I. OBJECTIVES

This actively managed commodity program will consist primarily of commodity forwards, futures and options, commodity-related equities, and a short duration fixed income portfolio backing the commodity derivatives. The objectives of this portfolio are:

1. to generate positive excess returns of 100 bps or more annually versus the Dow Jones – UBS Commodity Total Return Index (Index); and,
2. to generate those excess returns with an Information Ratio of 0.50 or greater over a rolling 3-year period.

II. PORTFOLIO RISK MANAGEMENT

The Board’s expectations are that this portfolio be actively managed within the spirit of a Full Discretion Commodity Program mandate. Permitted strategies include:

- Buying or selling futures, forwards, and options on both individual commodities, as well as the same derivatives on commodity indices. Commodities include precious metals, base metals, energies and agricultural (grains and livestock) sectors;
- Actively managing a short duration fixed income portfolio (including cash equivalents) and hedge instruments backing the commodity derivative positions; and
- Buying or selling commodity and commodity-related stocks.

Within this framework, the following are the portfolio risk constraints under which the manager is required to operate:

A. General Fixed Income Guidelines

1. Interest Rate Risk
   i. The effective or option-adjusted duration of the portfolio must range from zero to 0.75 year.

2. Credit Spread Risk
The effective or option-adjusted spread duration of the portfolio must range from zero to 1.0 year.

3. Credit Risk

i. The weighted-average credit rating of the portfolio must be Aa3/AA- or better.

ii. Only commercial paper issuers and negotiable certificates of deposit rated P-2 or better are acceptable.

iii. Securities other than commercial paper issuers and negotiable CDs must be rated Baa3/BBB- or better.

Note: Credit ratings shall include ratings issued by Moody’s, Standard & Poor’s, and Fitch Investor Service (hereafter referred to as the “Credit Rating Agencies”). If each of the Credit Rating Agencies assigns a credit rating, the credit rating will be the middle of the three ratings (for example, if Moody’s rates a security Baa2, S&P rates a security BB+, and Fitch rates a security BBB-, the middle credit rating would be considered BBB- by Fitch). If only two of the three Credit Rating Agencies assign a credit rating, the credit rating will be the lower of the two. If only one of the Credit Rating Agencies assigns a credit rating, that credit rating will apply.

The rating for the internally-managed PSERS Short-Term Investment Pool is considered Aaa/AAA for credit rating purposes.

4. Currency Risk

i. No more than 20% of the fixed income portfolio may be in non-U.S. currencies. Outright currency exposure and hedging is permitted through the use of futures, options, or forward contracts subject to Derivative Counterparty Risk restrictions documented in C. below.

ii. No more than 10% of the portfolio may be invested in any single non-U.S. currency other than the Euro, U.K. Pound, Japanese Yen, and Canadian Dollar.
5. **Sovereign Risk**
   
i. The portfolio may not invest in securities and bonds from non-U.S. countries with a Sovereign Rating below Baa3/BBB-.

   ii. No more than 20% of the portfolio may be invested in non-U.S. government securities and bonds issued by non-U.S. domiciled entities.

   iii. No more than 10% of the portfolio may be invested in securities and bonds from any individual non-U.S. country other than the U.K., Japan, Canada, Germany, or France.

6. **Concentration Risk**
   
i. No more than 7% of the portfolio at market value may be invested in the securities of any issuer (excluding issues or issuers fully guaranteed by the U.S. Government and its agencies rated Aaa/AAA and securities issued by non-US. Governments or supranational issuers).

   ii. No more than 10% of the portfolio at market value may be invested in non-convertible preferred stock and convertible bonds (bonds convertible into common stock).

   iii. No more than 25% of the portfolio at market value may be invested in asset backed securities (defined as financial instruments collateralized by one or more types of assets including mortgages, receivables, loan paper, etc.). This limit does not apply to U.S. or U.S. agency guaranteed asset backed securities.

   iv. No more than 10% of the market value of the portfolio invested in municipal securities.

B. **General Stock Guidelines**

The equity portfolio is expected to be invested in commodity and commodity-related stocks.

1. **Concentration Risk**
   
i. The portfolio may not hold more than 5% of the sum total of all classes of outstanding shares of any one corporation.

   ii. The portfolio may not have more than 7% of the market value invested in the securities of any corporation (which includes the total of common, convertible, preferred, and fixed income).

   iii. The portfolio may not have more than 10% of the market value invested in preferred issues.
2. Sovereign Risk
   i. Investments in individual countries not included in the MSCI All Country World Index are limited to no more than 3% of the portfolio at market value.
   ii. Total investments in countries not included in the MSCI All Country World Index are limited to 10% of the portfolio at market value.
   iii. Investments in individual MSCI All Country World Index countries are limited to no more than 15% of the portfolio at market value excluding the U.S. for which there is no limit.

ADR's, ADS's, EDR's, GDR's, GDS's, and IDR's listed on any MSCI All Country World Index country or Luxembourg may be purchased for any country, but are included in the individual country limitations.

C. Commodity Sector Concentration Risk

The commodity sector's weighting in the portfolio may not be more than 50% of the portfolio's assets at market value. Commodity sectors include energy, precious metals, base metals, and agriculture (livestock and grains).

D. Derivative Counterparty Risk

1. The commercial and investment banks used for approved OTC futures, approved OTC options, or forward/spot currency transactions must be rated A3 or better by Moody's Counterparty Ratings, (if not rated by Moody's, then rated A- or better by Standard and Poor's Counterparty Ratings or rated B or better by Fitch's Bank Individual Ratings).
2. Net forward/spot contracts, futures contracts, and option exposures to any counterparty will not exceed 20% of the market value of the portfolio. Exposure is measured in net U.S. dollar equivalent terms (offsetting contracts will be netted for this purpose).
3. Counterparty limits will not be applied to listed futures and options.

E. Liquidity Risk

Positions in letter stock, private placements (excluding 144A securities), physical real estate, physical commodities, and any other positions unable to be liquidated promptly without severe market impact are prohibited.
III. DERIVATIVES

The portfolio is permitted to establish and maintain long and short positions in:

1. Listed options on currencies;
2. Listed options on commodity, fixed income and currency futures;
3. Fixed income forward commitments, including mortgage dollar rolls;
4. Commodity and currency forward commitments;
5. Listed fixed income futures contracts; and
6. Listed commodity and currency futures contracts.

The portfolio is to be managed so that the total net commodity exposure is equal to no greater than 105% of the underlying assets of the total portfolio (long positions minus short positions can be no greater than 105%). Fixed income derivatives may only be used to manage interest rate risk.

IV. AMENDMENTS

A written request to the Chief Investment Officer (CIO) and Managing Director of External Public Markets, Risk & Compliance (DEPM) should be made if the manager believes that these portfolio risk constraints significantly limit the ability of the manager to achieve the objectives of the portfolio. A written amendment will be issued from the CIO, or the DEPM in the CIO’s absence, if the request is approved.