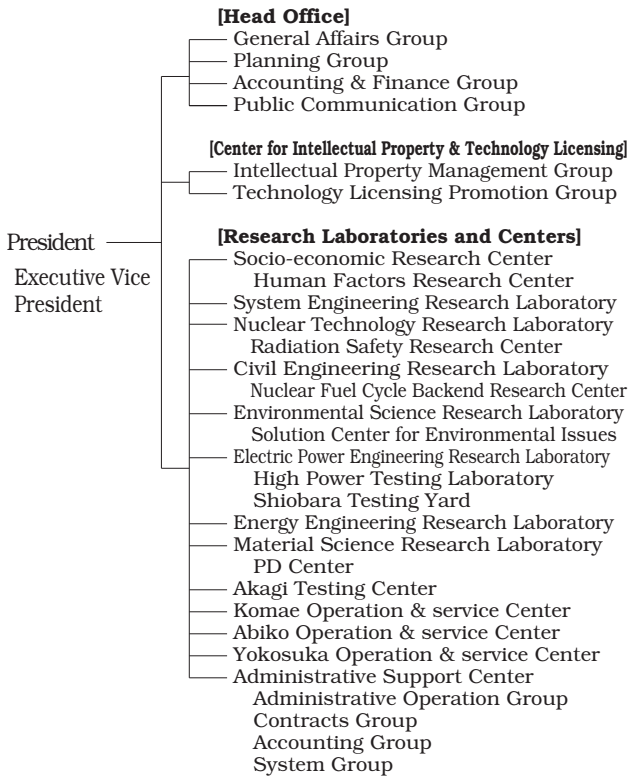


# Central Research Institute of Electric Power Industry: Organization and Activities

## Three Research Objectives

1. Cost reduction and ensuring reliability
2. Harmonization of energy and environment
3. Creation of integrated energy service

## Organization of the Central Research Institute of Electric Power Industry



## Research Projects Implemented in Fiscal 2008

Total	635 projects
* Research Subject	83 projects
(Project Research Subjects to Respond to the Field Requirements	46 Subjects)
(Basic Research Subjects to Back the Fields up	37 Subjects)
* Funded Researches by Electric Utilities and National Government and others	563 projects

