



# **PUBLIC MEETING**



**DRAFT ENVIRONMENTAL IMPACT STATEMENT  
FOR THE V.C. SUMMER NUCLEAR STATION  
UNITS 2 AND 3  
COMBINED LICENSE APPLICATION**

Ryan Whited, Branch Chief  
Patricia Vokoun, Environmental Project Manager

# U.S. Nuclear Regulatory Commission



- NRC's mission:
  - Protect public health and safety
  - Promote common defense and security
  - Protect the environment.
- The NRC is an Independent Agency.
- The NRC has over 30 years of experience regulating operating reactors and other civilian uses of nuclear materials.



# Purposes of this Meeting



- Describe NRC review process leading up to today
- Provide the schedule from today forward
- Share NRC's preliminary recommendation with you
- Describe how you can provide comments
- **Listen to and gather your comments tonight**

# Draft Environmental Impact Statement for the V. C. Summer Nuclear Station Units 2 and 3

Richard L. Darden, Ph.D.  
Regulatory Division  
Charleston District

Thursday May 27, 2010



US Army Corps of Engineers  
**BUILDING STRONG**®



# U.S. Army Corps of Engineers Regulatory Role and Authority

- USACE is the federal agency responsible for administering Section 404 of the Clean Water Act
- USACE regulates the discharge of dredged or fill material into virtually all waters of the United States
- USACE permit decisions are “federal actions” and must comply with the National Environmental Policy Act (NEPA)



# Cooperating Agency Status

- NRC is serving as the “Lead Agency” in the preparation of this Environmental Impact Statement (EIS)
- USACE is serving as a “Cooperating Agency” in the preparation of this EIS
- The Final EIS will serve as the environmental document on which USACE permit decisions will be based for this proposed project



# Public Participation with USACE

- Public involvement and participation are important to USACE and are critical to EIS preparation
- Comments received at this meeting will be considered in the preparation of the Final EIS and subsequent permit decisions



# Proposed Impacts to Waters of the U.S.

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- ▶ V.C. Summer Nuclear Station Site

Streams: 774 linear feet of fill impact

Wetlands: 0.26 acre fill impact

Open waters: 1.0 acre fill impact (Broad and Parr Reservoirs)

- ▶ All Proposed Transmission Lines

Forested wetland clearing: 220 acres



# USACE Permit Decisions

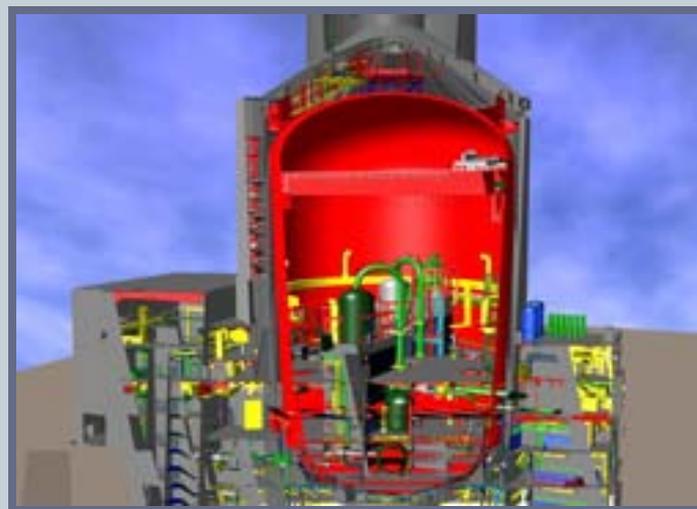
- Permit application submitted by South Carolina Electric & Gas (SCE&G) with Santee Cooper is currently available on USACE Public Notice
- USACE Public Notice is available at <http://www.sac.usace.army.mil/?action=publicnotices.pn2010>
- USACE permit decision on the proposed nuclear project will likely precede NRC combined license decisions, but will be made after the Final EIS has been completed



