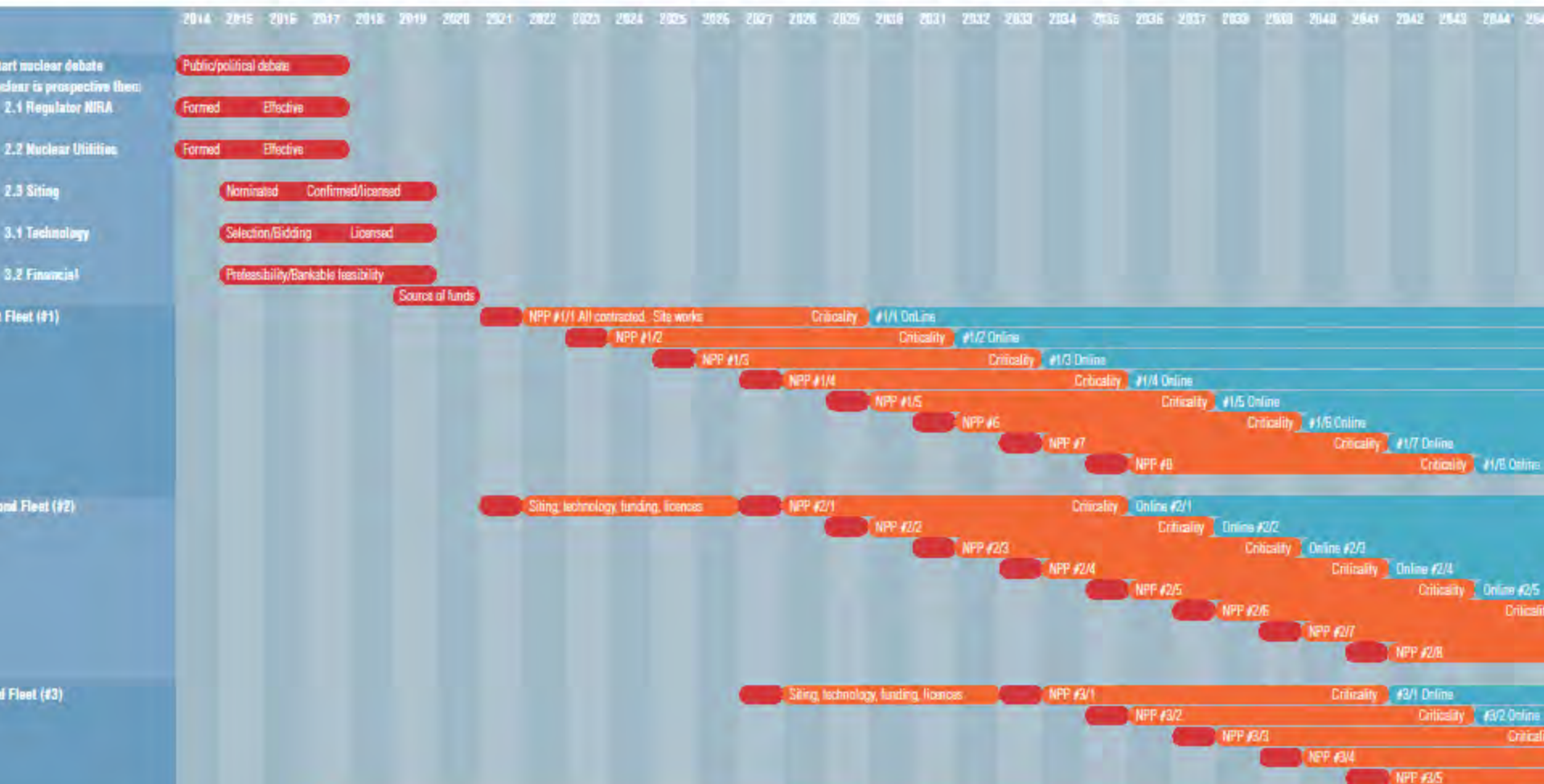
Page 1/4 taken from JDuncan worksheet covering the possible development of 21 NPPs online by 2050

A Chart to demonstrate some of the developmental steps necessary to allow Nuclear Power in Australia.

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031		
1. Restart nuclear debate	Public/political debate - ongoing →																			
2. If nuclear is prospective then:																				
2.1 Regulator NIRA	Formed		Effective																	
2.2 Nuclear Utilities	Formed		Effective																	
2.3 Siting	Nominated		Confirmed/licensed																	
3.1 Technology	Selection/Bidding		Licensed																	
3.2 Financial	Prefeasibility/Bankable feasibility																			
	Source of funds																			
3. First Fleet (#1)									NPP #1/1 All contracted, Site works				Criticality		#1/1 OnLine					
									NPP #1/2				Criticality							
									NPP #1/3											
									NPP #1/4											
									NPP #1/5											
	Indicates items on the 'Critical Path'.																			
2031	The full study goes to year 2050.																			

Possible development of 21 GWe of Nuclear Power in Australia by 2050

ATSE National Conference 2013 – Nuclear Energy



	Σ Fleets 1,2,3 (A)	NPPs online	1	2	3	5	7	9	12	15
Nuclear Generation		Σ GWe	1GWe	2.0	3.0	5.0	7.0	9.0	12.0	15.0
Generating Capacity of ΣNEM+SWIS+NWIS compound growth of 2.25%pa – 140.8GWe 2050			90.2	94.3	98.6	100	107.9	112.7	117.8	123.2

Australia - Total generating capacity and nuclear component



Question

- Should Australia establish a Nuclear Installations Regulator?
- Before attending this Conference:
 - Yes No Abstain
- After hearing the proposal:
 - Yes No Abstain

NIRA

- It is proposed that the States and Commonwealth proceed with the formation of a Nuclear Installations Regulator for Australia (NIRA).

- Thank you
- Ian Duncan