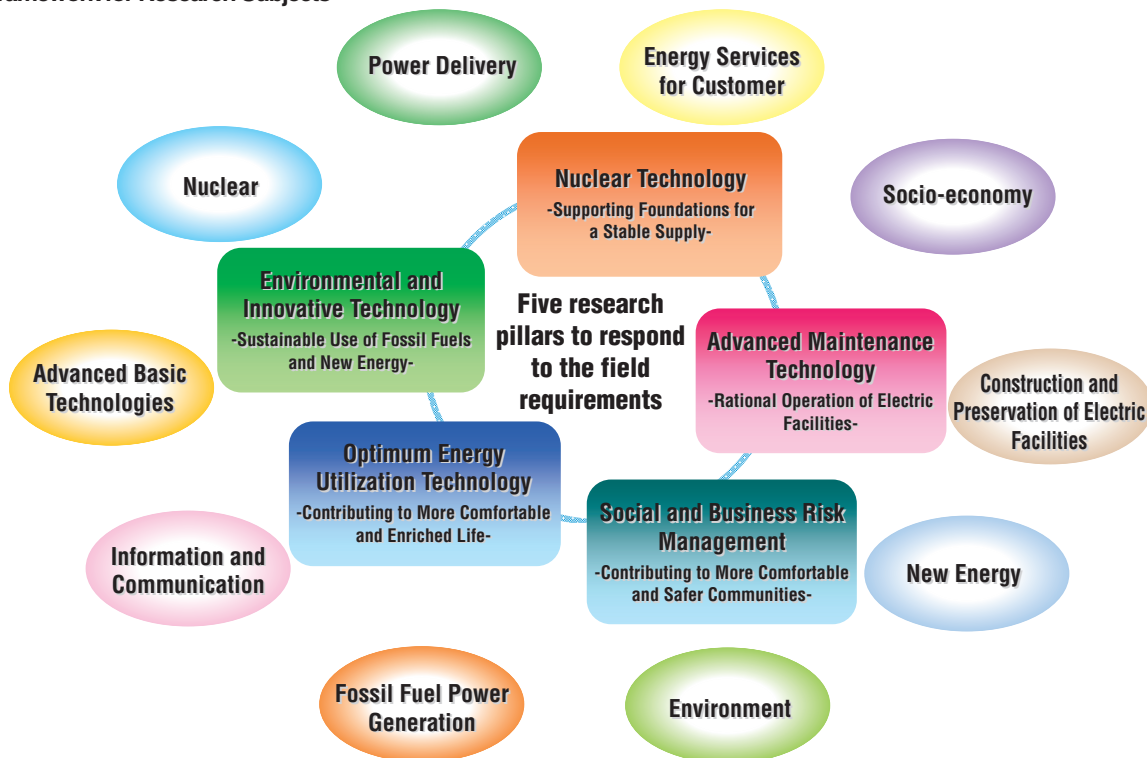
## Staff Strength in Fiscal 2008

Total (not including executives)	789
* Research Staff	694
* Administrative Staff	95

## Fiscal 2008 Expenditures

Total Expenditure	33.83 billion yen
* Business Activity Expenditure	25.72 billion yen
(Business Expense Expenditure	23.89 billion yen)
(Management Cost Expenditure	1.83 billion yen)
* Investment Activity Expenditure	
(Research Facility Acquiring)	6.31 billion yen

## 2008 Framework for Research Subjects



Ten Research Fields to back Five Research Pillars up

# On the Publication of the Annual Research Report 2009



**Masahiro Kakumu,**  
**President**  
Central Research Institute  
of Electric Power Industry

Recent years have witnessed rising interest in wind power and photovoltaic power generation and electric vehicles, all of which represent new technologies to respond to global warming. The Government of Japan announced a series of higher reduction targets for GHG emissions this year. Meanwhile, the supply of energy resources still remains unstable as clearly observed with the fluctuations of oil prices. Under these circumstances, the Central Research Institute of Electric Power Industry has been conducting a wide range of research activities as a comprehensive research institute for all energy-related fields while envisaging the likely state of electricity supply in the future. The most important current research themes of the CRIEPI are "ensuring energy security" and "responding to global environmental problems".

The Annual Research Report 2009 outlines the principal research results in FY 2008, including the results of research on power system technology in preparation for the integration of photovoltaic and other new power generation facilities, CO<sub>2</sub> recovery technology for power stations and evaluation of CO<sub>2</sub> emission reduction technologies, all of which are designed to help establish a low carbon society. Positive results have also been produced by research on evaluation technologies for the scale of earthquakes, lightning risk of transmission facilities and higher combustion rate of nuclear fuel to give peace of mind through a stable supply of electricity.

We will be very pleased if this publication further enhances understanding of the CRIEPI's activities on the part of its readers and will be most grateful for your valuable opinions.

# Preface

In fiscal 2008, the CRIEPI conducted a total of 83 research projects, focusing on the achievement of three goals, i.e. “cost reduction and ensuring reliability”, “harmonization of energy and environment” and “creation of integrated energy services”. Of these 83 projects, the results of 53 projects are compiled in this Annual Report 2009. We believe that these projects particularly contribute to solving a number of technological and economic problems faced by electric utilities. They were selected according to the following criteria and are presented here as our principal research results.

- Projects with a particularly high value in terms of innovation, creativity, scientific and technical achievements, economic efficiency and practicality
- Projects which are timely in view of the current socioeconomic and energy situations
- Projects which demonstrate the CRIEPI’s abilities, such as our general R & D capability and expertise in basic as well as exploratory research

We will be greatly honoured if the reader finds the research results introduced in the Report useful to facilitate the further advancement of knowledge and technology.

**Shirabe Akita, Chairman**

Annual Research Report 2009 Editing Committee

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# Annual Research Report 2009

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# I . Principal Research Results

This Annual Report introduces 53 principal results of the projects conducted in fiscal 2008 in the following fields.

## General Overview

- A** Promoted Project Subjects / Project Subjects
- B** Base Research Subjects

## Research Fields

- 1** Socio-economy
- 2** Environment
- 3** Energy Services for Customer
- 4** Power Delivery
- 5** Nuclear
- 6** Fossil Fuel Power Generation
- 7** New Energy
- 8** Information and Communication
- 9** Construction and Preservation of Electric Facilities
- 10** Advanced Basic Technologies

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Note : The positions of the researchers listed in the principal research results are as of the end of September, 2009.