# Combined Licenses



- South Carolina Electric and Gas (SCE&G) with Santee Cooper submitted an application for combined licenses (COLs) for two new nuclear units (Units 2 & 3).
  - A combined license gives authorization to construct and operate a new nuclear unit.
  - Units 2 and 3, if approved, would be built on the same site as Summer Unit 1.
  - There are two NRC reviews for the Summer COLs
    - Safety
    - Environmental



AP1000 (Source: US NRC)

# Environmental Review

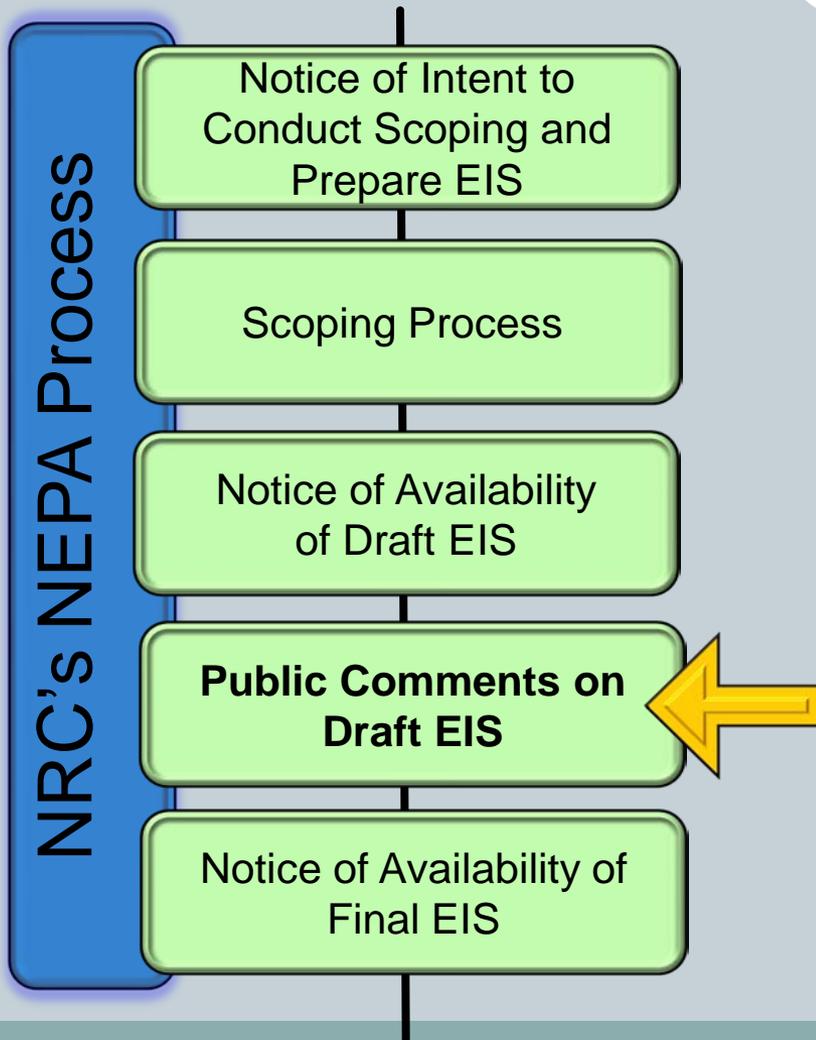


- NRC is reviewing the application for constructing and operating two new reactors.



- US Army Corps of Engineers, Charleston District, is
  - Reviewing a USACE permit application
  - A cooperating agency on the environmental review and preparation of the EIS.

# Review Process & Schedule



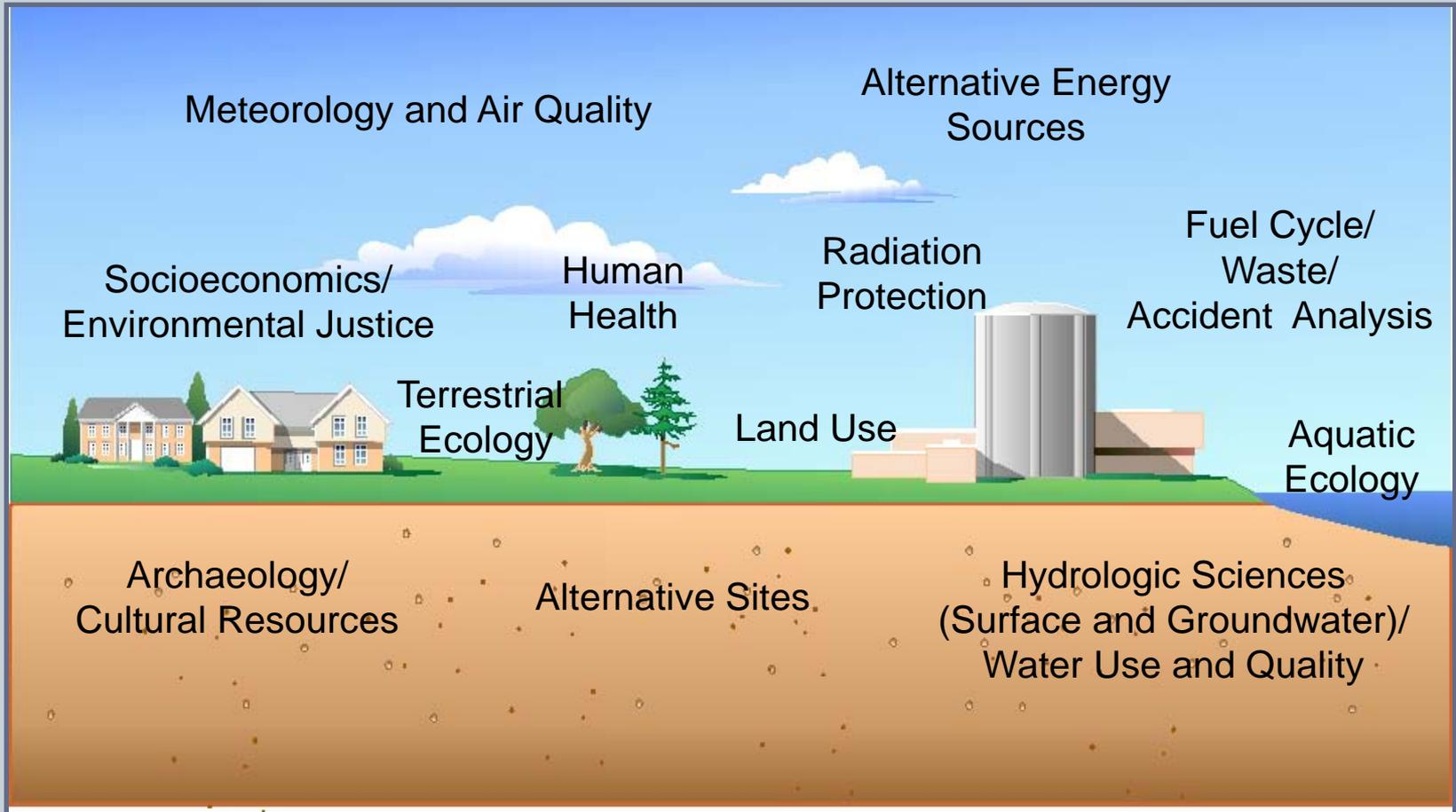
- Published *Federal Register* notice in January 2009.
- Scoping period from Jan 2009 to Apr 2009; scoping meetings held in Jan 2009 (Winnsboro and Blair).
- Published *Federal Register* notice on April 26, 2010.
- **Comment period on Draft EIS is from April 26 to July 09, 2010.**
- Final EIS expected to be published in February 2011.

# Organization of EIS



- Chapter 1 – Introduction
- Chapter 2 – Affected Environment
- Chapter 3 – Site Layout and Plant Description
- Chapter 4 – Construction Impacts
- Chapter 5 – Operational Impacts
- Chapter 6 – Fuel Cycle, Transportation, and Decommissioning Impacts
- Chapter 7 – Cumulative Impacts
- Chapter 8 – Need for Power
- Chapter 9 – Environmental Impacts of Alternatives
- Chapter 10 – Conclusions and Recommendation
  
- Appendices A - J

# Resource Areas



Source U.S. NRC

# How Impacts are Quantified



NRC has established three levels of impact:

***SMALL:*** Effect is not detectable, or so minor it will neither destabilize nor noticeably alter any important attribute of the resource.

***MODERATE:*** Effect is sufficient to alter noticeably, but not destabilize, important attributes of the resource.

***LARGE:*** Effect is clearly noticeable and sufficient to destabilize important attributes of the resource.

# Water Resources Impacts



- Analysis includes impacts on surface water and groundwater use and quality.
- Impacts for use and quality for both surface water and groundwater would be SMALL.
  - Surface water use represents about 1% of the annual average flow in the Broad River.
    - The remaining volume of water withdrawn would be returned to Parr Reservoir.
  - Groundwater would not be used for operation of Units 2 and 3.



Broad River (Source: SCDNR)

# Ecological Impacts



- Evaluated impacts on birds, fish, wildlife, plants, and wetlands on the Summer site and nearby area.
  - Staff consulted with S.C. Department of Natural Resources, U.S. Fish and Wildlife Service, and National Marine Fisheries Service.
- Impacts for terrestrial ecology would range from SMALL to MODERATE.
- Impacts for aquatic ecology would be SMALL.

Bald Eagle



Smooth  
Coneflower



photo by John Alderman

U.S. Fish and Wildlife Service / photo by Dale Butler

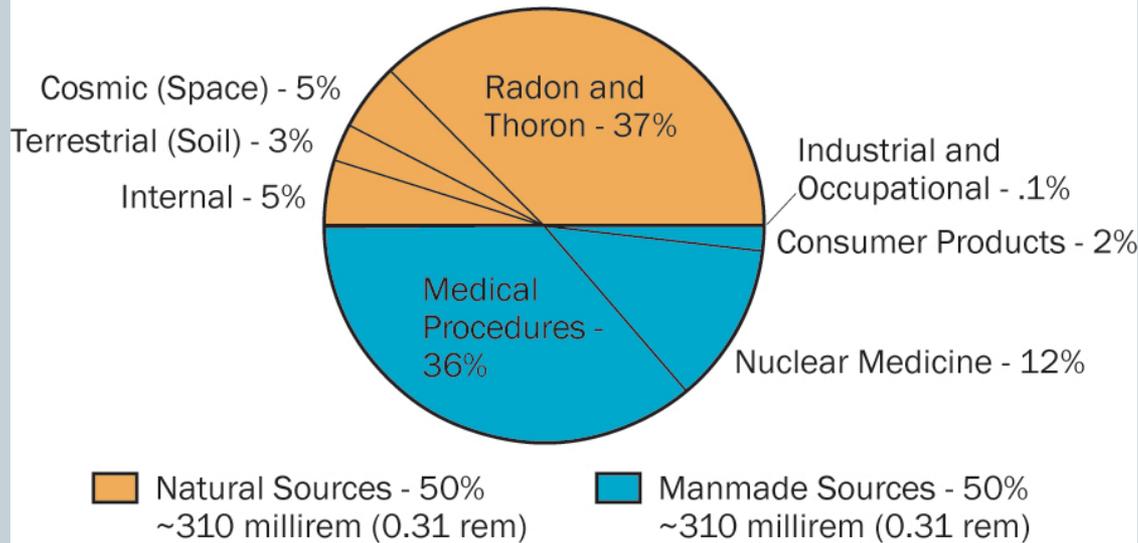
Carolina  
Heelsplitter

# Radiological Impacts



- Includes impacts on construction workers, members of the public, plant workers, and wildlife.
  - Doses to workers would be SMALL and within regulatory limits.

**Sources of Radiation Exposure in the United States**



Source: NCRP Report No.160(2009)

Full report is available on the NCRP Web site at [www.NCRPpublications.org](http://www.NCRPpublications.org).

- Doses to members of the public from construction and operation would be SMALL and within regulatory limits.
- Doses to wildlife would also be SMALL and below relevant guidelines.

# Environmental Justice and Socioeconomics



- Environmental justice review focuses on minority and low-income populations.
  - Minority and low-income populations would experience disproportionate negative effects from traffic when building.
- Socioeconomic review includes impacts on taxes, housing, education, traffic and public services.
  - Adverse impacts range from SMALL to MODERATE for building and SMALL for operation.
  - Beneficial impacts would be LARGE during operation.



Source: U.S. DHS

# Cultural and Historic Resources



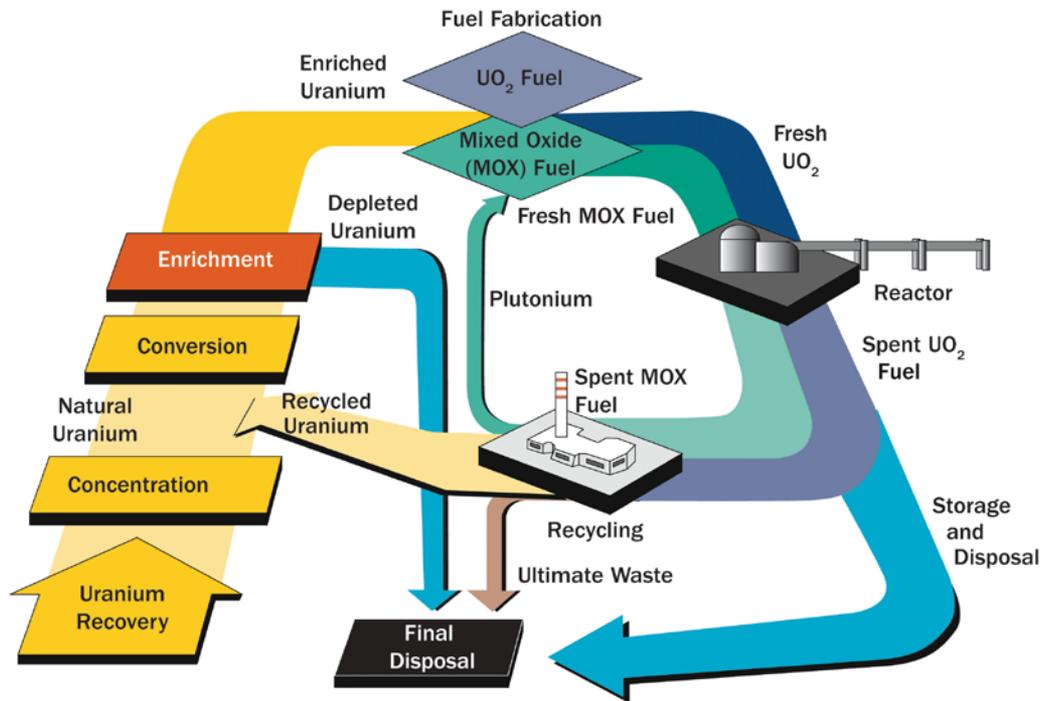
Source: Dan Strom, PNNL

- Cultural and Historic Resources review includes impacts on archaeological and architectural properties or sites.
  - Four archaeological sites have been recommended as National Register eligible, potentially eligible, or recommended for preservation
- The team found that the onsite impacts for cultural resources would be MODERATE when building and SMALL for operation.

# Fuel Cycle, Decommissioning, & Transportation



The Nuclear Fuel Cycle



Source: U.S. Nuclear Regulatory Commission

- Includes impacts from the uranium fuel cycle, transportation of fuel and radioactive waste, and decommissioning.
- These activities would result in SMALL impacts on the environment.

# Cumulative Impacts

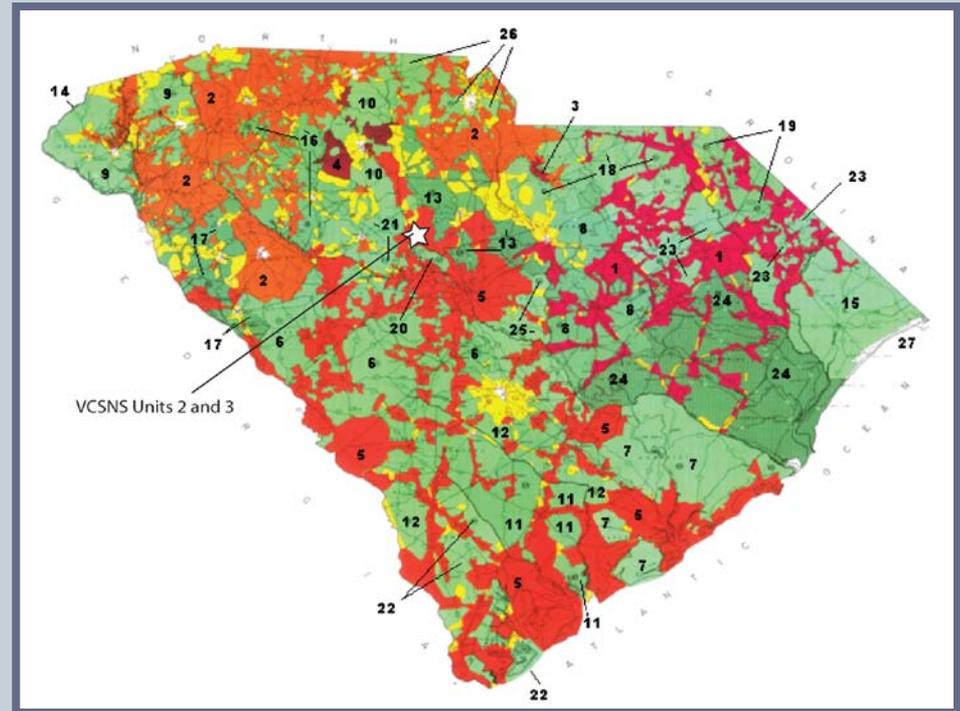


- Cumulative impacts include the impacts from
  - The proposed action (Units 2 & 3) and
  - Other past, present, and reasonably foreseeable future actions.
    - Examples include:
      - Summer Nuclear Station Unit 1
      - Lee Nuclear Station
- Adverse cumulative impacts would range from SMALL to MODERATE.
- Beneficial cumulative economic impacts would range from SMALL to LARGE.

# Need for Power



- Team relied upon the findings of
  - The Public Service Commission of South Carolina as well as
  - The Board of Directors of the South Carolina Public Service Authority.
- Team agreed there is a need for new baseload generating power in the region.



The Combined Service Territory of SCE&G and Santee Cooper (including State electric cooperatives) excludes areas 1-5 (Figure 8-1, Draft EIS)

# Alternatives



## ○ Energy Alternatives

- None of the feasible baseload alternatives would be environmentally preferable.



Source: U.S. DOE

Source: TVA

## ○ Alternative Sites

- Four alternative sites were compared to the Summer site.
- Analysis showed none of the alternative sites would be environmentally preferable to the Summer site.



Source: U.S. NRC

## ○ Alternative System Designs

- No alternative cooling system would be environmentally preferable to the proposed plant design.

# Preliminary Recommendation



- The NRC staff's preliminary recommendation to the Commission is to issue the combined licenses.
  - Most of the environmental impacts would be expected to be SMALL.
  - None of the feasible alternative energy sources evaluated would be environmentally preferable.
  - None of the alternative sites would be environmentally preferable to the Summer site.

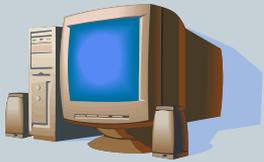
# Access to the Draft EIS



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[www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1939](http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1939)



Fairfield County Library

300 Washington Street

Winnsboro, SC

# Submitting Comments on Draft EIS



Summer.COLEIS@nrc.gov



<http://www.nrc.gov/public-involve/doc-comment/form.html>



Chief, Rules, Announcements, and Directives Branch  
Division of Administrative Services  
Mailstop TWB-05-B01M  
US Nuclear Regulatory Commission  
Washington DC, 20555-0001



Fax to RDB at (301) 492-3446



NRC Court Reporter at this meeting

**COMMENTS ARE DUE BY JULY 9, 2010**